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January 1982

In this issue:
Articles on prices, collective bargaining, and State labor legislation in 1981

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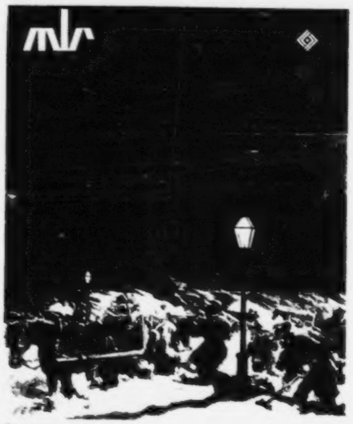

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MONTHLY LABOR REVIEW

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Robert W. Fisher, Executive Editor

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Labor Month In Review

JOB SAFETY. Job-related injuries and illnesses declined in 1980. The Bureau of Labor Statistics' annual survey, conducted in 1981, shows that 1 injury or illness occurred for every 12 workers in the private economy during 1980. The ratio was 1 out of 11 in each of the previous 4 years.

The latest survey also shows that incidence rates and total cases fell for the first time in 5 years. The incidence rate fell from 9.5 injuries and illnesses per 100 full-time workers in 1979 to 8.7 in 1980. About 10 percent of the 0.8 decline in the incidence rate was the result of a decrease in total hours worked between 1979 and 1980.

In 1980, work-related deaths in units with 11 or more employees also fell—from 4,950 in 1979 to 4,400 in 1980. The fatality rate fell from 8.6 per 100,000 workers in 1979 to 7.7 in 1980. Over the 2-year period from 1979 to 1980, 30 percent of all occupational fatalities were associated with the operation of cars and trucks. (See page 49 for a report on job-related deaths.)

Occupational injuries. Occupational injuries occurred at a rate of 8.5 per 100 full-time workers during 1980—down from 9.2 in 1979.

Among industry divisions, only agriculture, forestry, and fishing showed a slight increase in the incidence of injuries. Rates for the remaining seven industry divisions fell.

Of the 69 major industry groups, incidence rates decreased in 57, increased in 9, and 3 remained at the 1979 level. Incidence rates for injuries involving lost workdays decreased in 48, increased in 9, and were unchanged in 12 of the 69 industries.

The severity of injuries is reflected in the incidence rate of lost workdays. In 1980, there were 63.7 lost workdays per 100 full-time workers due to injury—down from 66.2 in 1979. Mining was the only industry division to show an increase in the lost workdays rate; it had the highest rate of lost workdays among all industry divisions. Since 1977, the lost workdays incidence rate in mining has been more than twice the national average.

Injury incidence rates in establishments with fewer than 50 or more than 1,000 workers were lower than in mid-size establishments. Rates continued to be highest in establishments with 100 to 249 employees.

About 6.0 million work-related injuries occurred in 1979 compared with nearly 5.5 million in 1980—a decline of about half a million cases. Both lost workday injuries and nonfatal injuries without lost workdays decreased. As in 1979, 45 percent of all injuries involved lost worktime.

There were 1.7 million fewer days lost due to occupational injuries in 1980 than in 1979. The 40.9 million workdays lost in 1980 represent lost work time equivalent to a full year's work for nearly 163,600 employees.

Occupational illnesses. The recording and reporting of illnesses continue to present measurement problems, since employers (and physicians) often are unable to recognize some illnesses as work-related. The annual survey includes data only on the incidence of visible illnesses of workers. To the extent that occupational illnesses are unrecognized and, therefore, unreported, the survey estimates understate their occurrence.

Occupational illnesses include any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. The incidence of occupational illnesses measured by the annual survey refers to the number of new illness cases occurring during a year and does not measure continuing conditions of illness reported in previous surveys. Illnesses are recorded only for the year in which they are recognized and diagnosed as work-related.

Nearly 130,200 occupational illnesses were recognized in 1980; the number recognized in 1979 was 148,000. During this period, the number of illnesses decreased in 7 of the 8 industry divisions; cases increased in agriculture, forestry, and fishing.

As in previous years, skin diseases or disorders continued to account for the majority of all illnesses—about 4 of every 10 cases. This is largely because they are more readily observable than other illnesses.

Background of survey. The Annual Survey of Occupational Injuries and Illnesses is a Federal/State cooperative program in which State agencies participate with the Bureau of Labor Statistics of the U.S. Department of Labor. Response to the 1980 survey was mandatory. The sample consisted of 280,000 units in the private sector.

The occupational injury and illness data reported through the annual survey are based on the records which employers maintain under the Occupational Safety and Health Act of 1970.

A BLS bulletin with full survey details is planned for publication later this year. □

Rebasing of price indexes delayed

Because of severe budget constraints, the Bureau of Labor Statistics has not been able to carry out by January 1982 the Government directive to rebase the Consumer Price Index and the Producer Price Index to the new Federal 1977 = 100 reference base. Postponement is required because of the direct production work necessary to prepare the data and the information services to explain the change. No alternative date for adopting the 1977 reference base has been set.

The spendable earnings series: has it outlived its usefulness?

Enough questions have been raised about accuracy,
relevance, and concepts to suggest that
this is a series whose time is up;
statistical evidence indicates that the measure
has been seriously deficient in tracking 'spendable' earnings

PAUL O. FLAIM

Are American workers "better off" now than they were 5 or 10 years ago? That is, considering wage and inflation trends, have workers been making further gains or losing ground in terms of the purchasing power of their earnings?

The answers to this question can vary considerably, depending on what statistical series is used to determine the basic trends in gross earnings and on what calculations and assumptions are made in translating the statistics on gross earnings into estimates of purchasing power.

One of the statistics most often used to depict the trend in purchasing power of American workers has been the "real spendable weekly earnings of workers with three dependents." This series, published monthly by the Bureau of Labor Statistics, was initiated about four decades ago. Its initial purpose was to keep track of the purchasing power of factory workers by taking into account changes in consumer prices as well as deductions from pay for Federal income taxes and social security contributions. In the early 1960's, the scope of the series was expanded to all production and nonsupervisory workers in the private nonfarm economy. The following tabulation shows the trend in this series (in 1977 dollars) over the 1950–80 period:

1950	$131.08
1955	143.46
1960	149.20
1965	166.28
1970	163.65
1975	164.02
1980	151.65

According to the tabulation, real spendable weekly earnings grew steadily and significantly from 1950 to 1965, were stagnant until 1975, and then dipped considerably over the next 5 years. Why this change in trend? Is it possible that, after making considerable progress over the 1950–65 period, the average American worker lost ground in terms of purchasing power over the next 15 years?

As will be shown in this article, the change in the trend of the spendable earnings series in the mid-1960's did not stem from any sudden change in the earnings of individual workers. Rather, it reflects demographic and social changes which began at about that time and which greatly altered the composition of the labor force over the next 15 years.

Paul O. Flaim is chief of the Division of Labor Force Studies, Bureau of Labor Statistics.

Comparisons with other earnings and income series indicate that the majority of American workers have made further progress in terms of purchasing power over the 1965–80 period, even though they may indeed have suffered a dip after 1975 when inflation intensified. These comparisons also show that workers who are likely to have three dependents earn—and take home—much more than is indicated by the "spendable earnings" series.

More representative in early days

Computation of the spendable earnings series began in 1939. Records do not show why the series was started, but it should be recalled that the Social Security Act had gone into effect in 1937, and the need must have soon arisen to measure the effects of the deduction for social security as well as those for Federal income taxes on the take-home pay of typical factory workers.

To measure the impact of Federal income taxes, two series were started, one for workers assumed to have three dependents (a nonworking wife and two children) and one for those assumed to have no dependents. It is important to note, however, that both series were based on the same earnings average—that for all production workers in manufacturing. In subsequent years, the series for workers with three dependents became the more prominent and widely quoted of the two, presumably because of the greater interest in the earnings situation of a family's principal breadwinner.

Of course, in 1939, and even in the years immediately following World War II (although not necessarily during the war), the factory labor force was much more male dominated than is now the case. In fact, this was also true in other industries, as the labor force participation rate for women, especially wives, was extremely low. Thus, the use of the earnings average for all factory production workers to represent the earnings of a factory worker with three dependents was not unsound in the early days of the series.

And the fact that no allowance was made for deductions for State and local taxes in translating the gross earnings of factory workers into "spendable" (or after-tax) earnings also was not a significant omission in those years. It was only after World War II that State and local income taxes began to take a significant and growing portion of a worker's earnings, a trend that continued at least until the recent advent of "Proposition 13" and similar measures designed to limit local tax burdens.

The deductions for social security and Federal income taxes were also extremely low in the early days of the spendable earnings series. In 1939, for example, a factory worker whose gross weekly earnings equaled the average for the industry—$23.86—took home $23.62 if he had three dependents and $23.58 if he had no dependents. In either case, the total deductions barely exceeded 1 percent, a far cry from the situation in 1980, when comparable deductions totaled 14 percent for a worker with three dependents and 22 percent for one with no dependents. And this does not take into account any deductions for State and local taxes.

All things considered, the spendable earnings series, as constructed in its early days, gave a reasonable approximation of the take-home pay of a worker with three dependents. This was particularly true when the series was limited to the manufacturing industry, where men (many with three or more dependents) made up a majority of the work force. But, the situation has changed radically since those early days, and there has been mounting evidence that the series has become less representative of the earnings situation of workers with three dependents.

Growing problems and criticisms

In 1964, the coverage of the spendable earnings series, previously limited to production workers in manufacturing, was expanded to include production and nonsupervisory workers in all private nonfarm establishments. In retrospect, this change made the series much more susceptible to the effects of the pervasive demographic and social changes which, over the next 15 years, greatly altered the makeup of the American work force.

The mid-1960's marked the beginning of a large and sustained increase in labor force participation among women age 20 to 40. It was also during that time that the leading edge of the huge post-World War II baby-boom generation reached age 18 and began to enter the job market. Suddenly, women and teenagers began to account for most of the year-to-year gains in the work force. Many of these new workers took only part-time jobs, but even if working full time (as most of them eventually did), they were generally paid much less per week than men who had been at their jobs for many years. Thus, as women and teenagers increased their proportion of the work force, the average weekly earn-

'Spendable earnings' discontinued

Since the preparation of this article, the Bureau of Labor Statistics has announced the termination of the "spendable earnings series" with the publication, in January 1982, of the data for December 1981. Discontinuation of the series was a specific recommendation of the National Commission on Employment and Unemployment Statistics and was endorsed by the Secretary of Labor in his final report to the Congress on the recommendations of the Commission, dated October 26, 1981.

ings for all production and nonsupervisory workers (which formed the base of the spendable earnings series) no longer grew as fast, even though there was no change in the earnings trends for individual workers.

By the early 1970's, some economists were already arguing that, because of the change in the composition of the labor force and other developments, the spendable earnings series no longer provided a reliable indication of the true trend in earnings. For example, in 1972, George Perry of the Brookings Institution called the series "most misleading" for having signaled a halt in increases in real wages when, in his view, none had occurred.

Perry noted that the failure of the series to show any further growth during the late 1960's was due primarily to (1) a change in the mix of workers; (2) a related decline in hours worked; (3) an increase in deductions for Federal income taxes (the reference being to the surtax of 1968); and (4) the use of what he claimed to be an inappropriate deflator to measure the impact of price changes on earnings.[1]

The Bureau of Labor Statistics reacted to this criticism in various ways. First, it endeavored to explain more specifically what the spendable earnings series did and did not represent. It emphasized that the series, as related to workers with three dependents, applied only to those whose gross earnings were equal to the average for all production and nonsupervisory workers. The Bureau also sought, through several analytical efforts, to place the spendable earnings series in proper perspective by comparing its levels and trends to those of other earnings and income series.[2] And, as the 1970's progressed, it developed alternative measures of earnings from payroll data which would be less affected by changes in the mix of workers—the Hourly Earnings Index and the Employment Cost Index.[3] And finally, it expanded the collection and publication of demographically oriented earnings data through the Current Population Survey (CPS).[4]

Despite these and other efforts to shed more light on earnings and thus reduce the misuse of the spendable earnings series, this statistic has continued to be criticized. In 1979, the National Commission on Employment and Unemployment Statistics reported that the series " . . . is misleading because it is not the earnings figure associated with a married male with three dependents; it is simply an average of all workers' earnings with deductions for Federal income tax liabilities and social security adjusted for inflation. This hybrid figure does not measure what it purports to measure."[5]

And in 1980, Geoffrey Moore, former Commissioner of Labor Statistics, was also critical of the series. Moore said that although the Bureau had endeavored to explain what the series did and did not do, "These statistics have become one of the most misleading series published by the Federal Government. They are subject to a large and increasing downward bias."[6]

Comparisons with other data

Was the criticism of the spendable earnings series sound? If so, to what extent has the series been understating the level and trend in earnings of a worker with three dependents? These questions are addressed in the following comparisons of the data underlying the spendable earnings series with data from other sources.

Current Population Survey (CPS). The earnings data obtained through the CPS, while subject to some limitations, are more suitable for tracking the earnings of specific groups of workers than are the data obtained from establishment surveys. This is because the CPS data are obtained separately for individual workers in the sample and can be linked with the information on marital status, family situation, and other characteristics of these individuals. From 1967 to 1978, data on weekly earnings were obtained through the CPS in May of each year. Beginning in 1979 they have been collected monthly (although from only one-quarter of the sample) and are published quarterly. These data are most useful in determining the accuracy of the spendable earnings series.

The earnings *level* which underlies the establishment-based series on the spendable earnings of workers with three dependents is compared below with CPS data on the earnings of workers who actually have three dependents. For this purpose, the CPS data are limited to a universe of husbands in full-time wage and salary jobs who have a wife and two children under age 18. Using the weekly earnings data for this universe, two separate arithmetic means were constructed, one for production and nonsupervisory workers in the private nonfarm sector (the same universe as that used in computing the establishment-based earnings averages) and one for the entire economy, including supervisory and nonproduction personnel as well as rank-and-file workers. Following are CPS averages, based on data culled from the microtapes for March, May, and October 1979, which are compared with the average (mean) weekly earnings for the same 3 months based on data from the establishment survey:

	Mean gross weekly earnings
Establishment-based average	$219
CPS-based averages:	
Men in full-time production and nonsupervisory jobs in private nonfarm sector who have a wife and two children under age 18	316
Men in all full-time wage and salary jobs who have a wife and two children under age 18	357

From the data, it is clear that average weekly earnings from the establishment survey used to compute the spendable weekly earnings for workers with three dependents has, at least in recent years, fallen far short of the actual earnings of this group of workers. According to the CPS, these workers earn 44 percent more than the establishment-based average if the comparison is restricted to full-time private production and nonsupervisory jobs, and 63 percent more if the CPS universe is expanded to all full-time wage and salary jobs.[7]

The establishment-based series is much lower than the CPS figures because the former is an average for all workers, whether in full- or part-time jobs, and regardless of age, sex, marital status, and family makeup. As noted earlier, among this amorphous group of workers has been a rapidly increasing proportion of women and youth whose weekly earnings are much lower than those of men of prime working age.[8] In contrast, the two CPS averages are limited, almost by definition, to the earnings of men of prime working age.

While the preceding comparisons establish that the actual earnings *levels* for workers with three dependents differ radically from the average earnings of all production and nonsupervisory workers, it is perhaps even more useful to compare the *trends* in earnings of these two widely different universes. Table 1 relates trends in the establishment-based mean gross weekly earnings with trends in median weekly earnings for the most important groups of workers as reported in the CPS. The data are for 1967 (the first year for which data on weekly earnings were collected in the CPS) and 1980.

Both measures exhibited roughly the same percentage increase (or decrease in constant or real dollars) for universes that include full- and part-time workers. This indicates that the measures have been equally sensitive to the changes in the composition of the work force in terms of its full-time and part-time components and in terms of the demographic mix within these components.

Table 1. Weekly earnings in 1967 and 1980, as measured in the establishment survey and in the Current Population Survey (CPS)

Series	May 1967	Annual average 1980	Percent change	
			In current dollars	In constant (real) dollars
Establishment-based				
Mean weekly earnings for all production and nonsupervisory workers on private nonfarm payrolls	$100.55	$235.10	133.8	-5.9
CPS-based				
Median weekly earnings for—				
All wage and salary workers	100.00	232.00	132.0	-6.9
Full-time wage and salary workers	109.00	266.00	144.0	-1.8
Men, 25 and over	131.00	346.00	164.1	6.1
Women, 25 and over	79.00	217.00	174.7	11.3
Men, 16 to 24 years	97.00	214.00	120.6	-11.2
Women, 16 to 24 years	74.00	171.00	131.1	-6.8

Most important, however, is what the CPS data show in terms of the earnings trends for full-time workers, and particularly for those 25 years and over. Whereas the earnings for all wage and salary workers declined by 6.9 percent in real terms over the 1967–80 period, those for full-time workers 25 years and over, who still make up the majority of the work force, show increases of 6.1 percent for men and 11.3 percent for women. Only for younger men and women (16 to 24) do the CPS data indicate a significant decline in real weekly earnings. This decline has been widely attributed to the rapid expansion of this young age group and to the keen competition that its members face upon entering the labor force.[9]

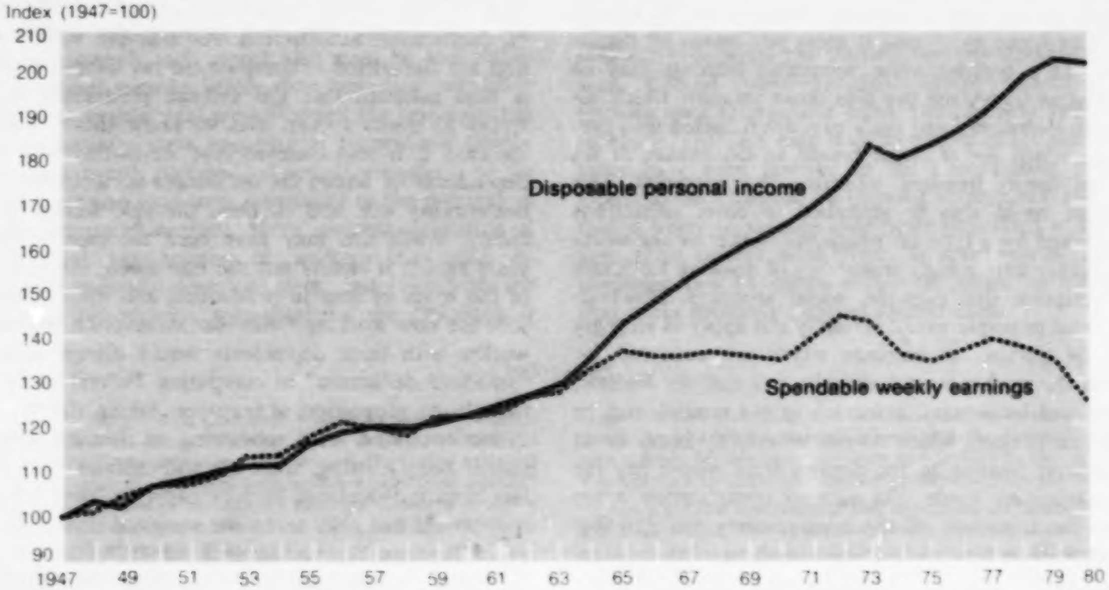
These data from the CPS highlight the importance of looking at the earnings trends of specific demographic groups. One is led to conclude from the data—the spendable earnings series notwithstanding—that the average worker with three dependents did not experience a decline in real earnings over the 1967–80 period. In fact, the data suggest that for these workers, who in most cases are in the 25 and over age group, earnings are most likely to have increased.

Per-capita income. A comparison of the trend in spendable earnings with the trend in "real per-capita disposable personal income"[10] reveals an even more striking divergence than do the above comparisons with CPS data. Chart 1 traces the course of the two series from the late 1940's to the end of the 1970's. Both series followed a similar upward trend until the mid-1960's, then each veered from its previous course, with the disposable income series rising faster than before and the spendable earnings series becoming very stagnant. Both series had accumulated gains of approximately 40 percent from 1947 to 1965. Over the next 15 years, the per-capita income series posted a further gain of 60 percentage points and by 1980 was slightly more than twice its 1947 level. In contrast, the spendable earnings series did not show any sustained growth after 1965, and in 1980, it actually dipped well below its mid-1960's level.

Several reasons for the sharp divergence between these two series were identified and quantified by Paul Ryscavage in 1979.[11] However, before examining those reasons, it is important to note the major definitional differences between the two series—spendable earnings relate to the average after-tax earnings of a specific group of workers; per-capita income relates to the average after-tax income from all sources accruing to all Americans, regardless of age or labor force status.

A paradox of the post-1965 divergence between the two series is that some of the factors which have given upward impetus to one acted as a drag on the other. For example, the increases in labor force participation

Chart 1. Trends in real per capita disposable personal income and real spendable weekly earnings of a worker with three dependents, 1947-80



SOURCE: Real per capita disposable personal income series, U.S. Department of Commerce.

of women and youth since the mid-1960's have added significantly to the aggregate earnings of American workers, and this, coupled with a decline in the rate of growth of the American population—primarily reflecting a drop in the birth rate[12]—has resulted in higher increases in per-capita income. But the impact on average weekly earnings has been just the opposite. Because many of the women and youth who joined the labor force since the mid-1960's work only part time, and because most are paid less than men even if working full time, their inflow into the labor force has kept average weekly earnings from rising as much as it would have had they not entered the labor force.

In other words, greater aggregate earnings has meant higher per-capita income but lower earnings per worker. Following is an illustration of this apparent anomaly:

> In a hypothetical family of four persons, the father is, initially, the only worker, earning $200 a week. This is the total family income, yielding a per-capita income of $50 a week. Suppose now that the father receives a 10-percent increase in pay, raising his earnings to $220 a week, and that the mother joins the work force, earning $80 a week in a part-time job. Total family income now rises to $300 a week and per-capita income jumps to $75. But look what happens to average weekly earnings per worker—it declines from $200 to $150. And if one of the children were to join the work force, per-capita income would increase again, while average earnings per worker would probably drop further.

The greater role of women and youth in the labor force has not been the sole cause for the sharp divergence between the disposable income and the spendable earnings series. The growing role of income transfer payments has also given a boost to the disposable income series. In addition, the disposable income series is translated into dollars of constant purchasing power using the Personal Consumption Expenditures (PCE) deflator. Hence, adjustments of the personal income series for inflation have been somewhat less severe than those which would have occurred had the Consumer Price Index been used as a deflator, as is done in the spendable earnings series.[13] But the main factors in the post-1965 parting of the series are those illustrated by the hypothetical family. In other words, much of the stagnation of the spendable earnings series is attributable to events which have resulted in increases in per-capita income.

Other issues

The statistical evidence and analogies presented in this article confirm that the series on spendable earnings for workers with three dependents has been underestimating both the level and trend in the earnings of such workers. But underestimation is not the only issue surrounding the series; there are also problems of conceptual and operational nature.

In a narrow sense, spendable earnings can be defined as "take-home pay," that is gross pay minus all deductions. In a broader sense, spendable earnings may be defined as take-home pay plus those amounts which, although deducted from one's pay, are funneled into programs which are of direct benefit to the worker or his or her family (medical insurance, for example). This concept could also be stretched to cover deductions earmarked for a fund on which the worker or the worker's family have a high probability of drawing for future consumption (for example, social security). However, the same principle would certainly not apply as strongly to that portion of earnings which are deducted (or which the worker must eventually pay out) for Federal, State, and local taxes, inasmuch as tax monies may be spent on projects which do not necessarily bring direct or indirect benefits to the persons from whose pay the deductions are made. Yet another complication arises from the treatment of the nonpecuniary benefits that many workers now receive (paid vacations, health insurance, dental insurance, and so forth). Clearly, the line between what is "spendable" and what is "not spendable" in terms of one's earnings is not at all obvious and raises many issues. Following is a discussion of some of these issues in light of the procedures which have been used to translate gross earnings into spendable earnings.

Deductions (or liabilities) for State and local taxes have not been considered in the spendable earnings computation. While these taxes were not very significant when the series was launched, they have grown rapidly in the post-World War II period. For example, in 1950, the average taxpayer paid less than 5 cents to State and local governments for each dollar paid to the Federal Government. But by 1980—"Proposition 13" and similar measures notwithstanding—the total personal income taxes paid to States and local municipalities had grown to 18 percent of the amount paid to the Federal Government.[14] And because the recently enacted reductions in Federal tax rates do not appear likely to be accompanied by similar declines in State and local rates, the above ratio is almost certain to grow in the future.

Thus, in addition to the crucial measuring problems, the fact that deductions for State and local taxes are ignored in translating gross earnings into spendable earnings raises a further question concerning the relevance of the spendable earnings series. Unfortunately, estimating such taxes at the national level would be exceedingly difficult, given that some States collect no personal income taxes and that most others have varying rates. Computation would be difficult even if the establishment-based earnings data were accompanied by currently nonexistent information on the family situation of each worker.

Even the computation of Federal income taxes, as used to construct the spendable earnings series, is based on questionable assumptions. For example, weekly earnings are annualized to compute the tax liabilities, and it is thus assumed that the average production worker works 52 weeks a year. Yet, we know that this is not the case. It is also assumed that the worker with three dependents for whom the tax burden is calculated has a nonworking wife and is, thus, the sole worker in the family. While this may have been the case 30 or 40 years ago, it is clearly not the rule today. At least half of the wives of men in production and nonsupervisory jobs are now working.[15] Another assumption is that the worker with three dependents would always take the "standard deduction" in computing Federal taxes. Although the proportion of taxpayers taking the standard deduction (rather than submitting an itemized list) has indeed been growing, there are still millions who do in fact itemize deductions, thereby paying a lower tax than they would had they taken the standard deduction. Internal Revenue Service statistics for 1978 (the last year for which such data are available) show that deductions were itemized in 40 percent of the returns with adjusted gross income ranging from $15,000 to $20,000—a bracket that would include many of the workers with three dependents. And, the higher the earnings brackets, the higher the percentage of returns with itemized deductions.[16]

A final question of conceptual nature is whether it is proper to treat a worker's contributions to social security as a tax. According to the U.S. Treasury Department, a tax is a "compulsory payment for which no special benefit is received in return."[17] Could this be said of social security contributions? Although compulsory for most wage and salary workers, these contributions are made with definite expectations of benefits to be received in the future. These contributions do, of course, reduce the portion of earnings that is immediately spendable, but so do deductions for medical insurance, life insurance, and so on, and these have not been considered as reducing spendable earnings.

Can 'spendable' earnings be measured?

Could an accurate computation of the "spendable" portion of the earnings of workers with three dependents (or any other number of dependents) be made if there were a reliable measure of the gross or pretax earnings of such workers?

Unfortunately, it is doubtful that a more useful and accurate spendable earnings series could be constructed from alternative sources of data, such as those from the CPS. The CPS provides valuable information on the earnings of individual workers and on the makeup of their families, and this information could be used to make more appropriate calculations of the tax burden of these workers. But the CPS data are subject to other limitations: they could not be used to construct a monthly series, as they are collected from only one-fourth of the household sample each month and must be accumulated for several months before their statistical reliability reaches acceptable standards. Perhaps the best role that the CPS earnings data can play is to provide reliable measures—based, perhaps, on annual averages—of the year-to-year and long-term movement in the earnings of specific groups of workers. More accurate estimation of the Federal tax burden of workers may also be attempted annually with CPS data. But even with the additional information accompanying the CPS data, it would be most difficult to accurately estimate State and local taxes—and this would remain a glaring deficiency in any meaningful measurement of spendable earnings.

IN SUMMARY, statistical evidence proves that, because of the gradual change in the mix of workers, the spendable earnings series has become severely downward biased. Crucial questions also emerge regarding the formula used to translate gross earnings into spendable earnings. The fact that deductions for State and local taxes have been ignored in the computation process looms as an omission of growing importance and one that is likely to become even more important in the future, given current fiscal trends. In other words, enough questions can be raised about the series to conclude that it has probably outlived its usefulness. ☐

FOOTNOTES

[1] George L. Perry, "Real Spendable Weekly Earnings," *Brookings Papers on Economic Activity* (Washington, The Brookings Institution, 1972), pp. 779–87. As some economists do now, Perry was suggesting even in 1972 that the "personal consumption expenditures deflator" used in conjunction with the national accounts would have been a more accurate and objective measure of the impact of inflation on earnings than the Consumer Price Index.

[2] Among the *Monthly Labor Review* articles on this subject published in the early 1970's are Paul M. Schwab, "Two measures of purchasing power contrasted," April 1971, pp. 3–14; Jack Alterman, "Compensation per man-hour and take-home pay," June 1971, pp. 25–34; Thomas W. Gavett, "Measures of changes in real wages and earnings," February 1972, pp. 48–53; and Robert L. Stein and Paul M. Ryscavage, "Measuring annual earnings of household heads in production jobs," April 1974, pp. 3–11.

[3] For a technical description of both of these series, see *BLS Measures of Compensation*, Bulletin 1941 (Bureau of Labor Statistics, 1977).

[4] Data on weekly earnings from the CPS were collected in May of each year from 1967 to 1978 (with the exception of 1968). Data on hourly earnings were collected each May from 1973 to 1978. Beginning in 1979, both weekly and hourly earnings data have been collected each month, with the weekly earnings data being published quarterly. For a detailed description of these data, see "Weekly and Hourly Earnings Data from the Current Population Survey," *Special Labor Force Report 195* (Bureau of Labor Statistics, 1977), and *Technical Description of the Quarterly Data on Weekly Earnings from the Current Population Survey*, Report 601 (Bureau of Labor Statistics, 1980).

[5] National Commission on Employment and Unemployment Statistics, *Counting the Labor Force* (U.S. Government Printing Office, 1979), pp. 206–08.

[6] Geoffrey H. Moore, "Inflation and Statistics," in *Contemporary Economic Problems* (American Enterprise Institute, 1980), pp. 167–91.

[7] It should be noted that relative to the total number of workers, the number whose family includes a wife and two children under age 18 is relatively small. In the months for which the CPS data were studied there were, on average, 3.2 million such men with full-time production and nonsupervisory jobs in the private nonfarm sector. The average for the entire economy was 6 million.

[8] The only data on the demographic composition of the work force available from the establishment survey relate to the number of female employees, and even these data are not available separately for the production and nonsupervisory universe. But the decline in average weekly hours for this universe—from 38.8 in 1965 to 35.3 in 1980—is ample evidence of the increase in the number of part-time workers.

[9] For a detailed discussion of this hypothesis, see James P. Smith and Finis Welch, "No Time to be Young: The Economic Prospects for Large Cohorts in the United States," *Population and Economic Review*, March 1981, pp. 71–83; Irving Leveson, *Generational Crowding: Economic, Social and Demographic Effects of Changes in Relative Cohort Size* (N.Y., Hudson Institute, 1980); and Richard B. Freeman, "The Effect of Generational Crowding on the Labor Market for Young Male Workers," *Proceedings of the American Statistical Association, 1979*, pp. 46–49.

[10] Data on "per-capita income" are from the U.S. Department of Commerce.

[11] Paul M. Ryscavage, "The divergent measures of purchasing power," *Monthly Labor Review*, August 1979, pp. 25–30.

[12] The results of the 1980 census indicate that the rate of growth of the population may not have declined quite as much during the 1970's as had been previously thought. According to the Bureau of the Census, the actual population count for April 1980 was about 4.8 million higher than the estimate that had been carried forward from the 1970 census. The exact implications of this for the per-capita income series are not yet known, but the addition of 4.8 million persons to the denominator used in the computation of the series should, other things equal, result in downward revision of about 2 percent in the 1980 levels of the series.

[13] For a distinction between the Consumer Price Index and the Personal Consumption Expenditures deflator, see Jack E. Triplett, "Reconciling the CPI and the PCE Deflator," *Monthly Labor Review*, September 1981, pp. 3–15.

[14] *Survey of Current Business*, April 1981 (U.S. Department of Commerce), p. 17.

[15] An examination of CPS microdata for March 1980 revealed that of the husbands in four-person families who were in production and nonsupervisory jobs during 1980, about 60 percent had a wife who also worked during the year.

[16] See *1978 Statistics of Income: Individual Tax Returns*, Publication 79 (U.S. Department of Treasury, Internal Revenue Service, 1981), p. 53.

[17] Quotation from *The Wall Street Journal*, Sept. 18, 1979.

Large supplies of meats, grains cut recent food price increases

Food prices helped to hold down the overall rate of inflation during the first half of 1981, although a resurgence took place in the third quarter; weather conditions and long-term production decisions are major factors in agricultural markets

WILLIAM THOMAS, JOHN WETMORE,
AND ANDREW CLEM

Food price increases accelerated to double-digit rates in 1978 and 1979, slowed somewhat through early 1980, then rose sharply during the second half of the year because of a severe summer drought. Price hikes were much more moderate through the first half of 1981, primarily reflecting the large output and lower feed costs of meat and poultry producers. However, increases accelerated again during June–September 1981, spurred by an upturn in meat prices.

The Consumer Price Index (CPI) for food rose at a 4.5-percent seasonally adjusted annual rate during the first 6 months of 1980, then surged at a 16.3-percent pace for the rest of the year. In the first half of 1981, however, food prices at retail edged up at a 1.0-percent annual rate. Price increases accelerated from June to September, as the CPI for foods recorded a 10.9-percent yearly rate of advance. (See table 1.) At the producer level, food prices declined somewhat in the first half of 1980, then rebounded at a 16.9-percent annual rate during the second half. From December 1980 to September 1981, the Producer Price Index for finished consumer foods slowed to a 3.0-percent yearly pace.

Food prices constitute 17.3 percent of the CPI for all items and 23.1 percent of the Producer Price Index for finished goods. Historically, food prices have been more volatile than other prices, alternately rising rapidly and contributing to inflation, then stabilizing or falling and thus moderating inflation. Food prices rose faster than non-food prices at both the retail and producer levels during 1978. Since the second quarter of 1979, they have risen more slowly than other prices in every quarter except for the third quarter of 1980 and, for the PPI only, the third quarter of 1981, when non-food producer prices showed their smallest increase since fourth-quarter 1972.

The following discussion focuses on some of the most significant price movements for foods and food-related commodities during the last 2 years. In some cases, we will refer to earlier periods to facilitate an understanding of the fundamental market forces underlying food price changes. Because many agricultural products normally follow multi-year production and marketing cycles, a longer term perspective enhances trend analysis. Seasonally adjusted data are used as a rule; however, unadjusted figures are cited where there is no stable seasonal pattern of price movement.

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Beef prices react to competition, weather

Beef and veal prices rose more than 20 percent in both 1978 and 1979. After declining at a seasonally adjusted 10.1-percent annual pace in the first half of 1980, the CPI for beef and veal climbed at a 22.8-percent rate from June to December. The index then fell at an annualized 14 percent through the first half of 1981. By the end of the third quarter, however, retail prices for beef and veal had turned up significantly, reflecting a surge in producer prices.

Processors' prices for beef and veal declined in 4 of the 5 quarters from December 1979 through March 1981; the exception was the third quarter of 1980, when searing summer heat damaged pastures and slowed cattle weight gains. Generally falling prices in 1980 and early 1981 reflected the large-scale liquidation of stock by cattle owners in the face of climbing interest rates and intense price competition from pork and poultry producers.

The U.S. Department of Agriculture estimates that the typical cattle production cycle lasts about 10 years —6 years of supply increases and 4 years of declines. Because it takes 28 months from the time a choice beef animal is bred to the time it is ready for sale, cattle producers cannot adjust to changing price and profit conditions as rapidly as poultry and pork producers. The last full cattle cycle began in the late 1960's, when cattle producers were encouraged by rising beef prices to boost production. This expansion resulted in a record U.S. stock of 132 million cattle in 1975. The subsequent liquidation of large cattle herds greatly affected the 1980–81 supply.

Table 1. Changes in retail and producer prices for selected foods, September 1979–81

Commodity and index	Relative importance, Dec. 1980	Percent change		Compound annual rate, seasonally adjusted except as noted, for 3 months ended—				
		Sept. 1979 to Sept. 1980	Sept. 1980 to Sept. 1981	1980		1981		
				Sept.	Dec.	Mar.	June	Sept.
Consumer foods:[1]								
CPI	100.0	10.1	6.5	19.7	13.1	2.1	-0.1	10.9
PPI	100.0	8.5	3.3	31.0	4.3	1.6	.5	7.0
Beef and veal:								
CPI	9.8	9.2	-.1	48.6	1.4	-19.4	-8.2	32.6
PPI	12.1	3.6	-4.6	35.0	-11.6	-30.6	10.7	21.5
Pork:[2]								
CPI	4.7	7.8	6.9	87.2	12.0	-12.5	-.7	34.2
PPI	6.5	12.6	6.6	171.7	-2.7	-21.9	23.6	37.6
Poultry:								
CPI	2.3	17.4	-2.7	89.0	10.3	-18.6	-11.7	13.0
PPI	3.3	31.9	-16.5	262.0	-15.3	-22.7	-9.8	-17.7
Sugar and sweets:[3]								
CPI	2.9	28.0	.1	33.8	39.5	-11.1	-25.0	8.0
PPI	4.8	57.2	-27.7	21.2	-1.9	-37.6	-28.6	-37.5
Roasted coffee:[2]								
CPI	.8	0	-19.0	-5.7	-30.0	-27.7	-6.8	-8.8
PPI	3.6	-6.2	-11.6	-20.2	-21.0	-1.8	-22.7	1.9

[1] Includes items not listed. The CPI includes prices of food away from home, which accounts for about 31 percent of the food index. The PPI for finished consumer foods does not reflect restaurant prices.

[2] Not seasonally adjusted in the CPI.

[3] "Sugar and confectionery" in the PPI. Not seasonally adjusted in the PPI.

NOTE: Monthly data for the PPI have been revised through May 1981 to reflect the availability of late reports and corrections by respondents. For this reason, some of the figures shown above and elsewhere in this report may differ from those previously published.

In 1980, beef production was 1 percent above year-earlier levels, the first over-the-year advance since 1976. (See table 2.) This resulted from a 0.4-percent increase in cattle slaughter and, more importantly, a record-setting average dressed beef carcass weight[1] of 635 pounds. Dressed slaughter weights were relatively large in the first half of 1980, averaging nearly 643 pounds. Because the market for fed cattle was slow, many of these animals were over-finished when they were finally sold. At the same time, favorable weather conditions contributed to relatively heavy weights for nonfed slaughter cattle. The average dressed weight in the second half of 1980 fell to 628 pounds, in large part because of the drought, but had recovered to nearly 645 pounds by September 1981.

The pattern of price change for live cattle was about the same as that cited earlier for beef and veal at the processor level. Prices fell during most of 1980, except during the summer when the heat drove up grain and feed prices. Record interest rates further increased production costs late in the year. However, a glut of pork and poultry prevented beef prices from rising enough to cover these cost increases. Feedlot owners also operated at a loss during the year, despite falling prices for the cattle they purchased for fattening.

During the first half of 1981, an unusually high average dressed weight of nearly 644 pounds held beef production above the corresponding 1980 level. And, while the slaughter of fed animals declined slightly from 12.1 million head in 1980 to 11.9 million in 1981, there was a sharp rise, from 1 million to 1.6 million, in nonfed slaughter as a result of inadequate grazing capacity. Large supplies of other red meats and poultry, coupled with a sluggish economy, also contributed to lower prices for cattle during the first quarter. However, during the second quarter of 1981, the prices of slaughter animals turned up as supplies of both hogs and cattle declined, and demand by beef packers improved.

Pork prices follow beef trends

Like beef and veal prices, retail pork prices fell in the first half of 1980, climbed rapidly in the second half, and declined through May 1981 before turning up in the third quarter. They decreased sharply during periods of abundant supplies even though consumers were substituting pork for more costly beef. Prices surged in mid-1980, when intense summer heat resulted in slow weight gains and a large number of hog deaths.

The pork market in 1980–81 was very volatile, generally characterized by large supplies and increased production costs. During the 1970's, most years had been profitable for pork producers; the pork production cycle (9 to 10 months) is considerably shorter than the cattle cycle, and permits more rapid adjustments to changing market conditions. But while the domestic inventory of hogs and pigs shrank for the first time in 4 years, the 64.5 million head count as of December 1980 was still relatively large. Thereafter, pork production remained high despite operating losses. At the same time, burdensome interest rates discouraged storage of meat, adding to already ample supplies.

The changing character of the industry in recent years has greatly influenced prices, as well as breeding and marketing decisions. There appear to be divergent interests between large producers, with temperature-controlled piggeries and other sophisticated equipment, and smaller farmers, who face more severe credit and cost problems. The relatively high fixed capital costs incurred by larger producers constitute an incentive for them to maintain output even in the face of higher operating costs. During 1977, producers with 500 or more hogs accounted for 35.3 percent of total production; by 1980, this share had increased to 42.3 percent. Future retail pork prices will also be greatly influenced by those packers who are marketing boxes of vacuum-packed chunks; this practice, pioneered by beef packers, reduces the need for butchers in retail outlets.

Poultry producers have flexibility

The poultry component of the CPI declined at a seasonally adjusted annual rate of 8.5 percent in the first half of 1980, then turned up at a 44.4-percent yearly pace in the second half. The 1980 summer heat affected chickens much more than other livestock, and millions of chickens died. During he first half of 1981, retail poultry prices decreased at a 15.2-percent annual rate, but rebounded at an annualized 13 percent over the quarter ended September 1981.

The poultry production period is even shorter than the pork cycle. Because the time from fertilization to market-ready chicken is only about 11 weeks, poultry farmers can respond quickly to changing market conditions. However, in anticipation of a cutback in pork supplies, poultry producers have expanded operations in recent years, even in the face of unfavorable prices. For example, during the spring of 1981, producers estimated that they were losing as much as 12 cents per chicken sold, largely because of earlier increases in the costs of grains and energy. Nonetheless, broiler production in the first half of 1981 was 4 percent above that for the same period in 1980.

Table 2. Annual commercial production of beef, pork, and chicken broilers, 1971–81
[In millions of pounds]

Year	Beef	Pork	Broilers
1971	21,697	14,606	7,724
1972	22,218	13,460	8,147
1973	21,088	12,578	8,025
1974	22,844	13,583	8,126
1975	23,673	11,314	8,127
1976	25,667	12,219	9,067
1977	24,986	13,051	9,418
1978	24,010	13,209	10,129
1979	21,261	15,270	11,219
1980	21,470	16,431	11,334
1981[1]	22,006	15,452	11,997

[1] Data are preliminary.

SOURCE: U.S. Department of Agriculture.

Grains, oilseeds, and animal feeds

Prices for grains and feeds turned down in 1981, following 3 years of general increase. Even soybean prices, which had displayed no clear trend in recent years, began to fall sharply in late 1980 and continued to edge down in most subsequent months. (See table 3.) This widespread easing of crop prices reflected both short-term influences, such as good weather and weak export demand, as well as long-term cyclical factors.

The 1970's witnessed a tremendous expansion of world trade in grains and oilseeds. The share of U.S. farm cash receipts accounted for by exports grew from an average of 13.9 percent in the 1960's to 22.1 percent during the 1970's. By 1980, this proportion was approaching 30 percent. As a result, farm prices have become increasingly sensitive to conditions abroad.

Export demand boosts prices. During the summer of 1972, the Soviet Union purchased massive amounts of American grain to alleviate a drought-related shortage. Wheat prices climbed rapidly as a result, and by January 1974 were 4 times their June 1972 level. The reaction in the corn market was more delayed; prices began to rise in late 1972, then tripled over the next 2 years. The declining exchange value of the U.S. dollar during this time further stimulated foreign demand for grains and soybeans, and consequent price increases.

The explosion of grain prices during 1972–74 pushed up prices for bread, animal feeds, livestock, and meats; this ultimately translated into a substantial increase in the overall rate of inflation. As a result, U.S. farm policy, which historically had been directed toward limiting acreage planted, disposing of chronic surpluses, and supporting prices, was modified to encourage farmers to maximize crop production. This move and the incentive of higher crop prices did lead to bigger domestic harvests. Soon, however, harvests abroad also improved, grain markets were swamped with excess supplies, and wheat and corn prices tumbled from late 1974 through the summer of 1977. During the latter year, the government reinstated price supports, and initiated a new program to help farmers purchase their own grain storage

Table 3. Changes in producer prices for grains, feeds, and livestock, 1979–81

Grouping	Percent change		Compound annual rate, seasonally adjusted except as noted, for 3 months ended—				
	Sept. 1979 to Sept. 1980	Sept. 1980 to Sept. 1981	1980		1981		
			Sept.	Dec.	Mar.	June	Sept.
Grains:							
Wheat	3.5	-5.1	36.0	-0.6	-4.3	-1.1	-13.9
Corn[1]	26.4	-20.2	194.8	-3.7	-.3	0	-57.9
Soybeans	17.4	-19.0	374.6	-25.2	-35.7	-9.1	-1.6
Feeds:							
Grain by-product feeds	7.1	-13.4	106.9	-14.1	-40.0	48.8	-26.5
Vegetable cake and meal feeds	25.0	-13.8	436.1	-19.4	-39.7	14.0	-.4
Formula feeds	7.0	-8.3	88.4	-4.6	-24.6	5.0	-6.3
Miscellaneous feeds except pet food[1]	(²)	-12.7	351.2	-13.2	-36.9	4.4	1.6
Livestock:							
Cattle	.7	-5.5	44.0	-14.2	-33.4	36.4	2.2
Hogs	20.6	6.0	299.8	-7.2	-50.2	150.7	8.7
Live poultry	38.9	-18.4	303.6	1.4	-32.7	-8.2	-29.0

[1] Not seasonally adjusted.

[2] Data not available.

facilities. It was hoped that by enabling farmers to withhold their crops from the market in times of low prices, the new program would help to stabilize prices and farm earnings in the future.

The recent years. Wheat and corn prices reversed their slide and began to rise substantially in late 1977, as poor overseas harvests and the declining value of the dollar again boosted sales and commodity prices. In response, farmers devoted more acreage to wheat and corn during 1978–81. (See table 4.)

For the most part, soybean prices moved independently of grain prices during the second half of the 1970's. Because U.S. soybean exports faced increased competition from Brazilian products, the large upward trend in corn and wheat prices during 1978–80 was not followed by soybeans.

Prices for grains and oilseeds turned down somewhat in late 1979 and early 1980 because of good harvests. However, the drought in mid-1980 caused severe damage to corn and soybean crops; total production and per-acre yields for both were nearly one-fifth below year-earlier levels. During third-quarter 1980, prices for corn advanced 31 percent and for soybeans, 47.6 percent. Because most of the winter wheat crop (which accounts for about 70 percent of total annual wheat production) had already been harvested by summer, and the remaining spring wheat fields were not affected as badly by the drought, wheat prices rose considerably less than those for other grains and oilseeds.

The sharp increase in animal feed prices during the third quarter of 1980 reflected both reduced harvests of the commodities from which they are manufactured and the damage caused to pasture lands by the intense summer heat. However, feed prices turned down in late 1980 and early 1981, in part because the relatively mild winter in livestock feeding areas dampened demand.

From late 1980 through the spring of 1981, prices for wheat and corn generally receded. A reduction in export demand resulted from the appreciation of the U.S. dollar in currency markets. At the same time, exceptionally high interest rates, which discouraged speculation in grain markets and induced firms to minimize their holdings of grain, lessened domestic demand. Soybean prices likewise decreased over this period, for similar reasons. However, the rate of descent was much steeper than that for grains, because bumper harvests in Brazil glutted the world market. A further negative impact on grain, soybean, and feed prices was the abovementioned weakened demand for animal feeds.

Weather was relatively moderate during the summer of 1981, and rain was sufficient to permit steady growth. Prices for grains, oilseeds, and feeds plummeted as harvest estimates were raised throughout the summer. The latest statistics available indicate record production of wheat and corn, reflecting both increased area planted and higher yields per acre. Corn prices fell very sharply during the third quarter; wheat prices also declined, although not as rapidly. The soybean harvest was greater than in 1980, although smaller than in 1979, and prices edged down only slightly from June to September. Nevertheless, by the close of third-quarter 1981, prices for wheat, corn, and soybeans were almost as low as those prevailing before the 1980 summer drought.

Sugar prices reflect changing consumption patterns

The United States imports over a third of its sugar. A complex series of price supports and loan programs, combined with tariffs and duties, normally keeps domestic sugar prices above world prices. But because these supports constitute a floor rather than a ceiling, any large increases in world prices are quickly reflected in domestic markets.

Table 4. Selected production statistics for wheat, corn, and soybeans, 1976–81

Year	Area planted (million acres)			Area harvested (million acres)			Yield (bushels per acre)			Total production (million bushels)		
	Wheat	Corn	Soybeans	Wheat	Corn	Soybeans	Wheat	Corn	Soybeans	Wheat	Corn	Soybeans
1976	80.4	84.6	50.3	70.9	71.5	49.4	30.3	88.0	26.1	2,149	6,289	1,289
1977	75.4	84.3	59.0	66.7	71.6	57.8	30.7	90.8	30.6	2,046	6,505	1,767
1978	66.0	81.7	64.7	56.5	71.9	63.7	31.4	101.0	29.4	1,776	7,268	1,869
1979	71.4	81.4	71.6	62.5	72.4	70.6	34.2	109.7	32.1	2,134	7,939	2,268
1980	80.4	84.1	70.1	70.9	73.1	67.9	33.4	91.0	26.8	2,370	6,648	1,817
1981[1]	88.8	84.3	68.1	80.7	74.1	66.9	34.1	109.2	31.0	2,750	8,097	2,076

[1] Data are preliminary.

Source: U.S. Department of Agriculture, *Agricultural Outlook*, October 1981.

Twice in the last decade world sugar prices have soared, only to plummet almost as rapidly. The principal cause of the 1974 run-up in prices was a failure of production to keep pace with demand; in 1980, the major factor was a sharp drop in production. Because sugar is a key ingredient in many processed foods, it has a broader impact on food prices than its direct consumption would indicate.

World sugar consumption grew every year for two decades prior to 1974 because of general population growth, and rising living standards in many Third World countries. However, sugar production increased more erratically. Despite record output in 1973 and 1974,[2] world stocks were lower at the end of the crop year in 1974 than in 1970. More significantly, stocks as a percentage of consumption fell sharply from 29.3 percent to 21.9 percent over the 1970–74 period. (See table 5.)

The shrinkage of stocks relative to consumption led to a doubling of world raw sugar prices from June 1971 to June 1973 to their highest level since 1964. Prices exploded in 1974, quintupling by year's end. Domestic prices rose more slowly at first as duties were lowered, but then climbed with world prices. However, by late 1974 it was clear that 1975 sugar production would not be as low as originally feared and total world consumption had declined for the first time in decades. As a result, prices fell sharply during the first half of 1975, although they remained above the 1973 level.

World production set new records each year from 1976 to 1978, and stocks became more closely aligned with consumption. Thus, a slight decline in production in 1979 did not seriously affect prices. In 1980, however, there was a sharp drop in output, reflecting poor harvests in several countries (most notably Cuba and the Soviet Union), and prices for raw sugar soared. World prices tripled from their 1979 level; domestic prices only doubled, however, owing to decreases in the level of import fees. In 1981, the world crop was slightly larger, but stocks fell again, this time to their lowest level since 1976 (the lowest since 1974 when expressed as a fraction of consumption).

Even so, a number of factors caused prices to start falling by the end of 1980. World consumption declined in response to higher prices and increased use of sugar substitutes. At the same time, high interest rates and predictions of sizable output in 1982 discouraged speculation and the holding of large inventories, and many commercial users allowed their own buffer stocks to run down. Prices fell throughout the first three quarters of 1981, finally reaching early-1980 levels. Domestic prices followed the world price downward until import fees were resumed in mid-September.

As previously indicated, a peculiarity of the sugar market is the fact that close substitutes are available, the most important of which are corn syrups. Because the capacity to produce substitutes is fixed in the short run, their prices tend to rise and fall in tandem with that of sugar. However, the increased use of other sweeteners is apparently contributing to a long-term decline in per capita sugar consumption in some industrialized nations, such as the United States, Canada, and Japan, although consumption is still increasing in the Third World.

World markets determine cocoa prices

Because the United States imports all of its cocoa beans, the domestic price is determined by the world price. A small number of tropical countries are responsible for most of the world supply. The International Cocoa Agreement, designed to control supplies and prices, does not include either the Ivory Coast—currently the world's largest exporter—or the United States—the world's largest importer. Consequently, world prices depend primarily on market conditions.

World production of cocoa beans fluctuated widely over the last 10 years. Harvests were especially small in 1973 and 1977,[3] boosting prices to new highs from which they never fully retreated. Production increased sharply from 1978 through 1981, with new records set in each of the last 2 years. As a result, prices declined sporadically from their late 1977 peak. Over the same period, consumption lagged behind production, and surpluses were recorded in every year since 1978; in particular, U.S. per capita consumption fell by almost a fourth from 1972 through 1977, and remained near the

1977 level through 1980. Over the years, periods of high cocoa prices have encouraged a gradual switch to chocolate substitutes. Consumption was further discouraged during 1980 by the rapid rise in the price of sugar, an important ingredient in most products containing cocoa.

Cocoa bean prices fell during most of 1980. Stocks reached record levels in 1981, and by June prices had fallen to their lowest level since 1976. The 1982 harvest, forecast to be large, may lead to the fifth consecutive year of surpluses, despite recent increases in per capita consumption in response to lower prices for both sugar and cocoa. Nevertheless, speculation regarding renewed efforts by the International Cocoa Agreement signatories to support prices caused an upturn in prices in the third quarter of 1981.

Coffee price trends

The United States imports virtually all of its coffee, 75 percent of which comes from Latin America. Therefore, the domestic price at the producer level follows the world price. Although there is an International Coffee Agreement, it is generally regarded as ineffective in moderating price swings as the supply situation changes. Consumers do not often see the effects of world price developments immediately because of long time lags as green coffee beans move from stockpiles to roasters. And the frequent use of coffee as a loss leader in retail stores also helps to divorce consumer price trends from producer price movements.

World coffee prices showed only moderate fluctuations during the early 1970's. However, in mid-1975, a number of developments adversely affected the world coffee crop. Most notable were a severe frost in coffee-producing regions of Brazil, which reduced that nation's 1976 output by 60 percent,[4] and civil war in Angola, which resulted in a long-term 75-percent drop in production. With supplies curtailed, coffee prices registered sharp increases until 1977, then declined until another, much less severe Brazilian frost in 1979 caused a brief surge. Prices fell to the 1979 pre-frost level during 1980 and the first half of 1981, as supplies again became plentiful. Another frost in Brazil during July 1981, although potentially severe, will not affect production and prices until the 1982 harvest.

Table 5. Selected global sugar statistics, annual world production, consumption, and stocks of sugar, selected years, 1965–82

[Million metric tons, raw value]

Crop year[1]	Production	Consumption	Ending stocks	Ending stocks as a percent of consumption
1965	64.5	58.3	16.6	28.5
1970	71.2	71.1	20.8	29.3
1971	70.7	73.5	19.0	25.9
1972	71.4	74.9	17.0	22.7
1973	75.1	77.7	17.3	22.3
1974	80.0	80.0	17.5	21.9
1975	78.5	77.0	19.1	24.8
1976	81.7	79.2	21.2	26.8
1977	86.3	81.9	25.0	30.5
1978	92.5	86.2	29.8	34.6
1979	91.2	89.6	30.6	34.2
1980	84.2	89.5	23.6	26.4
1981	86.8	88.4	21.3	24.1
1982[2]	95.8	92.0	25.1	27.3

[1] Crop year September through August, but includes the sugar harvests of several Southern Hemisphere countries which begin before September.

[2] Data are preliminary.

Source: U.S. Department of Agriculture.

Domestic per capita coffee consumption declined by nearly 40 percent from 1962 through 1981, while soft drinks, tea, and juices increased in popularity. Coffee consumption dropped sharply in 1977 because of high prices, recovered for 2 years, then resumed its downward trend in 1980. By 1981, it had reached its lowest level since records were started in 1950. ☐

FOOTNOTES

[1] A glossary of some of the technical terms used in this section:

—*Dressed beef carcass weight* represents the weight of slaughtered animals after removal of hides, hoofs, and internal organs.

—*Fed* or *feeder cattle* are animals given a diet of grains and formula feeds while in feedlots to enhance meat quality prior to marketing.

—*Nonfed cattle,* commonly called grass-fed cattle, are those that graze in crop fields already harvested or in pastures.

—*Over-finished cattle* are fed cattle with a high fat-to-meat ratio.

[2] Crop years ending August 31.

[3] Crop years ending September 30.

[4] Crop year beginning July 1.

Scheduled wage increases and cost-of-living provisions in 1982

Deferred increases will average 6.3 percent, more than in any year since 1971, and are payable to 4.3 million workers; approximately 3.4 million may receive cost-of-living adjustments

DOUGLAS R. LEROY

In 1982, about 4.3 million workers in private industry are scheduled to receive wage increases under major collective bargaining agreements[1] that were negotiated in earlier years. These "deferred" increases will average 6.3 percent—the highest average recorded since 1971 (7.7 percent). About 3.4 million workers covered by agreements that will be in effect during part or all of 1982 may anticipate wage changes from cost-of-living adjustment clauses. Some 2.3 million of these workers will also receive deferred increases. About 3.7 million workers will be covered by contracts expiring or with provisions for reopening in 1982, making this a relatively heavy bargaining year.[2]

This article focuses on deferred wage increases and cost-of-living adjustments (COLA) provided by the major agreements that will remain in effect through 1982. The analysis of deferred increases does not include contracts covering 1.2 million workers which expired before 1982, but had not been renegotiated or for which data were not available at this writing.[3]

Deferred wage increases

Deferred wage increases are those that are implemented in one calendar year but had been negotiated in
an earlier year, usually as part of a multiyear ag
ment. They include general wage adjustments cove
all workers, and changes which affect only a portio
the bargaining unit such as those that alter skill di
entials or premiums.

The comparatively large mean deferred wage incr
in 1982 results from increases negotiated during 1
which averaged 8.5 percent and covered 1.3 mi
workers. Deferred increases from contracts negoti
during 1980, which covered 2.9 million workers,
aged 5.1 percent.

The proportion of workers with cost-of-living p
sions in their contracts influences the size of averag
ferred increases—contracts with COLA clauses gen
provide smaller deferred wage increases than
without. Cost-of-living provisions covered only 21
cent of the workers under settlements reached in
compared with 61 percent of those under 1980 s
ments. Workers covered by 1981 agreements with
will receive average deferred increases of 5.9 perc
1982, compared with 9.3 percent for those withou
clauses.

The size of deferred increases varies significan
industry and prevalence of COLA. For example, th
est increases, in both cents-per-hour and perc
terms, will occur in the construction industry,
COLA clauses are rare. About 1 million constr

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workers are scheduled to receive average deferred wage increases of 10.6 percent or $1.52 per hour in 1982.[4] The 159,000 construction workers covered by contracts with COLA clauses will receive deferred increases averaging 7.5 percent, compared with 11.2 percent for the 869,000 workers under contracts without cost-of-living provisions.

The metalworking industries, where COLA clauses cover 90 percent of the workers, have deferred increases averaging only 3.1 percent, or 32.1 cents per hour, for 1 million workers in 1982. (See tables 1 and 2.) For the 2.7 million workers with COLA coverage, the average deferred increase is 2.7 percent, compared with 6.6 percent for the remaining 92,000 workers.

Table 3 shows distributions of workers receiving deferred payments by month during 1982. In August, the month with the greatest concentration, 1.2 million workers, 80 percent of whom are in the steel manufacturing and telephone communications industries, are scheduled for increases.

Table 1. Workers receiving deferred wage increases in 1982, by major industry group and size of increase

[Workers in thousands]

Average hourly increases	Number of contracts	All private nonagricultural industries	Manufacturing						Nonmanufacturing				
			Total[1]	Selected industries					Total[2]	Selected industries			
				Food and kindred products	Lumber and wood products	Paper and allied products	Stone, clay, glass	Metal-working		Contract construction	Transportation, communications, gas, and electric utilities	Warehousing, wholesale and retail trade	Services
Total	996	4,295	1,481	87	60	56	73	1,002	2,814	1,027	974	444	147
CENTS PER HOUR													
Under 15 cents	41	92	49	10	—	—	—	38	43	2	15	2	—
15 and under 20	39	125	106	—	—	—	4	96	20	4	14	1	—
20 and under 25	44	135	78	—	—	2	—	75	56	—	42	4	10
25 and under 30	124	117	485	3	—	2	—	449	687	—	646	32	—
30 and under 35	67	299	238	4	—	8	—	202	61	—	33	23	2
35 and under 40	35	106	56	6	—	1	—	27	50	10	15	13	12
40 and under 45	30	88	38	—	—	—	—	18	50	6	—	10	31
45 and under 50	20	36	16	1	—	—	—	11	20	—	8	9	3
50 and under 60	115	375	153	20	—	1	62	38	222	28	42	110	39
60 and under 70	59	222	103	15	37	12	1	21	119	5	2	61	31
70 and under 80	62	248	73	13	21	13	3	14	175	47	4	120	4
80 and under 90	38	103	32	10	1	7	2	4	71	33	14	24	—
90 and under 100	33	257	29	1	—	7	—	18	228	29	32	8	—
100 and under 110	50	152	18	3	—	—	—	1	135	94	13	14	3
110 and under 120	28	84	—	—	—	—	—	1	83	28	44	8	3
120 and over	211	801	6	—	1	—	—	—	795	741	41	3	10
Mean increase	—	74.0	40.0	57.4	72.0	67.5	55.0	32.1	91.8	151.7	48.5	63.1	66.2
With cost-of-living clauses	—	40.9	32.9	43.6	—	29.9	54.0	29.8	48.1	116.6	33.3	55.6	97.8
Without cost-of-living clauses	—	111.8	59.8	64.3	72.0	69.0	62.9	55.5	124.4	158.1	124.8	67.4	64.1
Median increase	—	51.1	30.3	60.0	70.0	70.6	55.0	28.7	75.0	150.0	28.5	62.5	50.5
PERCENT[3]													
Under 2 percent	64	175	116	5	—	—	4	107	58	6	22	7	—
2 and under 3	171	1,441	688	7	—	2	—	657	753	17	719	9	—
3 and under 4	77	235	159	4	—	—	—	102	76	8	43	18	2
4 and under 5	44	98	43	4	—	10	4	18	55	3	3	41	8
5 and under 6	59	207	51	8	—	—	9	21	155	64	15	64	12
6 and under 7	73	160	64	12	7	—	3	16	96	48	2	42	4
7 and under 8	114	495	194	19	51	20	46	39	301	61	38	152	48
8 and under 9	127	565	124	13	1	20	4	32	441	161	33	36	52
9 and under 10	85	258	31	14	—	2	—	5	238	93	74	40	10
10 and under 11	39	124	7	—	1	—	—	3	117	87	10	19	1
11 and under 12	44	139	5	2	—	—	—	2	135	119	2	8	6
12 and over	99	389	—	—	—	—	—	—	389	361	14	8	5
Mean increase	—	6.3	4.2	6.8	7.1	7.3	6.7	3.1	7.4	10.6	4.0	7.1	8.0
With cost-of-living clauses	—	3.7	3.2	4.9	—	2.7	6.5	2.7	4.2	7.5	3.1	6.1	7.6
Without cost-of-living clauses	—	9.2	7.0	7.7	7.1	7.5	7.8	6.6	9.7	11.2	8.2	10.6	8.1
Median increase	—	6.0	2.9	7.4	7.0	8.0	7.2	2.7	7.7	10.9	2.7	7.5	8.2

[1] Includes workers in the following industry groups for which separate data are not shown: tobacco (22,000); textiles (12,500); apparel (18,000); furniture (13,000); printing (37,000); petroleum refining (2,000); chemicals (32,000); rubber (4,000); leather (33,000); instruments (25,000); and miscellaneous manufacturing (6,000).

[2] Includes 198,000 workers in mining industry for which separate data are not shown because of concerns on the confidentiality of earnings data, and 23,000 workers in the financial, insurance and real estate industries.

[3] Percent of straight-time average hourly earnings.

NOTE: Workers are distributed according to the average adjustment for all workers in each bargaining unit considered. Deferred wage increases include guaranteed minimum adjustments under cost-of-living clauses. Only bargaining units in the private, nonagricultural economy covering 1,000 workers or more are considered in this table. Because of rounding, sums of individual items may not equal totals. Dashes indicate there are no workers having wage increases that fall within that stated range.

In general, multiple year contracts tend to provide higher wage changes in the initial years than in subsequent years. For instance, 3-year agreements negotiated in 1981 provided average adjustments of 11.3 percent during the first year, 8.3 percent in the second year, and 6.8 percent in the third.

Cost-of-living adjustments

Fifty-six percent of workers covered by major agreements have cost-of-living protection. Two-thirds of the workers with COLA clauses will have at least one review during 1982.[5] (See table 4.) COLA provisions are designed to help workers recover purchasing power lost through price increases. The number of workers receiving COLA increases and the proportion of purchasing power actually recovered under individual bargaining agreements depend on the specific formula used to relate wage and price increases, the timing of COLA reviews, and possible "caps" limiting the amount of COLA payments. Through the first 9 months of 1981, cost-of-living adjustments returned about three-quarters of th rise in the Consumer Price Index (CPI).

The number of workers affected by COLA clauses ha been decreasing since 1977, largely because of employment declines in industries where such clauses are common. The slightly larger than proportionate drop i COLA coverage in 1978, resulted from the elimination c the COLA provision from the bituminous coal contrac

Table 2. Prevalence of cost-of-living adjustment (COLA) clauses in major collective bargaining agreements, October 1981

[Workers in thousands]

2-digit standard industry classification (SIC)	Industry	All contracts		Contracts with COLA clauses		Percent of workers covered by COLA clauses
		Workers covered	Number of contracts	Workers covered	Number of contracts	
	Total	9,027	1,912	5,080	735	56.3
10	Metal mining	39	14	35	11	89.5
11	Anthracite mining	2	1	2	1	100.0
12	Bituminous coal and lignite mining	160	1	....	...	....
15	Building construction general contractors	668	168	49	9	7.4
16	Construction other than building construction	451	115	102	14	22.5
17	Construction special trade contractors	421	193	36	20	8.6
20	Food and kindred products	305	99	94	33	31.0
21	Tobacco manufacturing	23	8	20	6	85.9
22	Textile mill products	50	20	3	2	6.4
23	Apparel and other finished products	475	52	148	6	31.1
24	Lumber and wood products, except furniture	66	15	2	1	2.4
25	Furniture and fixtures	28	17	8	6	28.9
26	Paper and allied products	88	62	2	1	2.3
27	Printing, publishing and allied industries	64	30	32	12	50.6
28	Chemicals and allied products	79	39	30	13	38.7
29	Petroleum refining and related industries	36	18	....	...	....
30	Rubber and miscellaneous plastics	83	15	76	11	91.5
31	Leather and leather products	35	14	....	...	....
32	Stone, clay, glass, and concrete products	87	36	70	26	80.2
33	Primary metals industries	483	113	459	99	95.0
34	Fabricated metal products	106	58	83	42	78.1
35	Machinery, except electrical	269	84	249	72	92.5
36	Electrical machinery equipment and supplies	438	99	413	81	94.3
37	Transportation equipment	1,149	103	1,004	80	87.4
38	Instruments and related products	46	14	25	5	53.8
39	Miscellaneous manufacturing industries	22	12	3	2	14.8
40	Railroad transportation	399	18	399	18	100.0
41	Local and urban transit	17	3	16	2	93.5
42	Motor freight transportation	474	19	468	17	98.8
44	Water transportation	90	19	34	7	38.2
45	Transportation by air	181	42	126	22	69.9
48	Communications	742	45	707	32	95.2
49	Electric, gas, and sanitary services	227	76	48	13	21.2
50	Wholesale trade — durables	26	17	6	3	22.9
51	Wholesale trade — nondurables	22	8	6	3	24.5
53	Retail trade — general merchandise	84	23	25	4	29.8
54	Food stores	525	99	203	36	38.8
55	Automotive dealers and service stations	13	9	1	1	9.7
56	Apparel and accessory stores	8	5	....	...	....
58	Eating and drinking places	68	22	....	...	....
59	Miscellaneous retail stores	17	6	8	3	46.0
60-65	Finance, insurance, and real estate	105	19	61	9	58.5
70-89	Services	353	81	23	11	6.5

NOTE: Due to rounding, sums of individual items may not equal totals, and percentages may not reflect shown ratios.

Dashes indicate absence of cost-of-living coverage.

The following tabulation shows the total number of workers and those under cost-of-living clauses (in millions) on January 1, 1971–82:[6]

	Workers			*Workers*	
Year	*With COLA*	*All*	*Year*	*With COLA*	*All*
1971	3.0	10.8	1977	6.0	9.8
1972	4.3	10.6	1978	5.8	9.6
1973	4.1	10.4	1979	5.6	9.5
1974	4.0	10.2	1980	5.4	9.3
1975	5.3	10.3	1981	5.3	9.1
1976	6.0	10.1	1982	5.1	9.0

Five unions account for 57 percent of the workers under major agreements with COLA clauses. The Automobile Workers represent 962,000; the Communications Workers, 609,000; the Teamsters, 513,000; the Steelworkers, 486,000; and the Machinists, 310,000. Each of the remaining unions represents fewer than 200,000 workers with cost-of-living provisions.

Table 3. Workers receiving deferred increases in 1982 in bargaining units covering 1,000 workers or more, by month

[Workers in thousands]

Effective month	Principal industries affected	Workers covered
Total		[1] 4,295
January	Construction	331
February	Metalworking	169
March	Metalworking, trade	276
April	Construction, metalworking, food stores	275
May	Construction	455
June	Mining, construction	795
July	Construction, utilities, food stores	547
August	Primary metals, communications	1,204
September	Mining, food stores	339
October	Transportation equipment	292
November	Construction	133
December	Mining	254

[1] This total is smaller than the sum of individual items because 775,000 workers will receive more than one increase. This total is based on data available as of Oct. 1, 1981, and thus may understate the number of workers receiving deferred increases for the entire year.

Adjustment formula. The most common rate of adjustment is 1 cent per hour for each 0.3-point rise in the CPI. Members of the Steel Industry Coordinating Committee[7] and companies which follow the steel contract pattern use this formula.

In addition, the 1979 Automobile Workers agreements provided COLA payments at this rate using a combined U.S.-Canadian index for the first 2 years, but changed the formula to 1 cent for each 0.26-point rise at the beginning of the 1981 contract year. COLA clauses in rubber industry contracts provide 1 cent for each 0.26-point increase in the CPI beginning in 1981, the second year of the agreements. The Bell System operating companies and manufacturing firms that follow their contract pattern specify changes of 55 cents per week plus 0.65 percent of each employee's weekly rate for each 1-percent movement in the CPI.

Timing, "caps", and indexes. COLA clauses provide reviews of changes in the CPI at regular intervals to deter-

Table 4. Timing of 1982 cost-of-living reviews in major contracts, by year of contract expiration and frequency of review

[Workers in thousands]

Type of contract, by expiration and frequency of cost-of-living review	First quarter		Second quarter		Third quarter		Fourth quarter		Full year [1]	
	Number of contracts	Workers covered	Number of contracts	Workers covered	Number of contracts	Workers covered	Number of contracts	Workers covered	Number of contracts	Workers covered
All contracts										
Total	358	2,187	338	2,044	344	1,969	290	1,124	532	3,439
Quarterly	282	1,846	274	1,839	249	1,008	234	892	289	1,866
Semiannual	53	240	28	72	39	154	34	91	75	316
Annual	23	101	36	133	56	807	22	141	143	1,203
Other [2]	...	...	...	...	...	...	...	...	25	55
Contracts expiring in 1982 [3]										
Total	87	1,123	47	960	30	158	3	4	103	1,177
Quarterly	53	960	43	942	16	107	2	3	53	960
Semiannual	29	138	2	14	13	48	0	0	31	152
Annual	5	24	2	4	1	3	1	1	11	47
Other [2]	...	...	...	...	...	...	...	...	8	18
Contracts expiring in later years										
Total	271	1,064	291	1,084	314	1,811	287	1,120	429	2,262
Quarterly	229	885	231	897	233	901	232	890	236	905
Semiannual	24	102	26	58	26	106	34	91	44	164
Annual	18	77	34	129	55	803	21	140	132	1,156
Other [2]	...	...	...	...	...	...	...	...	17	37

[1] Includes only those reviews through the termination of the present agreements; does not assume the continuation of existing reviews after contract expiration dates.

[2] Includes monthly, combinations of annual and quarterly, combinations of annual and semiannual, and reviews dependent on levels of the Consumer Price Index.

[3] Contracts that have at least one review in the year.

NOTE: Dashes indicate data not available.

mine if there are to be wage adjustments. Quarterly reviews are the most common; they cover 2.1 million workers, including those in the steel and automobile industries. Annual reviews affect 1.6 million workers, most notably in communications—Bell System agreements provide for reviews in August 1982. Semiannual reviews cover nearly 1.3 million workers, including more than 400,000 workers each in the railroad and trucking industries; in both industries, the frequency of review was changed from annual to semiannual in the 1978 and 1979 agreements.

"Caps", or maximum limits may also affect the amounts of cost-of-living adjustments. Slightly more than 1.1 million workers have such caps in their contracts. Currently, the largest single group with limits on COLA adjustments are the 400,000 workers in the railroad industry.

In addition, the amounts of cost-of-living increases are affected by the index used in the formulas. Contracts covering about 80 percent of the workers under COLA provisions use the BLS Consumer Price Index U.S. "all cities" average. About 265,000 workers ar under contracts with clauses using individual city index es. Automobile industry contracts, covering 695,00 workers, use a combination of the U.S. and Canadia indexes because bargaining units in both countries a involved.

Minimums or "guaranteed COLA", which provide "floor" for the size of wage change under the provisio cover 547,000 workers. These amounts are negotiated the time the contract is agreed upon and do not depe upon CPI movements. Therefore, they are included our tabulations as specified wage changes.

GIVEN THE CURRENT economic climate, it is possi that some of the increases discussed above will not implemented as scheduled. During 1981, there wer number of contract reopenings that provided for s pension of COLA provisions, wage decreases, or del in instituting previously negotiated increases.

FOOTNOTES

Major collective bargaining units are those which cover 1,000 workers or more in the private nonfarm sector.

For an analysis of the bargaining schedule for 1982, see Mary Anne Andrews and David Schlein, "Bargaining calendar will be heavy in 1982," *Monthly Labor Review*, December 1981, pp. 20–30.

These units include 870,000 workers covered by 185 agreements which expired or reopened prior to Oct. 1, 1981, but for whom settlements were not reached or for which information was not available in time to be included in these tabulations. About half of these workers were in railroad industry agreements. Another 284,000 workers were covered by 108 agreements expiring or reopening between Oct. 1 and Dec. 31, 1981, after the closing date for this article.

About 481,000 construction workers will receive deferred increases under settlements in which the parties agreed to a total wage and benefit package, with the final allocation between wages and be to be determined by the union. Because the final division wa known at the time this article was prepared, the entire packag been treated as a wage increase and may be overstated.

For more detailed information about cost-of-living provision setting inflation, see Victor J. Sheifer, "Cost-of-living adjust keeping up with inflation?" *Monthly Labor Review*, June 1979, p 17.

The data for 1982 are based on information available as of 1981.

The firms are Allegheny Ludlum Industries, Inc.; Armco Corp.; Bethlehem Steel Corp.; Inland Steel Co.; Jones and La Steel Corp.; National Steel Corp.; Republic Steel Corp.; United Steel Corp.; and Wheeling-Pittsburgh Steel Corp.

Organized labor in 1981: a shifting of priorities

The quickened pace of wage-and-benefit concessions and employment declines in major industries left organized labor with little to celebrate in its 100th year; these factors made labor and management more aware of the cooperation needed to resolve mutual problems

GEORGE RUBEN

The organized labor movement was 100 years old in 1981, but the celebration was muted by continuing difficulties in attracting workers to the movement, by employment cutbacks in some heavily unionized industries, and by disagreements with the Reagan Administration over social and economic policies. Opposition to Administration policies culminated in a September "Solidarity Day" rally of 400,000 workers in Washington, D.C., to publicize labor's grievances. And, in a break with tradition, the AFL-CIO did not invite the President to attend its annual convention. Shortly afterwards, in December, President Reagan met with AFL-CIO President Lane Kirkland and other labor leaders in an effort to improve relations, with mixed results. Kirkland agreed to help in attaining closer consultation on labor matters, but said that organized labor would continue to oppose the President's economic program.

The steel industry rebounded somewhat from its 1980 operating losses, but economic difficulties continued in the automobile and automobile parts, trucking, rubber, construction, and airline transportation industries. One consequence was an increase in the number of settlements calling for employee "sacrifices"—wage-and-benefit reductions or deferrals. The only beneficial aspect of these somber developments was an increased awareness by labor and management of the need to cooperate in countering mutual problems, such as foreign competition, energy shortages, and plant and product obsolescence. In some cases, this cooperative spirit was manifested by the establishment of formal bipartite committees that would continue after immediate difficulties are resolved.

There was some moderation in the inflation rate, but the unemployment rate increased as the economy entered a recession in the second half of the year. The voluntary program of wage and price restraints, initiated by the previous Administration, was ended in January. President Reagan said the program was "totally ineffective in controlling inflation" and that it "imposed unnecessary burdens on labor and industry." The Council on Wage and Price Stability, administrator of the program, generally agreed with the President's assessment, but said that the program had been successful in "preventing a bad situation from becoming even worse."

Auto industry's problems continue

Although 1981 was a "nonbargaining year" for the major automobile manufacturers, at Chrysler Corp., the Auto Workers and other unions agreed to wage-and-benefit concessions to aid the beleaguered company. General Motors Corp., Ford Motor Co., and American Motors Corp. also pressed the Auto Workers to reopen their contracts, contending that immediate reductions in labor costs were needed to compete effectively with Chrysler and foreign manufacturers. The union maintained that these companies were in better financial condition than Chrysler and would have to await the

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1982 contract bargaining to present their demands. However, late in the year, the Auto Workers agreed to start the 1982 bargaining earlier than usual. Union president Douglas Fraser said the decision was impelled by the deteriorating condition of the industry. General Motors and Ford (and Chrysler) contracts expire in September 1982 and American Motors' contract, in 1983.

In December of 1980, Chrysler submitted a wage concession plan to the Auto Workers and the other unions to enable the company to qualify for another $400 million in Federal aid under the Chrysler Corporation Loan Guarantee Act of 1979. The company lost $1.77 billion in 1980, and $1.1 billion in 1979. Lee A. Iacocca, chairman of Chrysler's board of directors, predicted that Chrysler would be bankrupt in February 1981 without an infusion of money. This impelled intensive negotiations in which Auto Workers' members agreed to $622 million in wage-and-benefit reductions, in addition to the $446 million in reductions (from the General Motors and Ford settlement pattern) the union had accepted in November 1979 and January 1980. The severity of the concessions could be reduced as a result of the company's commitment to negotiate profit-sharing and stock-ownership plans.

The wage concession plan approved by the Chrysler Loan Guarantee Board specified that Chrysler "take all possible steps" to get additional capital. This led to some merger talks between Ford and Chrysler, but Ford directors decided that a merger was contrary to "the best interests of Ford and its stockholders."

Some Auto Workers locals bargained with General Motors and Ford on the issue of "excessive" labor costs. In addition, the union engaged in unscheduled bargaining with several parts suppliers who sought pay concessions because of operating losses attributed to the automobile sales slump:

- At Ford's steelmaking operation in Dearborn, Mich., the Auto Workers agreed to an 86-cent-an-hour cut in earnings of incentive employees. This averted a planned cessation of steel sales to outside users, which would have resulted in the termination of 3,200 of the plant's 5,000 hourly workers. Ford said the pay cut was necessary because its "contractual" labor costs was 30 percent higher than those of competing steel companies.
- Ford gained efficiency-increasing changes in work rules at several plants, including Livonia and Sterling Heights, Mich., and at a stamping plant in Cleveland, Ohio, and it was seeking changes at a number of other locations. The work rule changes included the scheduling of overtime work and the ratios of inspectors and machine set-up workers to production workers. After the concessions, Ford announced a $1-billion project to convert the two Michigan plants to produce transmissions. A company official said that the changes in work rules had enabled the two plants to underbid Tokyo Kogo (which is 25 percent owned by Ford) for the production contract.
- Possible closing of a General Motors roller bearing plant in Clark, N.J., was averted when employees agreed to purchase the operation. The employers also agreed to a 25-percent reduction in compensation, which would be partly offset by a distribution of stock shares to employees and by possible monthly and semiannual payments based on the plant's output.

As the year closed, there was no relief in sight for the auto industry, as sales continued at a substantially lower rate than in 1980. Ford, Chrysler, and General Motors reported a combined loss of more than $950 million for the third quarter. The situation was particularly acute at Chrysler, where the loss was $149 million, instead of the $38 million the company had forecast in the survival plan approved by the loan guarantee board.

Steel industry rebounds

Most of the Nation's steel producers operated at a profit during 1981, after suffering losses in 1980. At U.S. Steel Corp., the turnaround was attributed to the closing of inefficient plants and the revamping of others, and to the completion of some required antipollution measures.

The biggest question in the industry's relationship with the United Steelworkers was the status of the Experimental Negotiating Agreement. The agreement, which prohibited the union from striking over economic issues in return for a "floor" under each wage and benefit settlement, was first negotiated in 1973 and was renewed in each subsequent settlement, but not in 1980. This means that the union can strike when the current 3-year wage-and-benefit contract expires in 1983, and that any 1983 settlement would not be subject to the economic floor.

The delay on the fate of the Experimental Negotiating Agreement apparently resulted from management's concern that the floor under economic settlements might be too high a price to pay for the operating economies resulting from a strike-free relationship. Specifically, management was concerned that the required minimum increase in compensation in each contract year (an amount equal to 3 percent of average straight-time hourly earnings) and the required retention of an uncapped cost-of-living clause had helped to widen a labor cost disparity with foreign producers. Despite these misgivings, the parties did conduct intermittent talks on the agreement.

Even though the fate of the Experimental Negotiating Agreement was uncertain, there were instances of a cooperative approach to mutual problems. The latest effort consisted of Labor-Management Participation Teams set up in the plants of five companies under provisions of the 1980 agreement. The aim of the experimental teams is to increase productivity and improve working conditions through better communication and cooperation between supervisors and employees.

In addition, the Steelworkers pressed for reactivation of the Steel Tripartite Advisory Committee that had been established in 1978 to seek solutions to problems of capital formation, trade, technology, environment, and community assistance. President Carter had announced a national steel policy based on recommendations of the committee, but some aspects were not enacted prior to the end of his term of office.

Despite improved performance in 1981, several major companies were planning to sue some European steel producers for allegedly engaging in unfair practices, such as selling in the United States at prices below their production costs. The Department of Commerce initiated unfair trade charges against 5 countries, asserting that they had subsidized steel produced for export to the United States.

Analysis of 'new' contracts

Postal Service—change in approach. In terms of the number of workers involved, the major 1981 settlements involved the U.S. Postal Service, which bargained with four unions representing 600,000 employees. The talks were scheduled to start in April, 3 months before expirations of the current agreements. The Postal Service refused to start then because the unions, departing from past procedures, requested separate bargaining. The bargaining approach involved one set of negotiations for the two largest unions, the American Postal Workers (representing 300,000 workers) and the National Association of Letter Carriers (195,000), and another set for the Rural Letter Carriers (63,000) and the Mail Handlers Division of the Laborers union (39,000). The Postal Service asked the National Labor Relations Board to order the unions to bargain jointly, but the board upheld the unions' bargaining approach.

The Postal Workers and the National Association of Letter Carriers settled about 16 hours after the July termination date of their contracts. There was no walkout, although the unions' members had agreed to strike if they had no contract upon expiration of the existing one. The Rural Letter Carriers union, whose members (like the Mail Handlers) did not authorize a strike, settled several hours earlier on essentially the same terms as the two largest unions.

The 3-year contracts provided for $300 increases in annual salaries in July of each year, a $150 "contract signing bonus," a $350 cash payment each year, and possible payments under a new productivity plan. There was no change in the cost-of-living formula.

The Mail Handlers contended that the other unions had accepted inadequate pay, health, and safety provisions and opted for resolution of these and other issues through continued bargaining. This failed and the parties were in arbitration at yearend.

Airlines—controllers fired. A strike by 15,000 members of the Professional Air Traffic Controllers Association (PATCO) began on August 3, after they rejected an offer valued at $40 million a year from the Federal Aviation Administration. The accord would have raised controllers' annual earnings by 6.6 percent, or about $2,300. (This would have been in addition to the 4.8-percent increase PATCO members, and other Federal white-collar employees, were scheduled to receive in October.) Part of the increase would have resulted from a new "responsibility differential" giving the controllers time-and-one-half pay for the 37th, 38th, 39th, and 40th hours worked in a week; the balance would have come from increasing premium pay to 15 percent, from 10 percent, for hours worked between 6 p.m. and 6 a.m., and from eliminating a requirement that premium pay for Sunday and holiday work count toward the $1,927.40 statutory limit on biweekly pay. The rejected accord also would have given employees a greater voice in developing operating rules and in selecting new equipment.

Reportedly, the workers turned down the proposed agreement and walked out because they wanted a larger pay increase, accelerated retirement to counter the problem of job stress, and a shorter workweek.

President Reagan warned that strikers who did not return to work by 3 p.m. on August 5 would be fired for violating the no-strike law applicable to Federal employees. Despite this ultimatum, only a few hundred strikers returned to work; the Administration then began the procedures necessary to terminate the workers, took steps to decertify PATCO as the workers' bargaining representative, and began the long process of training replacements for the dismissed workers. In October, the Federal Labor Relations Authority, (which oversees labor relations in the Government), decertified the union; PATCO's appeal is presently in Federal court.

The walkout did not draw heavy support from other unions; one apparent reason was that they may not have wanted to be involved in an illegal stoppage. But it did spawn a variety of opinions about the rights of public employees. Labor mediator Theodore W. Kheel said that the strike pointed out the "inherent, irresolvable conflict between giving public workers the right to bargain on one hand, and declaring strikes by such workers illegal on the other." (Federal employees are generally not permitted to bargain on wages and benefits, but the Federal Aviation Administration had agreed to bargain with PATCO because of concern over the stress and equipment problems faced by controllers. Any resulting settlement could have been implemented only by congressional action.)

As the year ended, the strikers' appeal was still before the courts, the Administration had submitted the rejected settlement to the Congress for enactment, and labor and consumer leaders were filing a suit alleging that the Administration's refusal to rehire the strikers was disrupting air travel and endangering public health and safety.

Railroads—39-month contracts. The procedure leading to settlements for nearly half a million railroad workers began early in the year, when the 13 unions served the required notices on the carriers specifying their demands for changes in wages, benefits, and work rules. However, intensive negotiations started in August, after the unions and the carriers agreed on proposed changes in the Railroad Retirement Act and sent them to the Congress for action.

In mid-November, six unions and the National Railway Labor Conference, the industry bargaining arm, settled on a 39-month contract for 240,000 workers. Reportedly, the accord provided for a total pay increase of 32.5 percent plus improvements in health and welfare benefits. The union gave up its demand for a liberalized cost-of-living pay adjustment clause because, according to Railroad and Airline Clerks president Richard Kilroy, "it wasn't the time to be saber rattling," referring to the recession and President Reagan's response to the strike by air traffic controllers. The members of the six unions will continue to receive semiannual adjustments calculated at 1 cent for each 0.3-point movement in the BLS Consumer Price Index for Urban Wage Earners and Clerical Workers (1967=100). As before, pairs of adjustments are limited to the amount resulting from an 8-percent rise in the index.

In an earlier settlement, the Consolidated Rail Corp.'s union-represented employees had agreed to limits on wage increases intended to save the deficit-ridden carrier $600 million. Employees not represented by unions gave up a proportionate sum of $57 million.

The Conrail settlement with the various unions provided that employees receive the same wage-and-benefit terms as each union's "national" settlement, except that all wage increases to be effective before January 1, 1982, would be paid only to the extent that their sum exceeded a 10-percent increase. Increases effective on or after January 1, 1982, would be paid to Conrail employees, but only to the extent that their sum exceeded a 12-percent pay increase.

The wage limit goal for Conrail employees was specified in the Northeast Rail Service Act of 1981, which also provided for additional Federal financial aid to Conrail (Conrail was formed in 1976 to take over the freight operations of six bankrupt railroads); for a possible employee purchase of Conrail in 1984 if two financial tests are passed in 1983 (if Conrail does not pass both tests, the Secretary of Transportation would be permitted to sell Conrail in parts); and for Conrail to reduce its 17,000 miles of track and its number of employees, with affected workers receiving severance payments financed by a designated part of the Federal aid. In a hopeful note, Conrail announced a third-quarter profit of $64.9 million, only the third profitable quarter in its history. In the third quarter of 1980, Conrail had lost $88.1 million.

As noted, the delay in reaching a national rail accord occurred because the parties were busy formulating proposed amendments to the Railroad Retirement Act. The Railway Labor Executives Association, composed of leaders of the 21 rail unions, reported that the fund was nearly exhausted because of the size of cost-of-living adjustments, and because there were more than a million current beneficiaries and only about 560,000 active employees.

The resulting legislation provided for a number of changes designed to help close the gap between fund income and benefit payments. One change reduced the social security payment to retirees eligible for both social security and railroad retirement benefits as a result of service performed under both systems prior to 1975. The reduction varies according to the amount of money allocated by the Congress for a particular fiscal year; for the fiscal year beginning October 1981, the reduction would be about $23 a month, or 21 percent.

The employer and employee financing rate for "Tier 1" benefits (similar to social security benefits) remained at the same level as the rate for workers covered by social security, but the employer payment rate for "Tier II" benefits (similar to usual pensions in other industries) was raised to 11.75 percent of the first $1,850 of monthly earnings, from 9.5 percent. In addition, employees began contributing to Tier II benefits at a rate equal to 2 percent of the monthly earnings base.

Coal mining—63-day strike. The United Mine Workers and the Bituminous Coal Operators' Association (BCOA) had predicted a peaceful renewal of their contract, although their last five collective bargaining settlements were preceded by strikes. Some of the factors influencing the goal of a strike-free settlement were the desire to demonstrate that their mines could be relied on to help alleviate the energy shortage; production declines in BCOA mines and accelerated production in western surface mines where the UMW has had limited organizing success; and concern over the possible fragmentation of the 130-member BCOA that could result from a stoppage. To decrease the chance of a strike, talks were started 6 months before the March expiration of the existing contract. The first settlement, on March 23, was rejected by the rank-and-file and a resulting strike lasted 63 days, ending when the operators agreed to modify certain provisions of the rejected contract.

One disputed point was resolved when the operators agreed to continue paying royalties to the miners' benefit funds on coal purchased for resale. The miners had contended that elimination of the royalty payment would lead to widespread purchase of coal from nonunion mines. The cost of this concession was partly offset by providing that current and future widows of miners who retired prior to December 6, 1974, would receive a $95-a-month pension beginning in March 1982, instead of the $100 a month that would have been effective 2 months earlier under the rejected contract.

The Arbitration Review Board was terminated. The board was established by the previous contract to make precedent-setting decisions on grievances. However, the parties agreed that existing precedents would be used to settle future grievances. The union had viewed the board as pro-management; explaining that the union had prevailed in only 8 of the 72 decisions in the board's 3 years of existence.

The approved contract also prohibited operators from contracting out work or leasing coal lands or operations if it deprived UMW members of work they had normally performed in the past. (The 1978 contract had required contractors and lessees to employ only UMW members, but this provision had been invalidated by a 1980 court decision.) Wage and benefit improvements included $3.60 an hour in "set" wage increases, including $1.50 in quarterly increases designated as cost-of-living adjustments but not contingent on the movement of the Consumer Price Index; increases in pensions for current and future retirees; adoption of dental coverage for miners and their dependents and increases in life insurance and sickness and accident benefits for miners.

The parties agreed to establish a joint committee to decide if each company should be permitted to maintain its own pension plan providing a standardized schedule of benefits, instead of the existing common plan funded by all companies.

Despite the duration of the walkout there was no major impact on coal users, who had built up larger than normal stockpiles in anticipation of a stoppage.

Pay and benefit concessions

The wage concession accords at Chrysler and Conrail drew the most attention, but there also were concession accords in other industries, including airline transportation, rubber, trucking, and meatpacking. Clearly, instances of worker concessions in 1981 exceeded the number in 1980 which, in turn, exceeded the number in 1979. However, the number of workers affected in 1981 was relatively small, compared with the number of workers covered by 1981 settlements that provided for improvements in wages and other contract provisions.

Airlines. The Nation's airlines continued to be buffeted by operating losses attributed to high fuel costs and cost competition resulting from deregulation of the industry. In addition, the air traffic controllers strike was expected to restrict air traffic for at least 2 years. As a result of these events, some unions agreed to wage concessions to aid their employers.

The concessions varied. The accord between United Airlines and the Air Line Pilots Association provided for the pilots to receive a 29-percent pay increase over the 26-month contract term. In return, the pilots agreed to a number of changes in operating rules to improve productivity, such as a 7.5 hour increase in maximum credited monthly flying hours; a reduction in the number of nonflying hours credited as flying hours; use of two pilots on Boeing 737 aircraft; and a straight salary instead of the previous complex pay formula that was based on such things as the speed and weight of the aircraft and whether the flight was at night or over water.

Most of the other concession agreements generally provided for a 10-percent pay decrease extending for specified periods. At the end of that period, pay scales would be restored to the prereduction level and raised by the amount of any pay increases that had been scheduled to go into effect during the period.

Trucking. In September, the Teamsters union announced that it would accede to the industry's request for early bargaining on renewal of the current 3-year agreement, scheduled to expire in March 1982. Union president Roy Williams indicated that the union "could live with" a freeze on specified pay increases in the new contract if fringe benefits and cost-of-living allowances were maintained. At the time, 117,000 members of the union were on layoff in the trucking industry, compared with 60,000 a year earlier.

In 1980, the Teamsters turned down an industry request to reopen bargaining on the labor-cost issue. Since then, some local unions have agreed to pay cuts or changes in work rules to aid their employers. One example was Yellow Freight Systems of St. Louis, where changes in work rules included a ban on premium pay for nonovertime weekend work. This change was expected to save the company $265,000 over a 1-year period.

System 99, a California-based trucking firm tried a different approach. About 1,500 of its employees participated in a voluntary plan under which they received only 85 percent of their usual pay. The company will pay the withheld amount in monthly steps beginning in May 1982 if its income exceeds basic expenses.

Rubber. Rubber workers continued to experience difficulties in 1981, and agreed to wage or work rule concessions to help assure continuation of their jobs. Problems plaguing the industry included increased production of lighter cars and radial tires contributing to longer tire wear, a reduction in driving resulting from higher fuel costs, and obsolete plants.

The first concession accord involved a Firestone Tire and Rubber Co. plant in Memphis, Tenn., which produces bias ply tires. The changes included a "restructuring" of jobs that would result in lower pay rates for nonincentive employees (incumbents were guaranteed their current rates); a requirement that maintenance workers perform some work outside their normal trade, in exchange for increased pay when they became proficient in the new duties; and adoption of a 7-day-a-week operation, with straight-time pay for nonovertime weekend work.

A majority of the 13 Rubber Workers' locals that bargain with Goodyear Tire & Rubber Co. approved a concession accord at a plant in Topeka, Kans., after first rejecting it. One change called for straight-time pay for nonovertime weekend work. Goodyear said it would now be able to operate the plant more efficiently and proceed with plans to convert the plant from production of bias-ply tires to production of radial truck tires. The conversion may mean that Goodyear will not close down a 44-year-old plant in Jackson, Mich., which also produces bias-ply tires. Goodyear said it did not need two plants producing the same type of tires.

Meatpacking. The industry most severely hit by production cutbacks, plant closings, and employee pay concessions in recent years has been meatpacking. Cutbacks have been limited to the "old line" meatpackers, who experienced serious difficulties in competing with new companies which usually have lower paid nonunion labor and modern single-story plants located in animal producing areas, and which use techniques such as selling precut boxed meat.

Examples of concessions in the industry include a Swift & Co. plant in Rochelle, Ill., that was closed, then purchased by Dubuque Packing Co. and reopened with, according to employees, a 60-percent cut in compensation and Dubuque Packing Co., which reversed its decision to close a plant in LeMars, Iowa, after employees agreed to a 2-year freeze on wages and benefits.

Similar concessions and bargaining were also underway with other companies. Virtually all of the production workers at the "old-line" companies (Armour and Co., Swift & Co., Wilson & Co., Cudahy Co., for example) are covered by agreements with the United Food and Commercial Workers that expire in 1982.

Union wage increases, strikes

Major collective bargaining settlements (those covering 1,000 employees or more) reached in private industry during the first 9 months of 1981 provided wage adjustments averaging 11.5 percent for the first year of the contract and 9.3 percent a year over the life of the contract. The average adjustment when the same parties bargained previously (on average about 32 months earlier), was 9.2 percent in the first contract year and 7.8 percent over the life of the agreement. Settlement data exclude wage changes that occurred under cost-of-living adjustment (COLA) clauses.

During the first 9 months of 1981 settlements covered 1.5 million workers in 418 major collective bargaining units. Approximately 9 million workers in about 2,000 units are included in the Bureau of Labor Statistics' major collective bargaining series.

Because measures of wage settlements exclude possible COLA changes, they tend to be lower in settlements with COLA clauses. First-year negotiated adjustments averaged 7.9 percent in agreements with COLA clauses, compared with 12.4 percent in those without; wage adjustments over the life of the agreements were 6.4 percent and 10.0 percent, respectively. Agreements with COLA clauses had an average duration of 33.6 months; those without averaged 30.6 months.

COLA clauses covered 306,000 workers or 21 percent of those under settlements concluded during the first 9 months of 1981. About 45,000 workers were covered by seven agreements which introduced COLA clauses or reestablished a COLA provision that had been dropped earlier. COLA clauses were dropped in nine agreements, covering 28,000 workers. When benefits were combined with wages (in settlements for 5,000 workers or more) the average adjustment was 11.8 percent in the first contract year and 10.0 percent over the life of the agreement.

In a broader measure of wage change, about 7.7 million workers received "effective" adjustments averaging 8.4 percent during the first 9 months of 1981. This data series combines wage changes resulting from settlements during the period with deferred increases resulting from earlier settlements and increases under COLA clauses. When the 8.4-percent increase was prorated over the 9 million workers under major agreements (including the 1.3 million who did not receive an increase during the period), the average adjustment was 7.1 percent.

Fewer work stoppages. Labor-management disputes led to about 3,563 work stoppages that either began in the first 10 months of 1981 or began earlier and were carried over into the period, according to preliminary estimates. This was lower than for the comparable periods of all recent years. Similarly, there were fewer workers involved in strikes in the first 10 months than in the comparable period of any recent year. The data are limited to stoppages involving six workers or more and lasting a full shift or longer.

State of unions

Data for 1981 are not yet available, but union membership dropped to 20.9 percent of the labor force in 1980, from 24.7 percent 10 years earlier. Actually, the number of union members increased from 21.2 million to about 22.4 million over the period but this gain was more than offset by the growth of the labor force.

The economic difficulties in some industries were evident from decreases in membership of certain unions from 1978 to 1980. The Auto Workers led the declines (down by 142,000 members), followed by the Steelworkers (48,000), the Clothing and Textile Workers (46,000), and the Teamsters (33,000). Percentagewise, the most seriously affected were the Rubber Workers (down 15.2 percent), Oil, Chemical and Atomic Workers (14.4 percent), and the Auto Workers (9.5 percent). The State, County and Municipal Employees gained the most members over the 1978–80 period (78,000 or 7.6 percent), followed by the Food and Commercial Workers (64,000 or 5.2 percent), and the American Federation of Teachers (49,000 or 9.8 percent).

In 1981, there was no major organizing breakthrough, such as that which occurred in 1980 when the Clothing and Textile Workers succeeded, after a 17-year campaign, in organizing several of J.P. Stevens & Co.'s 75 textile mills. A cautious working relationship has developed between the parties in the wake of their 1980 agreement in which Stevens recognized the Clothing and Textile Workers as bargaining agent at 10 of its plants in return for the union's promise to end its consumer boycott and publicity campaign. The union lost the one representation election held in 1981 at a Steven's denim manufacturing plant in South Carolina, but contended that the loss was not significant because it was the first election at the plant.

The Steelworkers union continued its 7-year campaign to gain the right to represent workers at DuPont Co. Currently, the Steelworkers represent workers at one DuPont facility in Minnesota. In November, the parties ended a dispute by agreeing that representation elections would be conducted at 16 plants in December 1981. DuPont has about 100 plants, with about 70,000 production workers. About 40 percent of the workers are represented by unions, usually local independent unions.

Although several unions discussed merger possibilities during the year, there was only one merger (the American Radio Association with the Masters, Mates, and Pilots). This was not indicative of the pace of mergers in recent years—eight mergers during 1980 and 1981 accounted for 13 percent of all mergers that have occurred since the unification of the American Federation of Labor and the Congress of Industrial Organizations in 1955.

In internal union affairs, the major event was the reaffiliation of the Auto Workers with the AFL-CIO. Auto Workers' president Douglas Fraser said the return would "strengthen the trade union movement." The union left the federation in 1968 because of policy differences between Auto Workers' president Walter Reuther and AFL-CIO president George Meany.

There were several leadership changes—Teamsters' president Frank E. Fitzsimmons died and was succeeded by Roy Williams; Railway Clerks' president Fred J. Kroll died and was succeeded by Richard I. Kilroy; and Rubber Workers' president Peter Bommarito retired and was succeeded by Milan Stone.

Labor laws and regulations

Although the economic and social policies of the new Administration drew the most criticism from organized labor, unions were also concerned about changes planned or instituted in labor laws and regulations.

Davis-Bacon Act. The Administration announced plans to modify the Davis-Bacon Act, which authorizes the Department of Labor to set wage levels for workers on federally-financed construction project based on the prevailing area wages. Secretary of Labor Raymond Donovan emphasized that the proposed changes would significantly reduce the cost of construction projects. This position was supported by a study conducted by the Carter Administration's Council of Economic Advisers, and by a 1979 study by the General Accounting Office (the investigative arm of the Congress) which called for repeal of the act. Objecting to the proposal, Robert Georgine, president of the AFL-CIO's Building and Construction Trades Department, argued that the act prevents contractors from importing workers from other communities to drive down labor costs to win Federal contracts.

The proposed changes would set the pay rate for any given trade on a project at the rate prevailing for at least 50 percent of the workers in that trade in the area, or if a majority were not paid the same rate, at the average for all employees in that trade (now, pay rates can be based on the prevailing rates for as few as 30 percent of the workers in the area); permit contractors to use one helper for every five journeypersons; prohibit the use of urban wage data in setting rates on rural projects; and reduce reporting requirements for contractors. A decision on these proposals is expected in 1982.

Service Contract Act. In a companion move, the department proposed changes in the Service Contract Act, which requires contractors servicing Federal agencies to pay their employees the Federal minimum wage or the prevailing local wage for the occupation, whichever is higher.

The proposed changes called for exemption of a number of types of contracts, including those for research and development and for maintenance and repair of computers and scientific equipment. A final decision on this proposal also is expected in 1982.

Job safety and health. With the change of administration came a change in the approach to the Occupational

Safety and Health Administration's rule-setting and inspection methods. In accord with a presidental order directing Federal agencies to assess the costs and benefits of major regulations, OSHA began a review of its standard for employee exposure to cotton dust. The cost-benefit approach to rule setting drew sharp criticism from labor leaders, particularly from the Clothing and Textile Workers union. And in June, the Supreme Court ruled that OSHA must protect workers against toxic substances to the greatest extent possible, without regard to the balance between cost and benefit.

Other actions taken by OSHA during the year included a drive to eliminate unnecessary rules, a program to permit worker-management teams to conduct safety inspections in firms that have good safety records (all other firms would continue to be checked by OSHA or State inspectors); issuance of a noise standard, replacing the standard issued in the closing days of the Carter Administration, and withdrawal of the "walkaround pay" rule that required employers to compensate employees for time spent accompanying OSHA inspectors.

Home-work restrictions. A controversy that lasted throughout the second half of the year erupted when the Department of Labor announced proposals to lift the ban on employers hiring people to perform certain types of work in their homes. The proposal came after a group of knitters in Vermont protested the Department's move to stop them from producing ski wear in their homes. The general arguments of the Ladies Garment Workers, the Clothing and Textile Workers, and many manufacturers were that the change would result in a substantial increase in "sweatshop" operations that would offer unregulated, unfair competition to firms that use inplant labor.

The October decision lifted the ban on knitting outerwear at home but continued the ban for women's apparel, jewelry, gloves and mittens, buttons and buckles, handkerchiefs, and embroideries.

Later, the two unions and a number of knitted outerwear makers sued the department, contending the decision was contrary to most of the comments and testimony received on the issue and that the change would foster unfair competition.

Anti-discrimination. The new Administration also brought new approaches to enforcing Federal anti-job discrimination laws. The Department of Labor proposed some revisions of its anti-bias regulations covering companies that do business with the Federal Government. One change would exempt companies with fewer than 250 employees and a contract worth less than $1 million from preparing a written plan for hiring women and minorities. Currently, rules cover firms with 50 workers or more and a $50,000 contract. Other changes would exempt employers from setting goals and timetables for job groups in which women and minorities equal at least 80 percent of their availability in the general work force; permit contractors with 250 to 499 employees to file abbreviated affirmative action plans; eliminate pre-award reviews of employers scheduled to receive Federal contracts of at least $1 million; and reduce from 16 to 9 the number of affirmative action steps required of construction contractors and apply the steps, goals, and timetables only to the larger contractors.

Equal employment opportunity

The year was marked by a surge of interest in the "comparable worth" theory. In general, proponents of the theory contend that women should be paid the same as men—even if their duties are different—if the jobs are of comparable worth to society. Opponents contend that implementation of the theory could severely disrupt the economy because of the extreme difficulty of making precise comparisons of the worth of dissimilar jobs.

Attention focused on the Supreme Court ruling on the issue: the court held that a woman may not be paid less for a job simply because she is a woman, and that women who claim that their wage rates have been undervalued because of sex discrimination may file suit under Title VII of the Civil Rights Act of 1964. Previously, the only remedy was under the Equal Pay Act of 1963, which requires equal pay for equal work. Supporters of the theory described the Supreme Court decision as a major step toward comparable worth; their adversaries said the implications of the decision were much more restricted.

Some major disputes concerning equal employment opportunity were settled during the year. Sears Roebuck & Co. and the Equal Employment Opportunity Commission (EEOC) settled out of court on a series of racial discrimination charges, ending an 8-year dispute. The accord called for Sears facility managers to intensify their efforts to attract minority job applicants and to document their efforts for the company's group managers and the EEOC.

A Federal district judge revoked an order issued by the Department of Labor in July 1980 that banned Firestone Tire & Rubber Company from doing business with the Federal Government because of alleged employment discrimination. The judge held that the department had relied on an erroneous internal memorandum written by a Firestone employee. Firestone actually did not lose any government business during the period because it obtained stays of the debarment order pending a final judicial decision. □

State labor legislation enacted in 1981

The minimum wage was raised in 26 jurisdictions, sometimes above the Federal rate; more attention was paid to special protection for 'whistleblowers' and unemployment from plant closings and layoffs, as well as for veterans and disabled workers; and one State repealed its prevailing wage law

RICHARD R. NELSON

State labor legislation passed in 1981 covered a wide variety of subjects,[1] including such traditional fields as minimum wage, prevailing wage, child labor, job discrimination, and regulation of private employment agencies. At the same time, new interest was shown in problems of "whistleblower" protection and of plant closings and resulting mass layoffs.[2]

Minimum wage rates were increased in 26 jurisdictions last year, primarily resulting from previously adopted wage escalation schedules, although a few increases were approved this year. Eighteen jurisdictions have a minimum rate for some or all occupations equal to or exceeding the $3.35-per-hour Federal standard that took effect January 1, 1981, the last scheduled increase prescribed by the 1977 amendments to the Fair Labor Standards Act. Two more States will reach the $3.35-an-hour rate during 1982.

In other minimum wage action, coverage in North Carolina was extended to employers of three or more rather than four or more as before; the minimum salary level for exemption of executive, administrative, or professional employees was increased in Maine; and in Oregon, persons over age 65 were removed from a list of those for whom a subminimum hourly wage rate may be set.

Laws pertaining to wage garnishment or assignment were enacted in 16 jurisdictions, with many setting limits on the amount of earnings subject to assignment for the payment of child support. Employees in Alaska, Illinois, Louisiana, Nevada, Tennessee, and Wyoming are now protected from disciplinary action imposed as the result of any garnishment or assignment, and existing protections were expanded in Hawaii, and North Dakota. Rhode Island made the wages of State and local government employees subject to garnishment.

Again in 1981, as in the last two years, many bills were introduced to repeal State prevailing wage laws. Although bills were introduced in 14 States, only the Utah law was repealed, an action taken over the Governor's veto. All the other repeal attempts failed, including bills vetoed in Colorado and New Mexico; measures in California and Wisconsin, still in committee, will be carried over to the 1982 legislative session. Courts in Michigan and Missouri upheld the constitutionality of the prevailing wage laws in those States, both of which rely solely on collectively bargained rates as the prevailing rates. Decisions on the same issue had differed in previous years. The New Jersey law was upheld and the Arizona rate determination methodology was ruled invalid.

In other prevailing wage developments, Rhode Island made wage-rate violators subject to an 18-month ban on bidding for or being awarded a public contract. The labor department in Montana was given subpoena pow-

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er to compel the production of payroll records, and the prevailing wage rate is to be included in bid specifications and contracts. New Jersey extended coverage of its prevailing wage law to any construction by the New Jersey Building Authority. Oklahoma mandated use of Federal Davis-Bacon rates where available and required payment of prevailing fringes. In Washington, wage rates must now be posted at the job site.

A comprehensive law in Minnesota grants seasonal farmworkers important new protection. These workers now must be paid for a guaranteed number of hours; are to be provided written pay statements itemizing deductions from wages; and are to be informed, at the time of recruitment, of the minimum duration of employment, and of working conditions, wages, and housing provision if any.

Similarly, in Oregon, a new amendment requires that migrant workers be furnished with the names and addresses of their employers, with notification of any labor dispute at the work site, and with statements of hours of work and rates of pay. Texas prohibited the use of short-handled hoes in most agricultural labor.

Texas adopted a comprehensive new child labor law setting 14 as the basic minimum age for employment, requiring the Labor Commissioner to determine hazardous occupations for workers under age 18. The law also prescribes hours of work restrictions, and provides for age certificates and the issuance of individual variances. In other States, most of the changes in child labor law involved the easing of either nightwork restrictions (Alaska, Connecticut, Florida, Maine, and Oregon) or of certificate requirements. New Jersey, Virginia, and West Virginia passed laws permitting minors to participate in activities of volunteer fire departments or rescue squads.

In a year designated as the International Year of Disabled Persons, State interest in furthering equal opportunity for handicapped individuals was reflected in the enactment of laws in 13 States, to provide new or expanded employment rights or opportunities. Among the more significant were a new equal-employment-for-the-handicapped law in Georgia; an amendment to the Civil Rights Act in Oklahoma, adding discrimination because of handicap to the list of unfair employment practices; and an amendment to the Vermont antidiscrimination law, prohibiting discrimination in employment based on physical or mental condition. Tennessee and Texas provided for alternate forms of testing handicapped job applicants. Other States extended protection from discrimination to additional classifications of handicapped individuals including those with mental impairments and the aurally handicapped.

Other forms of employment discrimination were the subject of legislation in 18 States. Among the more significant, public employees were made subject to the Hawaii Fair Employment Practice law, and the prohibition against sex discrimination was defined to specifically include discrimination because of pregnancy and related medical conditions. Connecticut also defined sex discrimination to include matters relating to pregnancy or related medical conditions, and also required that employees be informed of substances involved in the job which might cause birth defects, or be hazardous to a worker's reproductive system or to the fetus. Employment, transfers, or promotions may not be conditioned on the sterilization of the employee. A new law in Alaska prohibits sex discrimination in employment in public education.

In an area of emerging interest, California established a policy of "comparable worth" in setting salaries in State government in jobs dominated by women, on the basis of the value of the work performed. Resolutions were passed in Hawaii urging all employers to adopt this concept of equal pay for work of comparable value.

The antidiscrimination law in Vermont was amended to prohibit age discrimination, and mandatory retirement because of age was prohibited except for police officers, firefighters, and tenured employees of colleges and universities. The upper age limit in the ban on age discrimination in employment was raised from 65 to 70 in Georgia and Oregon. Although Nevada, which formerly had no age limits, made the prohibition on age discrimination inapplicable to those not between age 40 and 69.

Legislation for the benefit of veterans was enacted in a number of States. These laws either provide preference in public employment for veterans or their spouses, or establish training programs or seminars to further employment opportunities.

There is extensive State interest in developing legislative remedies to alleviate the impact of plant closings on workers and communities. Measures of this nature were proposed in 19 legislatures this year but not adopted. Although the proposals are not identical, they share one or more features, such as advance notice, severance pay, entitlement to retirement benefits, creation of a community assistance fund and, sometimes, employee option to purchase the plant. The only laws enacted in the past are a 1975 Wisconsin statute requiring that the State labor department be notified in advance of any closings, and a Maine law, expanded this year, which requires advance notification to the labor department, the employees, and the municipality, and severance pay to employees. Connecticut created a committee to study plant relocation and mass layoffs and to make legislative recommendations to the 1982 General Assembly.

California prohibited awarding of State contracts to contractors found to be in violation of a National Labor Relations Board order more than once in the preceding two years. Similar laws were enacted in Michigan, Ohio, and Wisconsin in 1980 and in Connecticut in 1979. Among other labor relations laws, local public employees in California were authorized to negotiate agency shop agreements, collective bargaining rights were extended to county employees in Maine, and North Carolina prohibited strikes by public employees.

Twelve States enacted legislation affecting the regulation of private employment agencies. Most significant actions were in South Dakota, which repealed its law; Montana, where maximum placement fees charged by agencies will no longer be set by statute; and South Carolina, where licensing and enforcement authority were removed from the Department of Labor, and rulemaking, investigatory, and penalty provisions were deleted from the law. Licenses in South Carolina will now be issued by the Secretary of State, and enforcement will be by court action. Several amendments were made in the Ohio law, including a ban on registration fees, tightened restrictions on misleading advertising, and requirements that applicant contracts be in writing and placement fees refunded in certain circumstances. Maximum placement fees for jobs paying less than $13,000 annually are now set by statute.

Five States: Connecticut, Illinois, Louisiana, Ohio, and Oregon, amended individual statutes in 1981 to protect from employer retaliation an employee who reports a violation of law or participates in an enforcement proceeding. Michigan adopted a separate "Whistleblowers' Protection Act" to afford such protection to all employees in both the private and public sectors.

The following is a summary, by jurisdiction, of labor legislation during 1981.

Alabama

Wages. Up to 40 percent of a parent's weekly disposable earnings are now subject to court-ordered garnishment for child support.

Alaska

Wages. By prior law, which sets the minimum wage at 50 cents per hour above the Federal rate, the minimum wage rate rose to $3.85 on January 1, 1981.

Orders for support of a minor child now have priority over all other assignments or garnishments, and must contain an income assignment order, with 50 percent of gross wages or $100 a week, whichever is less, exempt from assignment. Employees may not be discharged on the basis of this assignment.

Child labor. Restrictions for minors under 16 were relaxed to permit work as early as 5 a.m. and until 9 p.m. Previously, minors could not work before 6 a.m. or after 7 p.m.

Equal employment opportunity. Sex discrimination is now prohibited in employment in public education. No difference is allowed between the sexes in conditions of employment or advancement opportunities, and affirmative action procedures are to be developed by the State Board of Education, which will administer this law. Career counseling services must stress access to opportunities without regard to sex.

Arizona

Private employment agencies. The law regulating private employment agencies no longer applies to agencies which do not charge a fee to job applicants.

Employment and training. Among numerous limitations placed on State agency competition with private enterprise, the Department of Economic Security, which administers the public employment service, is expressly prohibited from engaging in activity not prescribed by Federal or State law or Federal regulation, and may not participate in radio, television, or newspaper advertising of specific job openings unless prescribed by Federal law.

Other laws. Training programs receiving State assistance under the Work-Site Education and Training Act must now ensure training on a priority basis to Vietnam era veterans in addition to other groups previously specified.

Arkansas

Wages. The minimum wage rate was increased from $2.70 an hour to $2.80 effective January 1, 1982 with a further increase to $2.95 scheduled for January 1, 1983. In addition, the maximum tip credit allowance permitted was changed from a dollar amount to 50 percent of the minimum wage.

California

Wages. Prior wage orders provided for an increase in the minimum hourly wage rate from $3.10 to $3.35 effective January 1, 1981.

Compensation of prison inmates for productive work in prisons was changed from a previous rate range of 2 cents to 35 cents an hour, to a rate not to exceed half the minimum wage.

The prevailing wage law threshold amount was increased from $500 to $1,000.

Ski establishment employers may arrange a regularly scheduled workweek of up to 56 hours without being in violation of overtime pay regulations, provided employees receive premium rates after 56 hours.

Equal employment opportunity. A new measure, effective in January 1982, established a policy of "comparable worth" in setting salaries based on value of work for women-dominated jobs in the State service. Also, the Department of Personnel Administration is to examine comparable worth studies done by other jurisdictions and make an annual report on them to the legislature, and to the exclusive bargaining agent of State employees prior to collective bargaining.

Compulsory retirement, otherwise prohibited for employees who wish to and can continue working, will be permitted for physicians who have attained age 70 and are employed by a professional medical corporation with bylaws on compulsory retirement.

The Fair Employment and Housing Commission was transferred from the Department of Fair Employment and Housing to the State and Consumer Services Agency. Under the same law, apprenticeship programs are no longer exempted from the prohibited age limitations in the age discrimination law.

Prohibitions on sex discrimination in employment may not affect the right of an employer to provide preferences for veterans and their surviving spouses. The law also prohibits the use of State funds to challenge this provision in court (an existing regulation provides that veterans preference may not be used as a basis for selection unless work performed during military service is related to job performance, except where required by a constitutional provision authorizing such preference in the civil service, or by Federal law). A similar new law also allows employers to give special consideration to Vietnam era veterans.

Worker privacy. The law prohibiting employers from compelling employees or applicants to take a lie detector or similar test, now requires the employer, before requesting that the test be taken, to advise the employee in writing of the prohibition against compulsion.

The Department of Justice was authorized to furnish records of convictions to nonprofit corporations or other organizations, as specified by the Attorney General, involving sex crimes of persons who apply for employment, or volunteers for positions involving supervisory or disciplinary power over minors.

Labor relations. Local public agencies and their unions may now negotiate agency shop agreements. Religious or conscientious objectors may alternatively be required to pay sums, equaling union fees, to a nonreligious, nonlabor, charitable fund.

A new law was enacted governing local public transportation labor disputes, except for those involving local public agencies subject to other collective bargaining legislation. It provides for the exchange of contract proposals and data between the parties and for mediation of disputes. Where a strike or lockout appears likely, the Governor may appoint a board to investigate the issues and make a written report. Any strike or lockout during the period of investigation is prohibited.

Garment industry. A late 1980 law requires all garment industry manufacturers, jobbers, and contractors to register annually with the State Labor Commissioner, beginning July 1, 1981, and to keep certain hour, wage, production, and contract price records. Failure to register or doing business with an unregistered contractor may result in penalties, including fines and garment confiscation.

Private employment agencies. Agents for professional athletes are now to be licensed and regulated by the Labor Commissioner. Agents must deposit a $10,000 bond and may not engage in certain practices.

Employment agencies which use a computer system as their only means of procuring employment for clients, are no longer limited to a nonrefundable fee of $20. However, the fee to be charged for furnishing such services must be clearly stated in the contract.

Employment and training. The Director of Corrections is authorized to conduct demonstration industrial enterprises for prerelease work training of inmates. Inmates may be paid wages prevailing in comparable industries in the State, and wage deductions may be made for room and board, the California Victim Indemnity Fund, family support, savings, and personal expenses.

A California Welfare Employment Skills Training Act, administered by the Employment Development Department, provides for a program to give Aid-to-Families-with-Dependent-Children recipients vocational training and job placement assistance, so they may acquire marketable job skills.

Under the provisions of a new law, unemployed parents who do not qualify for Aid-to-Families-with-Dependent-Children under Federal standards, but who qualify for the State program, are to receive priority for employment and training services under certain existing programs, and special pilot projects to provide on-the-job training are to be developed for these individuals. This act will become operative only if funds are made available by the legislature.

Other laws. State contracts are to contain a sworn statement by the contractor that no more than one final finding of contempt of court has been issued against the contractor within the last 2 years because of failure to comply with a Federal court order, enforcing a ruling of the National Labor Relations Board. In case of a false statement, the State may rescind the contract.

Public entities may not permit any peace officer to be employed by a private sector employer as a security guard at the site of a strike, lockout, picketing, or other labor dispute which occurs in the same jurisdiction where the peace officer is regularly employed or on loan.

Colorado

Wages. Payment bonds must now be furnished on public works contracts exceeding $50,000, rather than on those exceeding $10,000 as was previously required.

Equal employment opportunity. The Division of Correctional Industries was authorized to contract for the training or employment of offenders, with training to be in accordance with standards set by the Department of Labor and Employment whenever possible. Wages earned under the program are to be used to compensate the offender's victims, pay support to the offender's dependents, defray costs of confinement, and establish a trust fund for the offender payable upon release.

Occupational safety and health. Coal mine inspections need now be made only once rather than four times annually, and inspections will be made only of mines in which an average of less than 75 full-time workers were employed during the preceding calendar year. Mines of larger size are deemed to affect interstate commerce and therefore are subject to Federal inspection.

Connecticut

Wages. By prior law, the hourly minimum wage increased from $3.12 to $3.37 on January 1, 1981.

Child labor. Minors age 16 and 17 may now work until 11 p.m. (rather than 10 p.m.) on days preceding schooldays, in restaurants or as ushers in nonprofit theaters.

Equal employment opportunity. Prohibited discrimination on the basis of sex was defined to specifically include matters relating to pregnancy, child bearing capacity, sterilization, fertility, or related medical conditions. Employers must inform employees and job applicants of substances involved in the job which may cause birth defects or be hazardous to a worker's reproductive system or to a fetus. Employment, transfers, or promotions may not be conditioned on the sterilization of the employee.

Labor relations. The State Labor Relations Act was amended to provide that an agent investigating complaints or violations referred by the State Board of Labor Relations shall not disclose any confidential communication made during the investigation, unless authorized by the party making such communication. Similarly, mediators appointed by the labor commissioner are now subject to the same restrictions.

No private employer or employee organization, involved in a labor dispute, may hire any member of a municipal police department in the town in which the dispute is taking place, for protection or other duties related to the dispute.

Private employment agencies. The surety bond that each employment agency must post was increased from $5,000 to $7,500, and agency license fees increased from $75 to $150.

Occupational safety and health. Any employee who believes there is a violation of the information and notice requirements for employers using or producing carcinogens may now request an inspection by filing a written complaint with the Labor Commissioner who is authorized to investigate and to assess civil penalties for violations. Retaliation against an employee for filing a complaint is prohibited.

Employment and training. The Department of Labor was authorized to contract with local and regional boards of education to provide full-time programs for adult basic education for qualified Work Incentive Program registrants.

Other laws. A committee consisting of legislative, labor, management and municipal representatives was created to study all aspects of plant relocation and mass layoffs, and to make recommendations for legislation to reduce the hardships.

Delaware

Child labor. An 18- or 19-year-old child of a liquor store retailer may be employed in the store, except in the sale or service of liquors (20 is the minimum age otherwise applicable).

District of Columbia

Wages. Wage Order Number 12, applicable to occupations not covered by other wage orders, was revised effective October 31, 1981 to increase the minimum wage rate for parking attendants to $3.40 an hour, provided that at least 40 cents an hour is received in tips; for car wash attendants to $3.50 provided that at least 15 cents an hour is received in tips; for day labor ticket takers and ushers to $3.75; and for all other occupations from $2.75 an hour to $3.90.

Wage Order Number 10, applicable to hotel, restaurant, apartment building and allied occupations was also revised to increase the minimum hourly rate from $2.80 to $3.80, effective January 2, 1982. Among other changes, the maximum tip allowance against the minimum wage was increased from $1.45 an hour to $1.95, and the minimum hourly rate for employees under the age of 18 was raised from $2.25 to $3.35.

Florida

Agriculture. The law providing for the licensing and regulation of migrant labor camps, which was scheduled for repeal on July 1, 1982 under sunset legislation, was extended to October 1, 1983.

Child labor. Numerous changes were made in the child labor law. Employment certificate provisions for children age 12 through 15 were repealed. Age certificates are authorized for such children, as well as for 16- and 17-year-olds, although employers may accept other forms of proof of age. Children are no longer permitted to work during school hours in domestic work or farm labor for their own parents. Nightwork restrictions for 16- and 17-year-olds were relaxed to allow work until 1 a.m. on days preceding schooldays, although individual variances had been allowed before.

Waivers of the child labor restrictions may be granted by the Division of Labor, on a case-by-case basis, if in the best interests of the child. High school graduates, minors who have served in the Armed Forces, and legally emancipated minors are exempted from coverage. Also, married minors and those with court approved employment continue to be exempt.

Equal employment opportunity. The prohibition under the Human Rights Act, against mandatory retirement, will not apply where individual applicants fail to meet bona fide job requirements. Nor will it apply where employment would require changes in bona fide retirement or pension programs or existing collective bargaining agreements during the life of the contract or until October 1, 1983, whichever is first. Employers may require physical examinations of applicants and employees to determine job fitness.

Labor relations. The definition of public employees, for collective bargaining purposes, was amended to exempt persons in inspection positions in Federal-State fruit and vegetable inspection service, persons employed by the Public Employees Relations Commission, and graduate and undergraduate students enrolled and employed by the State University System.

Occupational safety and health. Among changes to the law regulating elevators, annual safety inspection is now required, except that those elevators covered by a safety maintenance contract must be inspected every 2 years.

Employment and training. A new Public Assistance Productivity Act provides for the Department of Health and Rehabilitative Services to plan, integrate, and coordinate employment related services for public assistance recipients, and directs it to help fund a privately administered demonstration pilot project designed to reduce welfare costs and provide viable work opportunities to AFDC recipients.

The Department of Corrections is to lease the facilities of the prison industry program to a private nonprofit corporation organized solely for the purpose of operating the program. Deductions are to be made from prisoner wages for lodging, food, and other maintenance expenses, and for payments to dependents and crime victims.

Georgia

Wages. Employee pensions subject to the Federal Employee Retirement Income Security Act of 1974 (ERISA) are subject to garnishment only for alimony or child support, and then only when the benefits are currently due and payable or transferable to the pension plan's member or beneficiary.

Child labor. The minimum age for employment was lowered from 14 to 12. Formerly children 12 and 13 were permitted to work only in stores (with permits) and in occupations exempt at any age—agriculture, domestic service, and family employment. Prohibitions on specific occupations for minors under 16 were removed, and the Commissioner of Labor was given rulemaking authority to declare occupations hazardous. Changes were also made in the certificate provisions.

Equal employment opportunity. The upper age limit in the ban on age discrimination in employment was raised from 65 to 70.

A new equal-employment-for-the-handicapped law prohibits discrimination based on physical or mental impairment (other than drug or alcohol addiction) which substantially limits normal function. The law applies to both public or private employers of 15 or more persons, labor organizations, employment agencies, and to apprenticeship and other training programs, and will be enforceable in the courts.

A 15-member Commission on Women's Opportunities was created to study statutes, regulations and agency practices, to determine whether any distinction, exclusion, or preference is made based on sex, affecting equal employment opportunities. A report and recommendations are to be made to the Governor and the Legislature prior to the 1983 legislative session. The Commission may not make a recommendation on the merits of the Equal Rights Amendment to the United States Constitution.

Veterans' services are to be provided for surviving spouses of veterans, rather than only to widows as before, and veterans' preference in employment in the State Department of Veterans Service was also extended to widowers of veterans.

Guam

Wages. The minimum wage rose to $3.35 an hour on January 1, 1981, under a prior law which adopted the Federal Fair Labor Standards Act rates by reference.

A Child Support Employment Office was established in the Department of Public Health and Social Services, and the courts were authorized to order garnishment of wages or pensions for child support.

Hawaii

Wages. By prior law, the minimum wage rate was increased from $3.10 to $3.35 an hour effective July 1, 1981.

Employment under the work release plan of a youth correctional facility may now be at a wage less than the minimum wage, provided that no more than five hours of a person's work week will be paid at the subminimum rate.

Equal employment opportunity. Employees of State and local government are now subject to the Fair Employment Practice law, and prohibition against sex discrimination was defined to specifically include discrimination because of pregnancy, childbirth, or related medical conditions. Investigation and enforcement authority and procedures are now spelled-out in greater detail.

House and Senate resolutions were passed expressing concern over inequities in the salaries of women, and urging all employers to adopt the concept of equal pay for work of comparable value.

Other laws. The protection against suspension or discharge from employment because of wage garnishment, employee bankruptcy, or work injury, was extended to include an employee's testimony or being subpoenaed to testify in proceedings relating to any such suspension or discharge.

Another law specifically prohibited discrimination against an employee, in addition to discharge or suspension, because of garnishment, employee bankruptcy, or work injury.

Illinois

Wages. The requirement in the wage payment act that an employer notify the State Department of Labor of the amount of wages to be withheld when the amount or legitimacy of the deduction is in dispute, was amended to require the employer to also state in writing the reasons for withholding payment.

Courts may require an assignment of wages to enforce an order for child or spouse support. Employers may not discharge or discipline an employee as a result of such an assignment.

Agriculture. Migrant labor camps housing fewer than 10 migrant workers or four families must now meet certain specified safety and health standards and be open to inspection by the Department of Public Health, although a license is not required.

Worker privacy. Local governments and school districts may obtain information on convictions from the Department of Law Enforcement for use in evaluating the character and qualifications of employees and job applicants.

Other laws. The identity of any State employee who reports the violation of any law, rule, regulation, or mismanagement, may not be revealed during an investigation, and no disciplinary action may be taken against the employee.

Indiana

Employment and training. The Department of Commerce is to establish an industrial training program to train and upgrade the skills of potential employees of new or expanding industries.

Iowa

Labor relations. The law requiring that official meetings be open to the public was amended. It now exempts meetings of governmental bodies held to discuss strategy, involving negotiations with employees not covered by collective bargaining agreements.

Louisiana

Wages. An individual may not be denied employment or discharged because of a voluntary or involuntary assignment of wages.

Child labor. School records will no longer be required as a prerequisite for the issuance of street-trades permits or certificates for the employment of minors under 16 outside school hours during the school term.

Private employment agencies. Among changes to the employment agency regulatory law, the Private Employment Service Advisory Council was reconstituted to include three representatives from the industry, and one representative each from labor and consumer interests.

Occupational safety and health. Reprisals were prohibited against employees who report or complain of possible environmental violations. For infraction of the ban, in addition to other available remedies, an employee may bring civil action against the employer to recover triple damages and court costs including attorney's fees.

Employment and training. The Occupational Information Coordinating Council and the Governor's State Employment and Training Council were transferred to the Department of Labor.

Other laws. A new law gives preference in the awarding of nonconstruction public contracts to in-State vendors, over vendors from those States which favor their resident vendors over those from Louisiana. Public works construction contractors have been protected by a similar law.

Maine

Wages. The minimum wage rate was increased to $3.35 an hour on January 1, 1981, under a prior law which provided for matching State increases to the Federal rate, up to a maximum $4 rate.

The minimum qualifying salary for exemption from the minimum wage law as an executive, administrative, or professional employee was increased from $150 to $175 a week.

The law permitting wage deductions to repay an employee's debt to the employer was restricted to a debt of benefit to the employee, and banned deductions for such items as cash or inventory shortages, dishonored checks or credit cards, damage to the employer's property, or merchandise purchased by a customer.

Hours. A law was enacted permitting State government employees to work alternative work schedules including flexible hours, part-time work, and job sharing.

Child labor. Nightwork restrictions were amended to permit 15-year-olds to work until 10 p.m., rather than 9 p.m. as before. The starting time of 7 a.m. was unchanged.

Equal employment opportunity. In an effort to expand work opportunities for handicapped citizens, the State Purchasing Law now permits giving preference to goods or services produced by in-State sheltered workshops.

Labor relations. Collective bargaining rights, previously granted to employees of municipalities, schools, and special districts, were extended to county employees.

An employer may not cancel a group health insurance policy during a strike until the insured employees have been notified.

Occupational safety and health. Penalties were established for refusing to comply with the requirement that information be provided to employees about the identities and hazards of chemicals in the work area by such means as labels, chemical identification lists, and education and training.

Other laws. The name of the Department of Manpower Affairs was changed to the Department of Labor, and the name of the Bureau of Labor was changed to Bureau of Labor Standards.

In addition to making severance payments to employees and notifying the Director of the Bureau of Labor 60 days in advance of relocating or terminating an establishment, employers of 100 or more persons must now also notify employees and municipal officers at least 60 days before relocating an establishment outside the State.

Maryland

Wages. The minimum wage rate rose to $3.35 to match the Federal rate under the existing State law which conforms to the Fair Labor Standards Act rate by reference.

Those agricultural employees who are subject to the State minimum wage are to be paid time-and-a-half their usual hourly wage rate for work after 60 hours per week.

Equal employment opportunity. Employment discrimination against public school teachers because of handicap was prohibited, unless the handicap adversely affects the person's ability to perform the duties of the position.

Private employment agencies. Private employment agencies whose fees are completely employer-paid and that do not require job applicants to sign a contract are not subject to the agency licensing and regulatory law.

Occupational safety and health. Temporary help firms may not permit their employees to work in confined spaces such as tanks, tunnels, vats, and sewers, without written authorization of the Commissioner of Labor and Industry based upon a satisfactory showing of adequate worker protection, or without an approved variance.

Employment and training. A State Use Industries Organization was established to develop industries to provide full-time work experience or rehabilitation programs for eligible prison inmates.

Massachusetts

Wages. The minimum wage rose to $3.35 an hour on January 1, 1981, under provisions of a 1977 amendment.

Child labor. An exception was made to the hazardous occupations restrictions on minors under 18, permitting 16-and 17-year-old minors to be employed, consistent with Federal law, if enrolled in State or local cooperative vocational training programs under specified circumstances. Formerly the exception applied only to agricultural training programs.

Equal employment opportunity. Conscientious objection to abortion may not be grounds for dismissal, discrimination in hiring, failure to promote, or withholding of pay.

A special commission was established to study the concerns of Vietnam era veterans, including government programs and practices relating to employment, re-employment, retraining, and rehabilitation.

Labor relations. Among various changes involving the Board of Conciliation and Arbitration, the Board is now an independent agency, composed of a permanent chairperson who is authorized to appoint one labor and one management representative to the Board on a case-by-case basis.

Michigan

Wages. By prior law, the minimum wage increased from $3.10 an hour to $3.35 on January 1, 1981.

Constitutionality of the prevailing wage law, which relies solely on collectively-bargained rates to determine prevailing rates, was upheld by the State Court of Appeals. The appellate court reversed a lower court decision which had held the statute to be an unconstitutional delegation of legislative authority because of its method of rate determination.

Child labor. A minor may not work after sunset or 8 p.m., whichever is earlier, in an occupation that involves a cash transaction, unless an adult is present.

Equal employment opportunity. Among changes to the civil rights act for handicapped persons, coverage was extended to the restored mentally ill; employers were specifically required to accommodate handicapped persons unless it would impose an undue hardship. A union may not, because of a member's handicap give inadequate representation in a grievance process. Public contracts for the State or political subdivisions must include a prohibition against discrimination because of a handicap that is unrelated to the individual's ability to perform a particular job, and the Civil Rights Commission was given rulemaking authority.

Other laws. A "whistleblowers' protection act" was passed, prohibiting reprisal against public or private sector employees who report, or are about to report, any violation of a State, local, or Federal law, or who participate in an investigation, hearing, inquiry or court action. An employer may not discharge, threaten, or otherwise discriminate against such an employee. The employee may bring a civil action for injunction or damages or both, and the court may order reinstatement, back pay, and other relief.

Coverage of the law on standards of conduct for State employees was amended to include elected or appointed officials. New protections from adverse actions for public officers or employees who report or are about to report violations were added, and provision was made for bringing civil action against violators.

Minnesota

Wages. By prior law, the minimum wage rose from $2.90 an hour to $3.10 effective January 1, 1981. A further increase to $3.35 is scheduled for January 1, 1982.

Employee payments for required uniforms, special clothing, equipment, and certain travel expenses are to be subtracted from wages paid in calculating whether minimum wage requirements are met.

Overtime pay requirements will not apply to employers of sugarbeet hand laborers who are paid on a piece-rate basis, provided that the regular hourly rate of pay exceeds the minimum wage rate by at least 40 cents. This provision was to expire December 13, 1981.

Agriculture. A new law requires employers using agents to recruit out-of-State migrant workers to provide each worker, at the time recruited, with a written employment statement of the minimum duration of employment, working conditions, wages, and housing provision if any. Workers are to receive a minimum of 70 hours pay, at no less than the Federal minimum wage, in any two consecutive weeks, unless work is unavailable due to weather conditions. Workers are also to receive a written pay statement itemizing deductions from wages. Workers may bring a civil action in case of violation.

Equal employment opportunity. Individuals may now file equal employment opportunity complaints directly in the district court instead of seeking prior administrative resolution, and the Commissioner of Human Rights was authorized to adopt policies to determine the order in which charges are to be processed. Reprisals against persons who have taken part in actions under this law were defined to include any form of intimidation, retaliation, or harassment.

The enforcement provisions of the Human Rights Act were amended. Penalty payments may now include damages for mental anguish and suffering, and the maximum award of punitive damages was raised.

Worker privacy. The law regulating the collection and dissemination of data by State agencies was amended to, among other things, classify labor relations information on specific labor organizations, as nonpublic data, and to permit the dissemination of personnel data to unions when it is determined that the information is needed for elections and other purposes.

Labor relations. The definition of public employee under the Public Employment Labor Relations Act was amended to exclude part-time instructors in adult vocational education programs.

An exception was made to the State open meeting law permitting public employers to hold closed meetings to determine strategy for labor negotiations. Such sessions must be tape recorded and must be available to the public after negotiations are completed and a contract signed.

Mississippi

Hours. Restrictions on hours of work for persons over age 16 were removed. Hours had been limited to 10 per day in canneries, workshops, mills, factories, or manufacturing establishments. Night workers had been limited to 60 hours per week.

The law which prohibited a female from working more than 10 hours a day or 60 hours a week was repealed.

Missouri

Wages. In January 1981, the State Supreme Court upheld the rate determination methodology, used by the Labor and Industrial Relations Commission under the prevailing wage act.

Hours. The maximum 8-hour day in any mining, mechanical, chemical manufacturing, or smelting business was amended to allow additional hours with the employee's consent.

Montana

Wages. The minimum wage was increased from $2.00 an hour to $2.50 effective July 1, 1981 with a further increase to $2.75 scheduled for July 1, 1982. The minimum amount that may be paid to seasonal farm workers on a monthly basis in lieu of the minimum hourly rate was increased from $460 to $575 a month on July 1, 1981, and to $635 a month beginning July 1, 1982.

The labor department was granted subpoena power to compel the production of payroll records in case of public contractor refusal. Also, bid specifications and contracts are now to include the prevailing wage rates that are to be paid. Failure to do so relieves the contractor of his obligation to pay the prevailing wage rate and places such obligation on the contracting agency.

Private employment agencies. The maximum placement fees charged by private employment agencies will no longer be regulated by statute, but will now be determined by the agencies themselves. These fees were specifically made not subject to disapproval by the Commissioner of the Department of Labor and Industry. Agents for professional athletes were specifically exempted from the employment agency regulatory law.

Nevada

Wages. The prevailing wage law was amended to exclude construction projects costing less than $4,000 as well as contracts directly related to the normal operation of the government agency or the normal maintenance of its property, and contracts awarded to meet emergency situations resulting from natural or man-made disasters.

Payment bonds must now be furnished on all public works contracts exceeding $5,000, rather than on those exceeding $2,000 as was previously required.

Employers may not discharge or take disciplinary action against an employee because of court ordered wage assignment for child support.

Equal employment opportunity. Discriminatory actions based on an employee's age will not be considered unlawful if the person is less than 40 or more than 69 years of age. Formerly there were no age limits in the law.

The ban against unlawful job discrimination was extended to cover the hearing impaired (in addition to visual or physical handicap and other bases). It is unlawful for an employer to refuse to permit a hearing impaired employee to keep a hearing dog with him or her.

The labor commissioner is authorized to approve and regulate 6-month to 2-year programs for training in actual employment for veterans in occupations which do not offer programs of apprenticeship. Such programs must comply with Federal and State equal employment opportunity laws.

Worker privacy. A separate polygraph examiners licensing and regulatory law was enacted. Formerly, polygraph examiners were regulated along with private investigators, patrolmen, process servers and repossessors. The new law gives the examinee the right to refuse to answer any question which would tend to incriminate or degrade him. The person to be examined must be told of the purpose of the examination and consent to it in writing. The examination must not be conducted for the purpose of interfering with or preventing lawful activities of organized labor. Inquiries into the examinee's religion, political or labor organization affiliations, or sexual activities are prohibited unless germane and made at the request of the examinee.

Public agencies may request information from the FBI on the personal history of any person who is an applicant for a license or employment.

Occupational safety and health. Among amendments to the occupational safety and health law, a notice may be issued (in lieu of a citation) in cases of violations which are not serious and which the employer agrees to correct within a reasonable time. Also, temporary variances from standards adopted under the law will no longer be granted. Employers may still apply for permanent variances.

A comprehensive statute was enacted to control the generation, transportation, treatment, storage, and disposal of hazardous waste, and a separate statute instituted controls over the transport and disposal of radioactive, chemical, and other hazardous materials.

New Hampshire

Wages. By prior enactment, the minimum wage rate rose to $3.35 an hour on January 1, 1981 to match the Federal rate.

Equal employment opportunity. The Commission on the Status of Women which was to be terminated on July 1, 1981, under sunset legislation, was extended to July 1, 1987.

Occupational safety and health. The law regulating the management of hazardous wastes was amended to, among other things, require permits to transport such materials, and to prohibit employers from retaliating against employees for reporting violations as required by law.

The State Civil Defense Agency was directed to initiate and carry out a radiological emergency response plan for each nuclear electrical generating plant, in order to deal with the effect of nuclear incidents or accidents.

New Jersey

Wages. The minimum wage rate was increased from $3.10 an hour to $3.35 effective January 1, 1981. The rates for minors, whose minimum wage coverage is derived from wage orders rather than statute, were also increased to $3.35, without any youth differential based on age alone.

A New Jersey Building Authority was established to construct and operate office buildings and related facilities to meet the needs of State agencies. The Authority is to pay prevailing wage rates, as determined by the labor commissioner, to workers employed on its construction projects, and is to establish an affirmative action program for the hiring of minority workers.

Child labor. Activities of 16-to 18-year-olds in any Junior Firemen's Auxiliary were specifically exempted from hazardous occupation restrictions in the child labor law. (Junior firemen cannot be required to perform duties exposing them to the same degree of hazard as regular members of a volunteer fire company). Restrictions on employment of minors under 16 in theatrical productions were eased.

Equal employment opportunity. The law against discrimination in employment was amended to include discrimination on the basis of a person's atypical hereditary cellular or blood trait, including sickle cell, cystic fibrosis, or Tay-Sachs.

Private employment agencies. Temporary help service firms are no longer subject to the private employment agency regulatory law, provided that no fee is charged any employee. Such firms may not prevent employees from accepting other employment, or knowingly send employees to places where strikes or lockouts are in progress.

New Mexico

Wages. By prior law, the minimum wage rate was increased from $2.90 an hour to $3.35 effective July 1, 1981. The farm rate rose to $3.10 on July 1, 1981, with a further increase to $3.35 scheduled for July 1, 1982.

School attendance. A minor may be excused from compulsory school attendance at age 16, with parental consent, if he or she will be employed or engaged in an alternative form of education. Formerly the child could leave school on completion of the 10th grade, at whatever age, after a consultation between child, school officials, and parent, with no employment or other education requirement.

Other laws. The Human Rights Commission, the Labor and Industrial Commission, and the Office of Labor Commissioner, scheduled for termination under sunset legislation, were extended to July 1, 1987.

New York

Wages. By prior law, the minimum wage rate for nonagricultural workers was increased from $3.10 an hour to $3.35 on January 1, 1981.

The wage payment law was amended to require employers to notify employees of the company policy on sick leave, vacation, personal leave, holidays, and hours, through written or posted notice.

Employers must have the advance written consent of an employee before depositing his or her pay directly in a bank or other financial institution.

The labor commissioner, rather than the fiscal officer, will now determine the rate of interest to be imposed by orders directing the payment of wages or supplements, found to be due under the minimum wage act or the wage payment law.

Labor relations. Provisions in the civil service law for mediation and arbitration of collective bargaining disputes by the Public Employment Relations Board, due to expire July 1, 1981 were extended for 2 years.

Garment industry. A Garment Industry Job Retention Act was enacted, directing the Industrial Commissioner to study the garment manufacturing industry and the industrial homework process, including the feasibility of registration or licensing and bonding of employers in the garment industry. The study will also deal with labor standards practices and violations, and the adequacy of health and safety conditions. An advisory committee on garment manufacturing will be appointed to assist in the study, consisting of representatives of a cross section of the industry. Enforcement authority and penalty provisions were strengthened in the industrial homework law.

Occupational safety and health. The transportation law and the vehicle and traffic law were amended regarding the regulation of the transportation of hazardous materials. Rules and regulations are to cover transportation by highway, railroad or water, and are to be no less protective than those established by the Federal government. Hazardous materials were defined, training and education programs are to be established, and penalties were established for violation.

Employment and training. A pilot project to improve and expand employment opportunities for senior citizens through job development and placement efforts was established, to be implemented and administered by the Industrial Commissioner of the Department of Labor, in consultation with the Director of the State Office for the Aging.

Other laws. Contractors engaged in performing work or services, or providing goods to the State in an amount exceeding $5,000 are prohibited from participating in an international boycott in violation of Federal law. Contracts will not be let to contractors who have previously participated in such boycotts.

North Carolina

Wages. The minimum wage rate was increased from $2.90 an hour to $3.10 effective January 1, 1982 with a further increase to $3.35 scheduled for January 1, 1983. The law will now be applicable to employers of three or more rather than four or more as before.

Among other amendments to the wage and hour act, the subminimum wage rate for full-time students, learners, apprentices, and messengers will now be 90 percent of the basic minimum rate rather than a fixed dollar amount. Also, changes were made in some of the wage deduction provisions, and in the exemptions from minimum wage, overtime, youth employment, and record-keeping requirements.

Hours. A work-options program for State employees providing for flexible work hours, job sharing, and permanent part-time positions was established, to be administered by the State Personnel Commission.

Child labor. Among various changes in the youth employment law, youths 14-and 15-years of age may now be employed only in occupations permitted under the Fair Labor Standards Act (FLSA). Minors under 18 are still prohibited from working in occupations declared hazardous under FLSA. However, now the Commissioner of Labor may, after public hearing, declare additional occupations to be prohibited. Youths under 18 may not prepare or serve alcoholic beverages and youths under 16 may not be employed on the premises where such beverages are served. FLSA-covered employers, who have been exempt from all but the certificate provisions, will be subject to the prohibitions on occupations declared detrimental by the Commissioner and to the alcoholic beverage restrictions.

Worker privacy. The law restricting the dissemination of information contained in city and county personnel records was amended to, among other things, authorize the release of information concerning specific personnel actions when it is determined in writing that the release is essential to maintaining public confidence in the administration of city or county services.

Labor relations. A new law was enacted prohibiting strikes by public employees.

Any State employee may voluntarily authorize, in writing, dues deductions for membership in a State employee's association, provided the association has at least 5,000 members and does not engage in collective bargaining.

North Dakota

Wages. Among other rights, persons with developmental disabilities performing labor of economic benefit for a public or private institution from which they are receiving treatment or other services, are entitled to receive wages commensurate with the value of the work performed and in accordance with applicable Federal and State laws.

Employees may not be discharged because their wages have been garnished for any reason (a prior law provides for protection against discharge as the result of wage assignment for child support payments). Also, wage garnishment for support payments will now be limited to 50 percent of disposable earnings if another spouse or child is being supported or 60 percent if not.

Court-ordered wage assignments and orders to withhold wages for child support payments are now subject to the limitations on withholding set by Federal law.

Ohio

Private employment agencies. Among several changes in the Private Employment Agency Licensing Law, maximum placement fees for jobs paying less than $13,000 annually are now set by statute. Registration fees were banned, restrictions designed to prevent misleading advertising were tightened, contracts with job applicants must be in writing, and placement fees must be refunded under specified circumstances.

Other laws. An employer may not discharge or threaten to discharge any permanent employee who is summoned for jury duty and who gives reasonable advance notice.

As part of a comprehensive surface mining control act, employers are prohibited from retaliating against employees filing a complaint or participating in any proceedings under the law.

Oklahoma

Wages. Among amendments to the prevailing wage law, Federal Davis-Bacon rates will now be used where available, a new procedure was adopted for rate determination in the absence of such rates, a Wage Appeals Board was established, and fringe benefits were added to the definition of a prevailing hourly rate of wages.

The required posting of a wage payment bond by coal mine employers was repealed.

Equal employment opportunity. The Civil Rights Act was amended to add discrimination because of handicap to the list of unfair employment practices. Such discrimination is prohibited unless the action is related to a bona fide occupational qualification. Handicapped person was defined to mean a person who has a physical or mental impairment which substantially limits the person's major life activities, has a record of such an impairment, or is regarded as having the impairment.

Labor relations. Principals and assistant principals in school districts with an average daily attendance of 15,000 or more will now constitute a separate entity for purposes of collective bargaining. An average daily attendance of 35,000 was previously required.

Other laws. A new law permits municipal employees to participate in political activities during off-duty hours if not in uniform, and if not prohibited from doing so by a Federal statute or municipal charter. Municipal corporations may establish employment requirements prohibiting employees from filing as a candidate for public office while employed by the municipality.

Oregon

Wages. As provided in a prior law, the minimum wage rate was increased from $2.90 an hour to $3.10 effective January 1, 1981.

The Wage and Hour Commission may no longer set a subminimum wage rate for persons over 65 years of age. Also, authority to adopt rules prescribing procedures and requirements for issuance of special certificates authorizing employment of student-learners at subminimum wages was transferred from the State Board of Education to the Commissioner of the Bureau of Labor and Industries.

Among other changes in the prevailing wage law, the labor commissioner may now seek an injunction against employers to prevent future failure to pay the prevailing wage or overtime pay. Awarding agencies must notify the labor department of contracts which are subject to the law. And the commissioner may take Federally-determined rates into consideration as part of the rate determination process. Also, once a public works contract is executed, the prevailing wage rate will not be subject to attack in any legal proceeding, and an employer-employee agreement cannot serve as a defense for paying less than the prevailing wage.

Agriculture. The labor commissioner or any person may seek an injunction to prevent the use of unlicensed farm labor contractors or to prevent anyone acting as a contractor from violating the law. Up to triple the $5,000 bond on deposit may now be required of license applicants with previously unsatisfied judgments. Workers must be furnished the names and addressess of owners of operations where they will be employed, and a notice of the existence of any labor dispute at the worksite. In addition, with each wage payment, they must receive a statement of hours worked and rate of pay, or, if on piece rate, rate of pay and pieces done.

Child labor. Nightwork restrictions were removed for children under age 16 employed under a special permit issued by the Wage and Hour Commission. Formerly, the permit prohibited work before 7 a.m. and after 10 p.m. (children without special permits may not be employed before 7 a.m. or after 6 p.m.).

A civil penalty of up to $1,000 may be imposed for each violation of the child labor law by employers who are not subject to FLSA. The penalties are payable to the labor commissioner, to be used for reimbursement of enforcement costs.

Equal employment opportunity. The maximum age for protection from age discrimination was increased from 65 to 70, and an amendment prohibits employment agencies from discriminating on any covered basis in classification or referral for employment except in the case of a bona fide occupational requirement.

The Vocational Rehabilitation Division or the Commission for the Blind may refer severely handicapped persons as applicants for vacancies in the State service. Such persons must be interviewed provided they meet the standards necessary to qualify for the position. The Personnel Division is to maintain a record of all handicapped individuals hired, and the Vocational Rehabilitation Division is to submit an annual statistical report on the employment progress of severely handicapped persons, along with recommendations for legislative action.

All State boards, commissions, and advisory bodies are to implement the State's policy of being a leader in affirmative action in making appointments. State agencies must submit their affirmative action objectives and performance to both the governor and legislature for review. They must also rate the effectiveness of managers in achieving affirmative action objectives.

Worker privacy. The Department of State Police may now make criminal offender information available to employers for employment purposes, provided the employer has first advised the employee or prospective employee that such information might be sought.

The law prohibiting employers from requiring a lie detector test as a condition of employment was expanded to include a breathalyzer test to detect the presence of alcohol. However, employers may require administration of such a test by a third party if there are reasonable grounds to believe the individual is under the influence of alcohol.

Occupational safety and health. The Director of the Workers' Compensation Department may require any public or private sector employer of 10 or more employees to establish and administer a safety committee if the employer has a rate of lost workday cases greater than that consistent with reasonable workplace health and safety for employees of that particular occupational classification.

The Workers' Compensation Department may not issue or enforce any occupational safety and health rules or standards with respect to farms on which temporary labor camps are not maintained and on which no more than 10 workers are employed, except that inspections and enforcement proceedings may be conducted in response to complaints relating to an accident, or relating to the issuance of a citation.

All amusement rides must be inspected annually by the Department of Commerce or a certified amusement ride inspector.

New procedures and requirements were enacted governing the transportation of hazardous materials within the State. A permit must be obtained to transport any material. Provision was made for requirements for notification, record keeping, reporting, packaging, and emergency response, and a civil penalty may be assessed by the circuit court upon complaint of any person injured by a violation of the law.

Private employment agencies. Agencies no longer must enter into written contracts with job applicants and prepare written job referrals for placements in which the employer pays the fee. The exemption from the law from employer-paid fee agencies now applies if no referrals are made to positions paying less than $50,000 per year instead of $30,000 as before.

Other laws. Employers are prohibited from discharging, demoting, suspending, or otherwise retaliating against an employee who has in good faith reported possible violations of the laws regulating health care and residential facilities.

Employers may not restrict access by authorized persons, including government officials, to any employer-provided employee housing, but may adopt reasonable rules concerning use and occupancy, including hours of access. Retaliation is prohibited against employees who report violations or confer with or invite to residential areas any authorized or otherwise invited person.

Pennsylvania

Wages. By previous enactment, the minimum wage was increased from $3.10 an hour to $3.35 effective January 1, 1981.

Rhode Island

Wages. As provided for in a prior law, the minimum wage rate was increased from $2.90 an hour to $3.10 effective July 1, 1981 with a future increase to $3.35 scheduled for July 1, 1982.

State overtime pay requirements no longer apply to motor carrier employees whose maximum hours of work are regulated under the Federal Motor Carriers Act.

Guaranteed daily pay was reduced from 4 hours to 3 for employees who report for duty with the employer's permission but who are not furnished work of that duration.

Violators of the prevailing wage law will not be allowed to bid on or be awarded any public works contract for a period of 18 months.

The wages of State and local government employees are now subject to garnishment. Retirement benefits and contributions will be exempt.

Hours. The law governing required meal periods was extended to men in addition to women and children as before.

Equal employment opportunity. Back pay, in cases where unlawful employment practices are found, was defined to include the economic value of all benefits and wage increases an employee would have been entitled to had an unfair employment practice not been committed.

Discrimination in employment will now be prohibited based on mental impairment as well as physical handicap. The definition of handicap was amended to refer to physical or mental impairment which substantially limits major life activities.

Labor relations. The law giving certified public school teachers the right to organize and bargain collectively was amended to specifically include certified support personnel whose positions require a professional certificate issued by the State Department of Education. Supervisors above the rank of assistant principal are excluded from coverage.

Other laws. A number of State agencies scheduled to be abolished between June 30, 1981 and June 30, 1985, under prior sunset legislation, were continued, including the Labor Relations Board, the Governors Committee on Employment of the Handicapped, the Apprenticeship Council, and the Commission for Human Rights.

South Carolina

Labor relations. Amendments to the public-sector law, relating to permissible payroll deductions for contributions to eligible charitable organizations and credit unions, were made specifically inapplicable to deductions for labor organizations.

Private employment agencies. Licensing and enforcement under the employment agency law were removed from the Department of Labor, and administrative authority to issue rules and regulations, conduct investigations and hearings, suspend and revoke licenses, and levy fines, was deleted. Licenses will now be issued by the Secretary of State, and enforcement is by court action.

South Dakota

Wages. Parents may be directed to pay a specific portion of wages indirectly, from the parent's employer to the entitled child, in child support cases.

Private employment agencies. The law providing for the licensing and regulation of private employment agencies was repealed.

Employment and training. The Department of Social Services was directed to develop a workfare program to provide useful public service work for unemployed individuals who receive public assistance. Refusal to participate can result in the termination of aid.

Tennessee

Wages. Courts may require an assignment of wages as part of an order to enforce child support, and employers may not discharge or discipline an employee on the basis of the wage assignment.

Equal employment opportunity. Handicapped applicants for State employment who are certified as unable to take a written examination, may instead be given a work-test period during their normal probation time.

Labor relations. The law governing payroll deductions for employee association dues for State employees was amended. Among other things, it now provides that a State employee who participates in, authorizes, or encourages a work stoppage will be guilty of gross misconduct, and will permanently forfeit the automatic deduction of membership dues previously authorized.

Other laws. The prohibition against Sunday employment was repealed.

Texas

Agriculture. Licensing requirements for labor agents were amended to exclude farm labor contractors registered under the Federal Farm Labor Contractor Registration Act.

The use of short handled hoes in performing agricultural labor in commercial farming operations was prohibited, with the exception of work in greenhouses or nurseries.

Child labor. Effective January 1, 1982, the existing child labor law will be replaced by a modernized law with several new features. Fourteen will be the basic minimum age for employment, with certain exceptions. Exempt employment includes newspaper delivery, agricultural employment when school attendance is not required, casual employment with parental consent, parent-supervised work in a family business, and work study participation. The labor commissioner will be required to declare occupations hazardous for minors under 18. Other new provisions relate to hours of work restrictions, age certificates, and granting the labor commissioner authority for rulemaking, inspections, and the issuance of variances in hardship cases.

Equal employment opportunity. Examiners in the public or private sector who are testing handicapped adult job applicants may use alternate forms of testing, including any procedure or adaptation to help ensure the applicant's best performance possible, including oral or visual testing, use of readers or tape recorders, removal of time limits, and use of multiple testing sessions.

A Committee on Purchases of Products and Services of Blind and Severely Disabled Persons was established, to facilitate the purchase by State agencies and political subdivisions of goods and services produced by handicapped individuals. The committee is authorized to adopt procedures, practices, and standards used for similar Federal programs.

Worker privacy. Limitations were placed on the disclosure of information obtained from a polygraph examination, and new penalties were enacted in the event of violation.

A school district may obtain the criminal history record of any applicant for employment from any law enforcement agency, provided it has written authorization from the applicant.

Occupational safety and health. Effective January 1, 1983, all State, county, and municipal full-time paid firefighters must be provided with protective clothing meeting minimum standards, and as of January 1, 1982, all self-contained breathing apparatus must be approved and certified, and tested at least every 30 days.

Other laws. The right of employees to attend a precinct convention of a political party without penalty was extended to include any county, district, or State convention to which the employee is a delegate. Employees need not be paid for any such time lost.

Utah

Wages. An increase in the minimum wage to $2.75 an hour, authorized by a 1978 administrative action, took effect on January 1, 1981, for the retail trade, public housekeeping, restaurant, laundry, cleaning, dyeing, and pressing industries in Salt Lake, Weber, Utah, and Davis counties, and in all cities with populations of 5,000 or more. The minimum wage for other areas was raised to $2.50 an hour.

The prevailing wage law was repealed, over the governor's veto. A similar measure in 1979 was defeated when the governor's veto was sustained.

The $400 limitation on wage claims considered preferred debts of a business in receivership was raised to $1,000, and the Industrial Commission may now award reasonable attorney's fees in addition to amounts due for wages.

Equal employment opportunity. Authority was given the Director of the Department of Finance to contract with various veteran's organizations to provide assistance to veterans, and their widows and children, especially those in the outlying areas of the State, by disseminating information on veteran's rights and benefits under State or Federal laws, on employment or reemployment of veterans, on preference for employment, and on emergency relief.

Worker privacy. The polygraph regulatory law governing use of equipment, and licensing of examiners was expanded to apply to all deception detection instruments, including voice stress devices. All instruments must have prior approval of the Department of Public Safety, and additional safeguards were prescribed to protect the subject. Denial or termination of employment may not be based on refusal to submit to any such examination.

Employment and training. The State Apprenticeship Council will permit apprentices to substitute prior educational experience in a trade for supplemental instruction if the apprentice passes an equivalency test administered by an accredited school.

Vermont

Wages. By prior law, the minimum wage rate was raised to $3.35 an hour effective January 1, 1981.

Equal employment opportunity. The anti-discrimination law was amended to prohibit discrimination in employment based on age (18 or older), or for physical or mental condition. A separate provision which had provided some limited protection for physically handicapped persons was repealed. Mandatory retirement because of age is prohibited, except under a police or firefighter retirement system, and except that institutions of higher learning may retire a tenured employee at age 65 (70 after July 1, 1982).

Employment and training. The name of the Department of Employment Security was changed to the Department of Employment and Training, and a new Comprehensive Employment and Training Office was created within it. The new office will provide job training and employment opportunities for economically disadvantaged, unemployed, or underemployed persons through a system of Federal and State programs, serving as a prime sponsor in accordance with the Comprehensive Employment and Training Act, so long as Federal funding continues.

Virginia

Child labor. Minors participating in the activities of a volunteer rescue squad were exempted from the child labor law.

Labor relations. Collective bargaining contracts entered into by the Washington Metropolitan Area Transit Authority must hereafter prohibit strikes or lockouts. Binding arbitration to settle a bargaining impasse was replaced with procedures for mediation, and if mediation is unsuccessful, for advisory fact finding.

Occupational Safety and Health. The owner or operator of a company constructing a shaft or slope coal mine is now required to provide classroom and on-the-job training for workers hired on or after July 1, 1981, who have not had previous training or comparable experience in similar mine construction work.

Internal combustion engines will no longer be permitted underground in any coal mine. They were previously allowed with the written approval of the Chief of the Division of Mines.

Employment and training. The Apprenticeship Council was transferred to the Department of Labor and Industry.

Other laws. An employer may not discharge a person summoned to serve on jury duty, nor require the employee to use sick leave or vacation time, provided the employer was given reasonable notice of the summons.

Virgin Islands

Wages. As the result of a wage order, effective in 1979, the minimum wage rate was automatically increased from $3.10 an hour to $3.35 on January 1, 1981 for non-tipped employees. A few individual occupational rates, established under earlier wage orders, which are higher than the $3.35 rate remain in effect. The minimum rate for most agricultural employees rose from $2.87 to $3.17.

Washington

Wages. For public works contracts over $10,000, contractors must now post at the job site a copy of a statement of intent to pay prevailing wages, a copy of the rates determined for each classification of workers, and the address and telephone number of the Industrial Statistician of the Department of Labor and Industries where complaints or inquiries may be filed.

The exemption from wage garnishment was amended to now include any amount that is exempt under Federal law in addition to the prior exemption prescribed by State law, whichever is greater.

Equal employment opportunity. The Department of Employment Security is to conduct employer awareness seminars to ensure private-sector employer knowledge and support for veterans' employment programs. At least one seminar is to have direct impact upon incarcerated veterans.

West Virginia

Wages. The minimum wage rate was increased from $2.75 an hour to $3.05 effective January 1, 1982, and certain employees of the legislature were exempted from coverage of the law.

The wage payment and collection law was extended to include fringe benefits in the same manner as wages. Employers are to pay wages and fringes within 5 days after they are due instead of 20 days before. Also, wage payment bonds will be required of all employers engaged in construction work or mining except for those who have been doing business in the State for at least 5 consecutive years. The Commissioner of Labor may waive or terminate the bond requirement upon determining that an employer is of sufficient financial responsibility to pay wages and fringe benefits.

Child labor. Children age 16 to 18 may work for volunteer fire departments if they have the proper training and written parental consent. They are not to operate fire-fighting vehicles, enter a burning building, or engage in other dangerous activities unless under the immediate supervision of a fire line officer.

Equal employment opportunity. The Human Rights Act was amended to prohibit discrimination in employment, public accomodations, and housing on the basis of handicap, in addition to blindness, the only previous prohibition.

A new law prohibits forced retirement prior to age 70 of college or university professors with unlimited tenure.

Occupational safety and health. The Commissioner of Labor is to establish and maintain a list of up to 600 chemical substances and materials which have been determined or are suspected to be hazardous or toxic to the health of employees. Employers of ten or more are to post a warning notice in the work area where any such substance or material is used, and all employers are to report incidents of over-exposure by employees within 10 days. The law does not apply to coal mining or processing or any agricultural or horticultural activity.

A Hazardous Waste Management Act was passed to provide for regulation of the storage, transportation, treatment, and disposal of hazardous waste by the Department of Natural Resources.

Coal mine operators must develop and submit for approval of the Director of the Department of Mines, under regulations to be established, a comprehensive safety program for each mine. Employees of each mine must be given a chance to review the plan and submit comments to the Director before its submission.

All surface mine employees must now wear approved safety helmets when working in areas of possible danger of head injury, unless operating machinery with adequate cab protection.

Other laws. The Department of Labor, scheduled to terminate on July 1, 1981 under sunset legislation, was continued until July 1, 1987.

Wisconsin

Wages. By prior administrative action, the nonfarm minimum hourly wage rate was increased from $3 to $3.25 effective January 1, 1981. The farm rate was increased from $2.80 an hour to $3.05.

Wyoming

Wages. Employees whose payroll records are maintained outside the State and who quit or are discharged must now be paid within 72 hours of termination instead of 48 hours as before.

Assignment of up to 25 percent of a parent's earnings is permitted in cases where support payments are more than 60 days overdue. The employer may deduct an additional $2 for each payment made for costs incurred in administering the assignment. An employee may not be discharged because of the assignment.

Private employment agencies. Placement services of the University of Wyoming were specifically exempted from the private employment agency regulatory law.

Occupational safety and health. Controlled substances and persons under their influence are now banned in or around mines, aside from the previous ban on liquor.

The Department of Fire Prevention and Electrical Safety, scheduled to be abolished on July 1, 1981, under sunset legislation, was continued for 6 years. □

FOOTNOTES

[1] Unemployment insurance and worker compensation are not within the scope of this article. Separate articles will appear on each of these subjects in forthcoming issues of the *Monthly Labor Review*.

[2] Kentucky was the only State where the legislature did not meet in 1981. Sessions were held in Idaho, Kansas, Nebraska, and Puerto Rico, but no significant labor legislation was enacted in the concerns covered by this article.

Research Summaries

Reconciling the CPI and the PCE Deflator: an update

JULIE A. BUNN AND JACK E. TRIPLETT

In an article in the September 1981 issue of the *Monthly Labor Review,*[1] a technique was developed for determining the effect of differences in index number construction on the measurement of inflation. The technique permits a straightforward reconciliation of the Federal government's two major inflation measures—the Consumer Price Index (CPI), published by the Bureau of Labor Statistics, and the Implicit Price Deflator for Personal Consumption Expenditures (PCE Deflator), produced by the Bureau of Economic Analysis. This update advances the reconciliation to the third quarter of 1981.

Differences between movements in the CPI and PCE inflation measures can be attributed to three factors: owner-occupied housing, different index weights, and "all other" factors. By comparing alternative versions of the indexes published by the Bureau of Labor Statistics and the Bureau of Economic Analysis (the Federal Government currently publishes ten aggregate consumption expenditure price measures), the difference between the CPI and PCE measures can be decomposed into these three categories.

For technical reasons, two reconciliations are necessary.[2] The first reconciliation addresses the question: "What are the reasons the CPI and PCE price measures show different rates of change from one period to the next?" The second answers the question: "What accounts for the cumulative divergence in the CPI and PCE measures since 1972?"

Reconciling period-to-period changes

Table 1 shows the reconciliation of period to period percent changes in the Consumer Price Index for All Urban Consumers (CPI-U) and "PCE: Chain-Weight" index. The Implicit PCE Deflator, a Paasche-formula index, cannot be used for this reconciliation because Paasche formulas lend themselves to statistical interpretation only when referring back to the base year (in this case, 1972).[3]

In most recent quarters, the CPI-U has recorded a greater price change than the "PCE: Chain-Weight" index. The difference between the two seems to be diminishing from the historically high values of 1979–80. The exception to this statement occurs in the third quarter of 1981, in which the difference between the two surged to 3.3 percentage points.

In nearly every case, the treatment of owner-occupied housing accounts for most of the difference between the CPI and PCE price measures. For example, alternative treatments of housing accounted for 3.1 percentage points of the total 3.3 point differential in 1981's third

Table 1. "Reconciliation" of annual and quarterly percent changes in the CPI-U and the Personal Consumption Expenditure price measures, 1979–81

Difference	1979	1980	1980[1, 2]				1981[2]		
			I	II	III	IV	I	II	III
CPI-U[3]	11.3	13.5	16.5	13.1	7.7	12.9	10.8	7.5	12.0
PCE: Chain-Weight[4]	9.3	10.6	12.5	9.7	9.5	10.1	10.3	6.5	8.7
Total difference[5] (CPI-U minus PCE: Chain-Weight)	2.0	2.9	4.0	3.4	-1.8	2.8	0.5	1.0	3.3
Housing treatment[6]	1.7	2.3	3.2	3.2	-1.9	2.2	0.0	0.2	3.1
Weighting effect[7]	0.3	0.4	0.7	0.2	0.0	0.0	0.6	0.0	-0.5
"All other" effect[8]	0.0	0.2	0.1	0.0	0.1	0.6	-0.1	0.8	0.7

[1] Owing to changes in seasonal adjustment factors, the 1980 quarterly figures may differ slightly from those which appeared in table 3, p. 9, in the September 1981 *Monthly Labor Review*.

[2] Seasonally adjusted annual rates.

[3] Annual and quarterly changes in the CPI-U are taken from tables provided by the Office of Prices and Living Conditions, Bureau of Labor Statistics (BLS). The changes are compiled from 1967 based indexes.

[4] Data for the "PCE: Chain-Weight" were obtained from the Bureau of Economic Analysis (BEA), U.S. Department of Commerce. The data incorporate revisions released by BEA in April 1981.

[5] CPI-U minus "PCE: Chain-Weight" equals the sum of "housing treatment", "weighting" and "all other" effects.

[6] Change in CPI-U minus change in CPI-X1. See September 1981 *Monthly Labor Review*, p. 21, for fuller explanation. Source of CPI-X1 data is same as footnote 3.

[7] Change in "PCE: 1972-Weight" minus change in "PCE: Chain-Weight". See September 1981 *Monthly Labor Review*, pp. 8-9, for fuller explanation. Data source for "PCE: 1972-Weight" changes is same as for footnote 4.

[8] Change in CPI-X1 minus change in "PCE: 1972-Weight". See September 1981 *Monthly Labor Review*, p. 6, for fuller explanation.

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quarter, and in quarters in which the total difference between the two price measures was low (1980–III, 1981–I, 1981–II), so was the housing effect.

Note we estimated the housing treatment effect by comparing the two BLS indexes which are published monthly and which have different treatments of housing. In October, the BLS announced plans to change the treatment of housing to more nearly approximate a rental equivalence treatment in the CPI-U index, beginning in January 1983.[4]

Weighting effects have behaved erratically and unpredictably over recent quarters. Generally, one expects that the longer the interval between weights, the greater the weighting effect in the price index. This expectation has been true of most CPI-PCE comparisons in the past.[5] However, the size of the weighting effect became noticeably smaller in the last half of 1980, and except for the first quarter of 1981, has contributed very little to CPI-PCE differences for over a year. In 1981 III, the index with 1981 weights (actually 1981 II weights) showed higher inflation than did the index with 1972 weights, so the weighting effect was negative (minus 0.5 percentage points), a surprising result.

"All other" factors are the sum total of computational and compilation differences in which the CPI and PCE indexes differ (that is, everything other than the period for which the weights were drawn, and the treatment of owner-occupied housing). The "all other" effect has typically been small in the past.[6] The precise source of the "all other" effect has not been identified, but seasonal adjustment methods undoubtedly are important.

Table 2. "Reconciliation" of the CPI-U and the Personal Consumption Expenditure price measures: cumulative percent change from 1972 to the date shown (1979–81)

Difference	1979	1980	1980[1] I	1980[1] II	1980[1] III	1980[1] IV	1981 I	1981 II	1981 III
CPI-U (1972=100)[2]	173.6	197.0	189.3	195.3	199.0	205.1	210.4	214.3	220.4
PCE Deflator (1972=100)[3] (Current-Weight)	162.3	178.9	172.9	177.0	180.7	184.9	188.5	191.5	195.7
Total difference[4] (CPI-U minus PCE Deflator)	11.3	18.1	16.4	18.3	18.3	20.2	21.9	22.8	24.7
Housing treatment[5]	7.0	11.7	10.6	12.3	11.8	13.1	13.3	13.7	15.5
Weighting effect[6]	3.7	5.4	4.9	5.1	5.6	5.9	7.3	7.4	7.1
"All other" effect[7]	0.6	1.0	0.9	0.9	0.9	1.2	1.3	1.7	2.1

[1] Owing to changes in seasonal adjustment factors, the 1980 quarterly figures may differ slightly from those which appeared in table 4, p. 10, in the September 1981 *Monthly Labor Review*.

[2] Annual data for the CPI-U were computed by the Office of Research and Evaluation (BLS) from unadjusted monthly data provided by the Office of Prices and Living Conditions (BLS). The quarterly data for 1980 and 1981 were computed by the Office of Research and Evaluation employing seasonally adjusted monthly data provided by the Office of Prices and Living Conditions.

[3] Data for the Implicit PCF Deflator, or "PCE: Current-Weight" index, were provided by the BEA. The data incorporate revisions released in April 1981.

[4] CPI-U minus PCE Deflator equals the sum of "housing treatment", "weighting" and "all other" effects.

[5] CPI-U minus CPI-X1. See September 1981 *Monthly Labor Review*, p. 5, for fuller explanation. Data source for the CPI-X1 is the same as footnote 2.

[6] "PCE: 1972-Weight" minus "PCE: Current-Weight". See September 1981 *Monthly Labor Review*, p. 6, for fuller explanation. Data source for the "PCE: 1972-Weight" is same as footnote 3.

[7] CPI-X1 minus "PCE: 1972-Weight". See September 1981 *Monthly Labor Review*, p. 6, for fuller explanation.

Table 3. Relative distribution of CPI-PCE reconciliation factors, 1979–81[1]

Factor	1979 Index points	1979 Percent	1980 Index points	1980 Percent	1981[2] Index points	1981[2] Percent
Total difference	11.3	100	18.1	100	23.1	100
Housing treatment	7.0	62	11.7	65	14.2	61
Weighting effect	3.7	33	5.4	30	7.3	32
"All other" effect	0.6	5	1.0	6	1.7	7

[1] Data based on table 2.

[2] Average of first three quarters.

Reconciling cumulative changes

Table 2 shows the reconciliation of the CPI-U and the Implicit Price Deflator (PCE: Current-Weight) index levels, with 1972=100. The cumulative effect created by differences in owner-occupied housing treatment from 1972 to 1981 third quarter amounted to 15.5 index points, which is roughly 13 percent of the inflation over this interval, as measured by the CPI-U. As expected, the cumulative effect of updating weights in the price measures increases in index points as the periods providing the comparisons grow further apart. The 7.1 index number difference for the third quarter of 1981, however, accounts for only roughly 7 percent of the measured inflation from 1972 to that quarter (as recorded by the PCE measures). When computed as a percentage of the inflation that has occurred since 1972, both the housing treatment and weighting effects have grown somewhat larger in recent quarters.

As a percent of the total difference between the CPI-U and PCE Deflator in any particular period, however, all three categories have maintained roughly their same proportions to the total difference. These proportions are shown in table 3.

In summary, housing treatment continues to account for most of the difference between the CPI and PCE inflation measures. The effects of updating weights and "all other" factors play a much less significant role. □

FOOTNOTES

[1] Jack E. Triplett, "Reconciling the CPI and PCE Deflator," *Monthly Labor Review*, September 1981, pp. 3–15.

[2] See *ibid.*, pp. 7, 13–14.

[3] *Ibid.*

[4] See "Labor Month in Review: CPI Changes," *Monthly Labor Review*, November 1981, p. 2.

[5] Triplett, *op. cit.*, pp. 6–7, 9.

[6] *Ibid.*, pp. 6 and 8.

Area labor market response to national unemployment patterns

ROBERT W. BEDNARZIK AND RICHARD B. TILLER

Unemployment varies widely among geographical areas in the United States. In 1980, the rate of joblessness ranged from a high of 8.2 percent in the North Central region of the country to a low of 6.4 percent in the South. (The unemployment rates in the two remaining major census regions—the Northeast and the West—were near the national rate of 7.1 percent.) The concern of policymakers with the sensitivity of regional labor markets to national economic conditions has generated a number of time series studies of the impact of national fluctuations in unemployment on regional jobless rates.[1]

Such studies measure regional sensitivity as the change in regional unemployment rates relative to the change in the national average rate. During recessionary periods, differences in regional sensitivities to national fluctuations imply that unemployment rates in some areas will rise faster than the national average. Thus, deflationary policy measures targeted at selected national economic aggregates may unintentionally impose a disproportionately large share of the recessionary burden on some regions. Conversely, during periods of national full employment, differences in sensitivities mean that some areas may experience far greater labor demand pressures, and consequent wage inflation, than others. Over the longer run, differences in the magnitude of changes in area rates relative to the national average may indicate growing structural imbalances (such as deterioration in the competitive position of industries in certain regions) of which the policymaker should be aware.

Heretofore, most research has focused only on short-run relationships among unemployment series. We undertook a study which used a time series model that distinctly characterized the sensitivity of regional unemployment to both short- and long-run fluctuations in national unemployment during 1967–80.[2] For our purposes, the short run is defined as that period within which business cycles occur. We used the National Bureau of Economic Research designation of the length of post-World-War II business cycles as a guide for defining the length of our cyclical component. Within our sample period, these cycles ranged in length from approximately 2 to 7 years. The long run refers to periods of more than 7 years.

Thus, we were able to explore several questions requiring the separation of short-run (business cycle) from long-run (secular) developments: Are there major geographical differences in the importance of short- and long-run cycles in unemployment? How do various regional and local labor markets differ in their sensitivity to fluctuations in national unemployment? And, are areas responsive to national business cycles also sensitive to secular changes in the national unemployment rate?

Subnational unemployment rate data were analyzed using a spectral approach, whereby each series was broken down into its component cycles and trends to determine which of these movements exerted the most influence on the original series. This method also permits the estimation of the sensitivity of the components of one series to the corresponding components of other series. For example, we can estimate the sensitivity of the components of regional unemployment to the corresponding components of the national unemployment rate series. Thus, we can assess not only the impact of aggregate national developments on regional labor markets but also the extent to which a region exhibits its own independent business cycle or secular movements. There has been longstanding argument as to whether independent area business cycles can exist in a highly interdependent economy such as ours.

Data and methodology

Our sample consisted of monthly unemployment data from the Current Population Survey (CPS) covering the period January 1967–June 1980 for census regions and divisions, and for the 15 most populous States. (See exhibit 1.) January 1967 is the earliest date for which such information is available for subnational areas.[3] Unemployment estimates for previous studies of data for earlier periods were based on counts of unemployment insurance benefit claimants, inflated to represent total unemployment for an area using the so-called "Handbook procedure." However, this technique is known to produce biased results, particularly for business cycle analyses.[4]

In our model, regional unemployment rates were broken down into four major components:[5] (1) a national cyclical component, which measures short-run fluctuations related to the national business cycle; (2) a regional cyclical component, reflecting short-run fluctuations that are independent of the national business cycle; (3) a national secular measure of long-run national trends; and (4) a regional secular component, which tracks long-run area developments that are independent of national trends.

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Regional differences in joblessness generally reflect both aggregate supply and demand considerations. Specifically, the long-run trend of output and employment in a particular region is primarily determined by supply, which is in turn governed by the growth of labor, capital, and technology. Short-run fluctuations, on the other hand, reflect the ups and downs in consumer and business demand or, in some instances, temporary capacity bottlenecks on the supply side.

Thus, we can roughly separate the forces that affect regional unemployment rates into: (1) those caused by changes in aggregate demand or by capacity constraints, which appear as short-run cycles in the regional unemployment rate series; and, (2) those that originate largely on the supply side of the labor market and are reflected as long-run trends. At the regional level, we can further distinguish between shifts in demand and supply that originate within and outside the region.

Exhibit 1. Regions and geographic divisions of the United States

Northeast

- New England
  - Connecticut
  - Maine
  - Massachusetts[1]
  - New Hampshire
  - Rhode Island
  - Vermont
- Middle Atlantic
  - New Jersey[1]
  - New York[1]
  - Pennsylvania[1]

North Central

- East North Central
  - Illinois[1]
  - Indiana[1]
  - Michigan[1]
  - Ohio[1]
  - Wisconsin[1]
- West North Central
  - Iowa
  - Kansas
  - Minnesota
  - Missouri[1]
  - Nebraska
  - North Dakota
  - South Dakota

South

- South Atlantic
  - Delaware
  - District of Columbia
  - Florida[1]
  - Georgia
  - Maryland
  - North Carolina[1]
  - South Carolina
  - Virginia[1]
  - West Virginia
- East South Central
  - Alabama
  - Kentucky
  - Mississippi
  - Tennessee
- West South Central
  - Arkansas
  - Louisiana
  - Oklahoma
  - Texas[1]

West

- Mountain
  - Arizona
  - Colorado
  - Idaho
  - Montana
  - Nevada
  - New Mexico
  - Utah
  - Wyoming

Pacific

- Alaska
- California[1]
- Hawaii
- Oregon
- Washington

[1] One of the 15 most populous States.

Links between unemployment series

During 1967–69, the first 3 years of the sample period, the national unemployment rate was slightly below 4 percent. It then rose sharply, reaching nearly 6 percent in 1971. Subsequently, joblessness remained between 4.5 and 6 percent until 1975, when it jumped to 9 percent. Thus, over the period studied, the national rate was characterized by a long upward movement, as well as by major short-run fluctuations. In fact, the 1967–80 period encompassed two complete business cycles, including the most severe contraction in the postwar era, and the first phase of a third cycle.

The secular rise in the national jobless series has prompted economists to continually revise upward their estimates of the national rate for "full employment." A number of labor supply factors have been offered as possible explanations for this rise, including demographic changes in the composition of the labor force, expanded income transfer programs, increases in the minimum wage, and growth in the number of multiworker families. The quantitative importance of these factors, however, remains to be established.[6]

Secular and cyclical forces. The relative importance of cyclical and secular movements in each area unemployment series is shown in table 1. Columns 1 and 4 provide the proportions of the total combined variation in national and regional unemployment due to secular and cyclical forces, respectively. The national series (columns 2 and 5) is given as a point of reference; its secular component accounts for 51 percent of the variation, compared to 40 percent for the cyclical component. This highlights the importance of the long-run trend in the national unemployment rate. The national pattern must, of course, be reflected in the regional unemployment rate series, because the former is a weighted average of the latter.

For all regions, 7 of the 9 divisions, and 11 of the 15 States, the secular component contributes more to variance than the cyclical component. However, there is considerable difference among areas in the relative size of the secular component, which ranges from a high of 57 percent in the Middle Atlantic division to a low of 37 percent in the Mountain and East South Central sections. The range for the 15 largest States is slightly wider, from 58 percent for New York to 33 percent for Indiana.

While generally smaller than the secular component, the cyclical component nevertheless accounts for a sub-

Table 1. Variance decomposition of unemployment rates by area, 1967–80

Area	Percent of variance accounted for by—[1]						
	Secular component[2]			Cyclical component[2]			Seasonal component
	Total (1)	National (2)	Regional (3)	Total (4)	National (5)	Regional (6)	(7)
United States	51	51	—	40	40	—	2
Northeast	57	57	0	38	37	1	2
New England	56	50	6	38	35	3	2
Massachusetts	57	52	5	36	33	4	2
Middle Atlantic	57	56	2	38	36	2	2
New Jersey	57	55	1	37	34	3	2
New York	58	56	1	39	36	3	1
Pennsylvania	52	48	4	38	35	3	4
North Central	42	41	1	41	39	2	6
East North Central	41	40	1	42	40	2	6
Illinois	44	41	3	38	34	4	6
Indiana	33	28	5	45	35	10	6
Michigan	38	37	2	42	39	3	6
Ohio	38	37	1	43	41	3	6
Wisconsin	40	40	1	34	32	2	8
West North Central	40	39	1	34	31	3	11
Missouri	41	40	1	32	28	4	9
South	48	47	2	38	37	2	6
South Atlantic	53	50	3	38	35	3	4
Florida	55	52	3	39	34	5	2
North Carolina	34	29	5	44	35	9	8
Virginia	47	42	6	31	26	5	8
East South Central	37	32	5	38	33	5	10
West South Central	39	37	1	35	33	2	12
Texas	40	38	1	36	32	3	9
West	47	40	7	41	35	6	5
Mountain	37	35	2	36	31	5	12
Pacific	49	40	9	41	35	7	4
California	49	40	9	41	34	8	4

[1] The percentages for the secular, cyclical, and seasonal components of a series do not add to 100 because there is other variation (principally random) not accounted for.

[2] The national and regional subcomponents may not add to the total because of rounding.

stantial portion of the variance. In fact, cyclical variation in joblessness in the East North Central division and 3 of its 5 States—Indiana, Michigan, and Ohio—was even greater than the secular variation. This was also the case for North Carolina. Cyclical variation as a percent of the total was smallest for Virginia and Missouri.

Table 1 also indicates the relatively minor contribution of independent regional cycles to total variance.[7] Column 6 provides the portion of the variance accounted for by the independent cyclical component of regional unemployment. In three States—Indiana, North Carolina, and California—this component was 8 to 10 percent of the total variance in the unemployment rate series, accounting for more variation than the seasonal movements (column 7). In the remaining 12 States, the regional cyclical component was 5 percent or less of the variance. Clearly, national fluctuations account for most of regional cyclical unemployment patterns.

On the other hand, there is evidence that distinct regional business cycles, although relatively small, do exist. Some have asked how such cycles could develop. In a highly interdependent economy such as ours, one might expect economic impluses to be diffused rapidly, and that there would thus be strong conformity between regional and national business cycles. But, in fact, these cycles may be normal by-products of a dynamic economy.

For example, it has been established that random events in time series can generate wavelike movements with business cycle properties.[8] At the regional level, unexpected changes in relative demands for goods and services become shocks to the labor market, the effects of which tend to persist because the supply of labor adjusts slowly to new conditions. However, these random disturbances tend to cancel out in the aggregate. That is, shocks in one region tend to be offset by countershocks in other regions. For example, assume there is a country with an area whose economy depends upon the production of slide rules, while in another area of the same country a new industry develops that produces pocket calculators. Suddenly, the demand for slide rules falls and that for pocket calculators rises. It is entirely possible that, at the national level, these changes would be offsetting. But because it takes time for an area to switch production emphasis (either to producing more or less), local business cycles may persist for a while, independent of national movements. Only when such shocks accumulate in one direction are national business cycles generated.

Of course, this also implies that the larger the regional economy, the less important will be independent regional business cycles, because internal shocks tend to average out. This hypothesis is supported by our observation that the smaller the area, the larger the independent regional cyclical component—3 percent for census regions, 4 percent for census divisions, and 5 percent for the 15 States.

The independent secular component of regional unemployment (column 3 in table 1) is relatively weak. And, on average, independent long-run regional fluctuations account for only 3 percent of the total variation in the State unemployment rates. California, at 9 percent, is the one notable exception; Virginia followed at 6 percent. Based on these statistics, it would appear that area labor markets conform to long-run national developments, rather than manifesting their own distinctive secular trends.

Sensitivity of regional to national unemployment. Our technique also provides estimates of the sensitivity of the components of regional unemployment to corresponding components in the national series.[9] These estimates are presented in table 2. The larger the index value, the greater is the amplitude of the national component in the regional unemployment rate series. For a secular index value greater than 1, this implies a tendency for a region's unemployment rate to rise above that of the Nation during a long-run upswing in the national rate and to remain there for an extended period. This was the case for the jobless pattern in the Northeast, which was very sensitive to the national unemployment rate trend. In the other three census regions, the index was less than 1, indicating a tendency for the long-run rise in the regional rate to be less than that in the national rate.

Of the nine census divisions, the Middle Atlantic and New England States were the most sensitive to long-run national patterns. The South Atlantic and East North Central divisions have index values very close to 1, indicating that the amplitude of the secular component of their unemployment rates was roughly the same as that of the corresponding national component. Among the 15 largest States, Massachusetts and New Jersey were the most sensitive, as were the divisions in which they are located. On the other hand, jobless patterns in Florida and Michigan were somewhat unique in that they were much more sensitive to the national rate than were their divisions. Texas and the West South Central area ranked by far the lowest in degree of sensitivity to the national rate.

Turning to the cyclical component (column 2, table 2), the jobless pattern in the Northeast was the most sensitive to national business cycles, while those of the South and the West were least sensitive. The North Central index value, which is close to 1, suggests that national business cycles tend to be transmitted to this region with unchanged amplitude. However, this essentially results from the counterbalancing unemployment relationship between its two divisions: Jobless patterns in the East North Central division were very sensitive to national business cycles, while those in the West North Central division were not.

Table 2. Amplitude of national secular and cyclical components in area jobless series, and mean unemployment rate, 1967–80

Area	Index value		Mean unemployment rate (3)
	Secular (1)	Cyclical (2)	
United States	1.00	1.00	5.7
Northeast	1.50	1.38	6.2
New England	1.50	1.42	6.0
Massachusetts	1.73	1.56	6.2
Middle Atlantic	1.50	1.37	6.2
New Jersey	1.72	1.53	6.9
New York	1.63	1.48	6.5
Pennsylvania	1.15	1.11	5.8
North Central	.87	.99	5.2
East North Central	.99	1.15	5.7
Illinois	.89	.93	5.0
Indiana	.84	1.17	5.4
Michigan	1.35	1.66	7.9
Ohio	.93	1.15	5.7
Wisconsin	.81	.83	4.5
West North Central	.60	.61	4.0
Missouri	.83	.79	4.6
South	.81	.82	5.2
South Atlantic	1.04	.99	5.2
Florida	1.50	1.37	5.9
North Carolina	.72	.98	4.9
Virginia	.76	.68	4.4
East South Central	.66	.81	5.4
West South Central	.53	.57	4.9
Texas	.52	.54	4.5
West	.79	.84	6.8
Mountain	.60	.65	5.6
Pacific	.86	.91	7.2
California	.86	.90	7.2

There is a broad range of sensitivity to the national business cycle in the jobless patterns of the 15 largest States; indexes ranged from a high of 1.66 in Michigan to a low of 0.54 in Texas. Index values dropped off rapidly, with Massachusetts and New Jersey following Michigan. At the lower end of the sensitivity spectrum, Virginia was the only State relatively close to Texas.

Generally, if an area was sensitive to national secular patterns, it was also sensitive to national business cycles. Indiana was the only clear-cut exception, being responsive only to national secular developments.

Interpretation of results

There is no unified theory of the determinants of a region's response to national cycles and trends. Differences in industry mix, local multiplier effects (propensities of residents to spend their income outside their home region), competitive market strengths, layoff policies,[10] unemployment insurance benefit levels,[11] labor force composition, growth,[12] and inflationary impacts[13] have all been cited as likely causes of the variance in regional jobless patterns.

Our findings indicate that the unemployment patterns in the New England and Middle Atlantic divisions and selected States in the East North Central division were affected more strongly than those in other areas by national economic trends over the period under study. Most States in these divisions tend to be highly sensitive to both short- and long-run national developments. These divisions comprise what geographers call the "manufacturing belt"—an area characterized by cyclically sensitive durable goods industries. For example, Michigan, which is dominated by the automobile industry, exhibited the highest cyclical sensitivity among the States studied.

At the same time, long-run structural factors may have resulted in a deterioration in the competitive position of the manufacturing belt, in which most of the older central cities are located. Aging capital and rising energy prices appear to have rendered these areas less viable for manufacturing.

In contrast, California was neither cycle- nor secular-sensitive, exhibiting the most independence from national patterns. In fact, there was some evidence that California may have a cycle of its own.

With few exceptions, independent regional cycles, although in evidence, contributed very little to regional fluctuations. And systematic leads or lags in regional unemployment rates relative to the national rate could

not be detected. Apparently, national aggregate supply and demand disturbances are quickly transmitted throughout the economy, and both short- and long-run changes in regional labor market conditions conform closely to national developments. Regions do differ, however, in the degree of their sensitivity to changing national conditions. But generally, areas that are responsive to national secular trends are also sensitive to national business cycles. ☐

FOOTNOTES

Frank Brechling's "Trends and Cycles in British Regional Unemployment," *Oxford Economic Papers*, March 1967, pp. 1–22, is foremost among these studies. A number of European and Canadian studies followed Brechling's approach; see, for example, C.P. Harris and A.P. Thirwall, "Interregional Variations in Cyclical Sensitivity to Unemployment in the UK 1949–1964," *Bulletin Oxford University Institute of Economics and Statistics*, February 1968, pp. 55–56; J.J. Van Duijn, "The Cyclical Sensitivity to Unemployment of Dutch Provinces," *Regional Science and Urban Economics*, May 1975, pp. 107–32; and L.J. King and G.L. Clark, "Regional Unemployment Patterns and the Spatial Dimensions of Macro-Economic Policy: The Canadian Experience 1966–1975," *Regional Studies*, 1978, pp. 283–96. Similar U.S. studies include Robert M. Fearn, "Cyclical, Seasonal, and Structural Factors in Area Unemployment Rates," *Industrial and Labor Relations Review*, April 1975, pp. 424–31, and Thomas Hyclak and David Lynch, "An Empirical Analysis of State Unemployment Rates in the 1970's," *Journal of Regional Science*, No. 3, 1980, pp. 377–86.

Richard B. Tiller and Robert W. Bednarzik, "A Detailed Analysis of Regional and State Unemployment Patterns in the U.S.: 1967–1980," unpublished paper presented at the Atlantic Economic Society meetings, October 1981.

During the first 3 years of our sample period, the national unemployment rate, while lower than for earlier years in the decade, was near full employment (4 percent). In subsequent years, the unemployment rate at full employment was redefined substantially upward. Thus, although our sample starts at a somewhat lower than average national jobless rate, the distortion effects on our estimate of the secular component of unemployment rates should be small.

See Richard Tiller, "An Exploratory Time Series Analysis of Errors in Area Estimates of Unemployment," *Proceedings of the Business and Economic Statistics Section of The American Statistical Association*, 1979, pp. 165–69, for more detail.

This is done using spectral analysis, which is a time series analysis technique in the frequency domain whereby a series is decomposed into uncorrelated (random) components according to frequencies. "Frequency" simply refers to the fraction of a cycle completed in a given period. The spectrum at a particular frequency represents the contribution of that frequency to the total variation of the series. This method of analysis is quite general in that it does not require strong assumptions concerning the properties of the series being decomposed. A more complete description of the procedures used to develop the discussion in this article is available from the authors upon request.

See, for example, Paul O. Flaim, "The effect of demographic changes on the Nation's jobless rate," *Monthly Labor Review*, March 1979, pp. 13–23, and Joseph Antos and others, "What is the current equivalent to unemployment rates of the past?" *Monthly Labor Review*, March 1979, pp. 36–46. Some economists argue that the long-run rate of unemployment will fall because the birth cohorts of the baby boom are now moving into age groups characterized by more stable work experience; in this regard, see Michael L. Wachter, "The Demographic Impact on Unemployment: Past Experience and the Outlook for the Future," in *Demographic Trends and Full Employment* (Washington, National Commission for Manpower Policy, 1976), pp. 27–98. Some of our preliminary analysis tends to lend evidence for the view that the long-run rate may be falling. When business cycle frequencies were eliminated from the national and regional unemployment series, a clearly visible long-run cycle was left that appears to have peaked in most series in 1975.

The spectral decomposition of a series is analogous to an analysis of variance problem. The importance of each component of the series can be assessed in terms of its contribution to the total variance of the series. A measure of the proportion of variance in Ur(f) (fth frequency component of regional series) not accounted for by UR(f) (fth frequency component in national series) is equal to 1-[Var V(f)/Var Ur(f)], where Var V(f) is equal to the variance of the residual component of Ur(f) and Var Ur(f) is equal to the variance of the fth frequency component of regional unemployment.

J. H. McCulloch, "The Monte Carlo Cycle in Business Activity," *Economic Inquiry*, September 1975, pp. 303–21.

This results from an extension of spectral analysis to the bivariate, called cross-spectral analysis. Specifically, a gain statistic (which compares the amplitude of the regional jobless series to that of the national series) is generated and, as such, is similar to a regression slope coefficient.

Lynn E. Browne, "Regional Industry Mix and the Business Cycle," *New England Economic Review*, November-December 1978, pp. 35–53.

John Barron and Wesley Mellow, "Interstate Differences in Unemployment Insurance," *National Tax Journal*, April 1981, pp. 105–14.

Philip L. Rones, "Moving to the sun: regional job growth, 1968 to 1978," *Monthly Labor Review*, March 1980, pp. 12–19.

Benjamin H. Stevens and Glynnis A. Trainer, "Differential Regional Impacts of Inflation with Special Reference to Recent Experience in the Northeastern U.S.," in P.B. Carbin and M. Sabrin, eds., *American Geographical Society's First Symposium on Geographical Aspects of Inflationary Processes, Part Two* (Pleasantville, N.Y., Redgrave Publishing Co., 1976), pp. 54–65.

Occupational deaths declined in 1980, BLS survey finds

Bureau of Labor Statistics survey results show that 4,400 work-connected deaths occurred during 1980 in private sector workplaces employing 11 workers or more.[1] (See table 1.) This was 11 percent less than the 4,950 deaths in 1979. The corresponding fatality rate per 100,000 employees dropped from 8.6 in 1979 to 7.7 in 1980.[2]

Employers participating in the Bureau's Annual Survey of Occupational Injuries and Illnesses were asked to supply specific information about all deaths caused by hazards in the work environment, that is, the object or event most closely associated with the circumstances of the fatality. Fatality percentage estimates by cause have been calculated for both the 1979 and 1980 surveys combined rather than for each year separately, as large sampling errors at the industry division level preclude precise comparisons based on year-to-year changes. Some key survey results:

- Thirty percent of all occupational fatalities were associated with the operation of over-the-road motor vehicles. (See table 2.)

Table 1. Occupational injury and illness fatalities and employment for employers with 11 employees or more by industry, 1979 and 1980

Industry	Annual average employment[1]				Fatalities			
	1979		1980		1979		1980	
	Number (thousands)	Percent	Number (thousands)	Percent	Number	Percent	Number	Percent
Private sector	61,660	100	61,677	100	4,950	100	4,400	100
Agriculture, forestry, and fishing	876	1	943	2	110	2	140	3
Mining	890	1	944	2	490	10	460	10
Construction	3,138	5	3,141	5	960	19	830	19
Manufacturing	20,325	33	19,630	32	1,100	22	1,080	25
Transportation and public utilities	4,637	8	4,665	8	915	19	810	18
Wholesale and retail trade	14,938	24	14,474	23	930	19	580	13
Finance, insurance, and real estate	3,905	6	4,078	7	85	2	150	3
Services	12,951	21	13,802	22	360	7	350	8

[1] Annual average employment for nonagricultural industries is based on the employment and earnings survey conducted by BLS, in cooperation with State agencies. The employment estimate for the services division is adjusted to exclude the nonfarm portion of agricultural services and nonclassifiable establishments. The employment estimates have been adjusted based on County Business Patterns to exclude establishments with fewer than 11 employees. Annual average employment for the agriculture, forestry, and fishing division is a composite of data from State unemployment insurance programs and estimates of hired farmworkers engaged in agricultural production provided by the Department of Agriculture. The agricultural production employment estimate as originally published by the Department of Agriculture is adjusted to exclude employment on farms with fewer than 11 employees.

NOTE: Because of rounding, components may not add to totals.

- Deaths from heart attacks (11 percent) accounted for about 1 of 9 cases.
- Industrial vehicles or equipment were linked to 10 percent of the deaths, and falls accounted for 9 percent.
- The remaining 40 percent of the deaths were largely caused by electrocutions (8 percent), aircraft crashes (5 percent), objects other than vehicles or equipment striking workers (5 percent), or gun shots (4 percent).
- Heart attack cases were concentrated about equally in manufacturing and trade industries at approximately 20 percent of the total. (See table 3.)

Falls continued to take a heavy toll in the construction industry (48 percent of deaths) as do cases where employees are caught in, under, or between objects other than vehicles or equipment (47 percent).

The 4,400 work injury and illness fatalities in 1980 for units with 11 employees or more represent all deaths reported resulting from an occupational injury or illness that occurred in 1980, regardless of the length of time between the injury and death or the length of the illness resulting in death. Of these, about 500 were related to illness.

Slight decreases in employment and fatalities oc-

Table 2. Causes of fatalities resulting from occupational injury and illness in 1979 and 1980[1] in units with 11 employees or more, private sector, by industry, distribution by industry

[In percent]

Cause[2]	Total[3]	Agriculture, forestry, and fishing	Mining oil and gas extraction only	Construction	Manufacturing	Transportation and public utilities[4]	Wholesale and retail trade	Finance, insurance, and real estate	Services
Total	100	100	100	100	100	100	100	100	100
Over-the-road motor vehicles	30	28	21	16	18	46	48	53	29
Heart attacks	11	15	10	9	9	9	14	24	16
Industrial vehicles or equipment	10	20	20	15	12	5	2	4	8
Falls	9	4	9	22	9	4	2	5	8
Electrocutions	8	5	15	12	6	9	3	1	9
Aircraft crashes	5	6	10	1	4	11	4	11	3
Struck by objects other than vehicles or equipment	5	8	5	8	8	4	2	1	1
Plant machinery operations	4	2	1	1	12	1	2	0	2
Gun shots	4	1	0	(5)	1	3	17	1	6
Caught in, under, or between objects other than vehicles or equipment	3	1	1	6	4	1	1	0	(5)
Fires	3	5	2	1	6	2	2	0	2
Explosions	2	2	2	3	4	1	1	0	(5)
Gas inhalations	2	2	1	2	4	1	(5)	0	1
All other	4	2	4	3	4	4	3	1	16

[1] It is impossible to estimate year-to-year changes precisely because at the industry division level sampling errors are large. Therefore, the results are for both years rather than a comparison between them.

[2] Cause is defined as the object or event associated with the fatality.

[3] Excludes coal, metal and nonmetal mining, and railroads for which data are not available.

[4] Excludes railroads.

[5] Less than 1 percent.

NOTE: Because of rounding, percentages may not add to 100.

Table 3. Causes of fatalities resulting from occupational injury and illness in 1971 and 1980[1] in units with 11 employees or more, private sector, by industry, distribution by cause

[In percent]

Cause[2]	Total[3]	Agriculture, forestry, and fishing	Mining—oil and gas extraction only	Construction	Manufacturing	Transportation and public utilities[4]	Wholesale and retail trade	Finance insurance and real estate	Services
Over-the-road motor vehicles	100	3	4	11	16	28	26	5	7
Heart attacks	100	4	5	17	22	15	21	6	11
Industrial vehicles or equipment	100	6	11	30	33	9	4	1	6
Falls	100	1	6	48	27	7	3	2	7
Electrocutions	100	2	11	30	22	20	7	(5)	9
Aircraft crashes	100	4	11	5	19	40	11	6	5
Struck by objects other than vehicles or equipment	100	5	6	28	40	13	8	(5)	1
Plant machinery operations	100	1	1	6	79	2	8	0	3
Gun shots	100	(5)	0	1	7	11	70	1	11
Caught in, under, or between objects other than vehicles or equipment	100	1	2	47	40	5	5	0	1
Fires	100	5	5	6	56	13	11	0	5
Explosions	100	2	4	28	47	12	7	0	1
Gas inhalation	100	3	2	22	59	7	3	0	5
All other	100	2	5	12	24	16	12	1	29

[1] It is impossible to estimate year-to-year changes precisely because at the industry division level sampling errors are large. Therefore, the results are for both years rather than a comparison between them.

[2] Cause is defined as the object or event associated with the fatality.

[3] Excludes coal, metal and nonmetal mining, and railroads for which data are not available.

[4] Excludes railroads.

[5] Less than 1 percent.

NOTE: Because of rounding, percentages may not add to 100.

curred in manufacturing industries during 1979 and 1980. (See table 1). Construction employment remained constant in 1980 at 5 percent of the total as did the percentage of deaths at 19 percent; however, the number of fatalities decreased 14 percent. Another industry which showed a substantial decrease in deaths was wholesale and retail trade, which dropped 38 percent, while employment declined only slightly. Agriculture, forestry, and fishing; mining; and the services industries recorded some increases in employment and relatively minor fluctuations in their proportion of fatalities.

Industry characteristics

The following is a summary by industry of the objects or events associated with fatalities.

Agriculture, forestry, and fishing. Almost half of all deaths in this industry involved vehicles—28 percent highway cars and trucks and 20 percent industrial types of vehicles or equipment such as tractors, logging equipment, and so forth. Heart attacks accounted for 15 percent and the worker being struck by objects, such as falling trees, for 8 percent.

Mining—oil and gas extraction only. Over-the-road and industrial vehicles were traced to more than 2 of 5 deaths in this section of the mining industry. Electrocutions were the cause of 15 percent of the fatalities and heart attacks, for 10 percent.

Construction. Falls continue to be the major cause of death in the construction industry—22 percent of all cases. Vehicles, both highway and industrial, were charged with almost one-third of the deaths; electrocutions accounted for 12 percent, and heart attacks, 9 percent.

Manufacturing. Vehicles (industrial and highway) were blamed for 30 percent of the deaths, and the operation of plant machinery resulted in 12 percent.

Transportation and public utilities. As in past years, highway motor vehicle accidents were connected with close to one-half of all occupational deaths and aircraft, for 11 percent. Heart attacks were responsible for an additional 9 percent, as were electrocutions primarily in the public utilities.

Wholesale and retail trade. Of all deaths caused by gun shot, 7 of 10 were in this industry. However, 48 percent of the deaths were because of car and truck accidents and 14 percent were traceable to heart attacks.

Finance, insurance, and real estate. Over three-fourths of all fatalities in this industry were attributed to motor vehicles (53 percent) and heart attacks (24 percent). Eleven percent were caused by aircraft crashes.

Services. Following the same pattern as other industries, almost one-third of the fatalities that occurred were connected with over-the-road motor vehicles, while heart attacks made up 16 percent. However, 16 percent of deaths in this industry were caused by objects or events not specified in the tables. These come under "all other" causes and include, for example, contact with toxic substances, drowning, and freezing or extreme cold among the many other causes of occupational death.

Background of survey

The Occupational Injuries and Illnesses Survey is a Federal and State program in which reports are received and processed by State agencies participating with BLS. The occupational fatality data reported through the annual survey are based on the records which employers maintain under the Occupational Safety and Health Act of 1970. Excluded from coverage under the act are working conditions which come under other Federal safety and health laws.

The survey covers units in private industries. Excluded are the self-employed; farmers with fewer than 11 employees; private households; and employees in Federal, State, and local government agencies. In a separate reporting system, agencies of the Federal Government are filing reports comparable with those of private industry with the Secretary of Labor.

The 1980 survey, to which a response was mandatory, involved a sample of 220,000 units with 11 employees or more. Estimates based on a sample may differ from figures that would have been obtained had a complete census of establishments been possible using the same schedules and procedures. A relative standard error is calculated for the estimates generated from the Annual Survey of Occupational Injuries and Illnesses. □

FOOTNOTES

[1] Since 1977, the fatality data have been published only for units with 11 employees or more because the reductions of the survey samples affected primarily employers with fewer than 11 employees. The reductions were in response to Presidential directives on reducing the paperwork burden of employers selected to participate in statistical surveys. Data for occupational fatalities in coal, metal, and nonmetal mining and railroads were provided by the Mine Safety and Health Administration of the U.S. Department of Labor and by the Federal Railroad Administration of the U.S. Department of Transportation; however, data were not provided on the objects or events which resulted in on-the-job deaths for these industrial activities.

[2] The change may be attributed to sampling error.

A note on communications

The *Monthly Labor Review* welcomes communications that supplement, challenge, or expand on research published in its pages. To be considered for publication, communications should be factual and analytical, not polemical in tone. Communications should be addressed to the Editor-in-Chief, *Monthly Labor Review*, Bureau of Labor Statistics, U.S. Department of Labor, Washington, D.C. 20212.

Major Agreements Expiring Next Month

This list of collective bargaining agreements expiring in February is based on contracts on file in the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more.

Employer and location	Industry	Union[1]	Number of workers
Anheuser-Busch, Inc. (St. Louis, Mo.)	Food products	Teamsters (Ind.)	1,800
Campbell Soup Co. (Camden, N.J.)	Food products	Food and Commercial Workers	1,300
Central Telephone Co. of Florida	Communication	Electrical Workers (IBEW)	1,050
Cessna Aircraft Co. (Hutchinson, Kans.)	Machinery	Machinists	2,100
Eugene Area Food Agreement (Oregon)[2]	Retail trade	Food and Commercial Workers	1,000
Health Manpower Management, Inc. (Minnesota)	Hospitals	Service Employees	5,000
Kroger Co. (Columbus, Ohio)	Retail trade	Food and Commercial Workers	4,150
Ladish Co. (Cudahy, Wis.)	Primary metals	Machinists	2,000
Marine Towing & Transportation Employers' Association (New Jersey and New York)	Water transportation	Longshoremen's Association	2,000
MTL, Inc. (Honolulu, Hawaii)	Transit	Teamsters (Ind.)	1,200
National Airlines, Inc. (Interstate)[3]	Air Transportation	Transit Union	1,200
Regional Transportation District (Denver, Colo.)	Transit	Transit Union	1,500
Retail Apparel Merchants Association (New York)	Retail trade	Clothing and Textile Workers	2,500
Rockwell International Corp. (Newport Beach, Calif.)	Electrical products	Electrical Workers (IBEW)	1,200
Rockwell International Corp., Collins Radio Group (Dallas, Tex.)	Electrical products	Electrical Workers (IUE)	2,500
Rockwell International Corp., Radio Group (Cedar Rapids, Iowa)	Electrical products	Electrical Workers (IBEW)	5,200
San Diego Gas & Electric Co. (California)	Utilities	Electrical Workers (IBEW)	2,400
Screen Actors Guild 1975 Commercial Contract (Interstate)[2]	Motion pictures	Actors	39,000
Walt Disney Productions Disneyland (Anaheim, Calif.)	Amusements	Service Employees; Food and Commercial Workers; Hotel and Restaurant Employees; Bakery, Confectionary and Tobacco Workers; and Teamsters (Ind.)	1,800
	Government activity	Union or employee organization	
Louisiana Charity Hospital	Hospitals	American Federation of State, County and Municipal Employees	3,000

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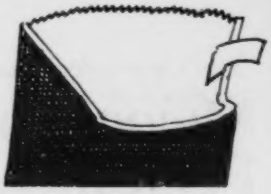
[1] Affiliated with AFL-CIO except where noted as independent (Ind.).

[2] Industry area (group of companies signing same contract).

[3] Information is from newspaper report.

Book Reviews



Frontline report on the Depression

One Third of a Nation: Lorena Hickok Reports on the Great Depression. Edited by Richard Lowitt and Maurine Beasley. Champaign, Ill., University of Illinois Press, 1981. 365 pp. $18.95.

In July 1933, Harry Hopkins, administrator of the Federal Emergency Relief Administration, asked Lorena Hickok to travel the country and report her observations on economic conditions and relief activities. "I don't want statistics from you. I don't want the social-worker angle. I just want your own reaction, as an ordinary citizen . . . . Tell me what you see and hear. All of it," Hopkins said. "Don't ever pull your punches."

For the next year and a half, Hickok crossed the country, writing some 120 reports to Hopkins. Meanwhile, she corresponded almost daily with Eleanor Roosevelt. Richard Lowitt (Iowa State University) and Maurine Beasley (University of Maryland) present some 80 letters to Hopkins and 13 to Roosevelt, all from the Franklin D. Roosevelt Library at Hyde Park, N.Y., which give an extensive, pointed, and moving account of the national situation.

Hickok had climbed to the top of the Associated Press as one of the foremost women reporters, following a precarious childhood. The AP assigned her to cover Eleanor Roosevelt during the 1932 Presidential campaign and she became her confidante and unofficial press adviser. In succeeding years, she traveled with the First Lady through New England and eastern Canada, through the West, and to the Caribbean. Indeed, this friendship had strained her relations with the AP, leading her to resign in June 1933. The editors explain, "No doubt the job [for Hopkins] was arranged through Mrs. Roosevelt."

In her travels, Hickok encountered farm strikers and entered California in the aftermath of the San Francisco General Strike. She witnessed the effects of the wind and cold in the Northern Plains, the drought in the Western Plains, and the heat of California's Imperial Valley. And she wrote dramatically of both the poverty suffered and the dilemmas posed by the large black and Mexican populations in the South and Southwest.

With a keen reporter's eye, she sought the story from several angles, talking with local, State, and Federal officials as well as businessmen, farmers, journalists, and ordinary people from all walks of life—often playing "dumb" to encourage her informants. Then she wrote hard-hitting memos to Hopkins. Of the relief situation in Florida, she said, "It seems to me that I've seen more greed in this State than anywhere else I've been. The whole attitude, both of communities and individuals, seems to be: 'It's Government money! Come on, let's get our share!' "

And she posed a crucial question for all such emergency programs—how to provide enough assistance without eroding confidence and social relations. She quoted a Republican county chairman in Pennsylvania, "What's the use of going back to work if you're worse off than you were before?" In Syracuse, N.Y., she noted that a man with a large family could get $16 a week on relief while the average minimum wage in private industry was $14.

Yet, she wrote of the great privation endured. "'Do you and your husband and the children all sleep in this bed?' the investigator asked. 'We have to,' she replied simply, 'to keep warm.' It was 5 degrees above zero in Bottineau County yesterday."

But she reserved some of her strongest remarks for victims in the broad middle class. For example, she feared the creation of "A whole stranded generation" of workers 40 or 45 or older considered too old for many industries. "Add that whole generation to the list of people who aren't going to get their jobs back because of technological advances, and—well, you've got something."

Yet, she stayed alert to sparks of the human spirit: "They say miners are lazy, but it seems to me you could hardly call a family lazy that would clear and dig up with a pitchfork and spade four acres of land on a mountainside so steep that you could probably not drive a team of horses with a plow up there even if you had them."

Her sympathies definitely lay with the victims—she entitled her own uncompleted attempt to collect and publish her letters, "The Unsung Heroes of the Depression" and dedicated it to the " 'chislers' and the 'shovel-leaners' who have been living on the taxpayers' money." And her observations hit with the impact of Studs Terkel's *Hard Times*, another book which personalizes and humanizes the political histories. Yet, she reaffirms the essential conservatism of most Americans she met. In something of a rebuke to the revisionists, she quotes the president of the Nebraska Farmers' Union: "We're from Missouri. We don't like Mr. Wallace much, but—we're willing to wait awhile and see what happens."

Two major biases or prejudices are evident. In writing of the South and Southwest, Hickok described the poverty—approaching peonage—experienced by blacks and Mexican-Americans, but her primary concern lay with the white or Anglo "white-collar" middle class. Apparently she spent little time with either blacks or Mexicans. On another level, Hickok traveled mostly through rural areas, and most of her comments emphasized agricultural problems. Although she visited New York, Philadelphia, and other large cities, her observations focused on the immediate need for housing, food, and work. She apparently made little effort to talk to many industrial workers or to the more radical labor organizers.

Hickok's assignment, after all, was to report on economic conditions and the effectiveness of various relief programs. She accomplished this in excellent fashion, providing perceptive personal, administrative, and sociological comment. These reports provide graphic descriptions of the country before the "safety nets" were raised and of the difficulties encountered in erecting them. They are especially pertinent reading at a time when the country is reassessing the role of government developed during the Depression, for they tell it all—the good and the gruesome, the greed and the grace.

—WILLIAM T. MOYE
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The future of work

Working in the Twenty-First Century. Edited by C. Stewart Sheppard and Donald C. Carroll. New York, Philip Morris, Inc., 1980. 235 pp., bibliography. $18.95, John Wiley and Sons, New York.

Because work is the primary connection to life for most persons, this collection of thoughtful essays is an attempt to project what life will be like in the coming century. This book focuses on likely patterns of personal value changes, the effects of these on domestic, economic, and social institutions, and how the amalgam of all can be affected by the emerging trends in global, political, and economic activities.

The Business schools of the Universities of Pennsylvania and Virginia cosponsored a symposium to analyze the future. Fifteen knowledgeable persons from business, labor, and the sciences, both social and technical, were invited to present papers which form the substance of this excellent book. The authors are generally optimistic but they don't evade the projected threats and pitfalls even though the dangers pointed to are sometimes contradictory in accordance with their doctrinal beliefs.

In considering individual values, Suzanne Keller, from a university, enlarges on a theme by Kenneth Boulding, who sees us moving from a "cowboy economy"—reckless, violent and romantic—where incremental production and consumption become almost ends in themselves, to a "spaceship economy" in which production and consumption have value only in relation to protecting people and resources. She maintains that while most people can accommodate the idea of technological change, they are less comfortable with changes in social institutions and customs. Another academician, James O'Toole, sees today's growing erosion of responsibility as a trend which must be shifted to secure a safe passage into the next century. A pervasive march toward cradle to grave entitlements, not only among the unionized work force, but also in the managerial ranks, has sapped, he says, the long-run health of the U.S. economy. He gleans some hope for increasing our acceptance of responsibility in recent northern plant closings where groups of middle-managers and workers have taken over under austere conditions to attempt a rescue of jobs and output.

A spate of authors has raised questions about the new technology. How will it help our society, how will it impinge on the worker, what does it portend for the national ecology? One author says that biosciences and advanced information handling will continue our shift from the industrial to the post-industrial society, bringing many improvements in life and the need for a highly sophisticated work force. William Lucy of the American Federation of State, County and Municipal Employees (AFSCME) points to the preponderance of jobs in services over manufacturing and indicates a continuation of that trend, which, he avers, means a growing group of less skilled, alienated workers in lower-paying jobs, in which any one person is easily replaced. Further, he states that antiunionism is on the rise. Highly sophisticated consultants are placed in establishments to foment clever obstructions where union development might arise. There is also intensive lobbying against prolabor legislation in the Congress.

Theodore Kheel believes, nevertheless, that collective bargaining will be with us during the 21st century, and, if we maintain our system of free enterprise, basic negotiations on conditions of employment will be little changed. He says that unionization in the private sector will remain at about the same level as now, public sector unionization may continue its growth for a while, mergers of unions will continue for more economical operations, and their political lobbying will continue to grow in seeking favorable labor legislation. The Machinists' William Winpisinger sees unions influencing corporate decisions by the use of pension fund payments and, alarmed by the growth of multinational companies, predicts that initial attempts will be made to settle industrial relations disputes on a global basis.

Jerome Rosow discusses a University of Michigan survey which indicates a steady decline in worker satisfaction, and states that this "cannot be isolated from the steady decline in the Nation's productivity growth rate." He says that to correct this problem in the future, alternative work patterns like flexitime, part-time shared jobs, and increased worker participation in decisions that affect their jobs will require increasing attention.

James Jordon, an industrial vice president for labor relations, believes that, in the future, plant layoffs will be an obsolete way of controlling variable costs. Given a year or more of training per worker, who in some plants control millions of dollars in capital equipment, new ways to assure job security will become a management goal. On balance, however, he cannot see any sudden future shifts that will greatly change the present status of either management or unions. Ian Wilson, a General Electric consultant, in one of the very few references to poverty in the book, assumes that there will be fewer people in poverty in the coming century because over the past five generations—since 1800—per capita income has doubled each 30 odd years, and despite some possible slowing will likely continue to grow. This increasing affluence will bring greater education, a labor force with more subtle methods at its command for seeking its new values and demands, and an increased emphasis on social, ego, and self-fulfillment needs.

George Vojta, a Citibank vice president, is one of several spokesmen identifying the growing debate on whether future life and work should be based on notions of efficiency or equality. He is a reasoned proponent of free enterprise, which he believes can more efficiently use national resources than can government enterprise because in Schumpeter's terms private enterprise, under pressure to survive, is more likely to destroy old systems and replace with new, while government dominated enterprise, not undergoing similar pressures, often goes the way of Britain, Italy, or the Communist nations. In contrast to William Lucy, Vojta maintains that service jobs will be outpaced by skilled professional, technical, and managerial job growth, and that while the individual productivity of these skilled workers will not markedly increase, the new technology they will direct will yield increasing productivity and opportunity in the service sector.

Only at the risk of its own domestic and international stability can the United States ignore the needs of the developing countries, says Cecilio Morales, an officer of the Inter-American Development Bank. He identifies the gap between industrial and developing countries in the fact that the industrial countries now have almost the entire world stock of infrastructure, technical knowhow, and scientific research capacity. At the same time, high levels of unemployment and poverty in the Third World foster local political instabilities and subsequent international peril points. In the new century, he naturally sees the need for increasing developmental lending, but more important, and even more painful to the United States and Europe, he foresees the need to shift many of their soft-goods industries to those developing nations that offer more natural advantages.

This modest volume is a first-rate repository of seminal ideas for those in business, government, or labor who have the will and courage to look ahead to the next 100 years. All will not agree with these previsions of life and work, but few will lightly cast aside these thoughts.

—KENNETH G. VAN AUKEN, JR.
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Bureau of Labor Statistics

Want to get ahead? Consider your generation

Birth and Fortune: The Impact of Numbers on Personal Welfare. By Richard A. Easterlin. New York, Basic Books, Inc., 1980. 205 pp. $11.95.

Is the American malaise identified by former President Carter a temporary blemish or a permanent scar? Economist Richard A. Easterlin believes it is temporary, the result of 1950's baby-boom children desperately competing for good jobs, career promotions, housing, and living space. The national mood will change when the 1970's baby-bust generation comes of age after 1985.

Birth and Fortune is the best-written introduction to the theory that population changes affect and are affected by our sense of economic well-being. After World War II, "government policies stabilizing demand and capping immigration set the stage for the leading role that generation size today plays in determining a cohort's economic welfare." Your cohort or generation now determines, *inter alia*, your economic future; your chances of marrying, having children, and staying married; and your vulnerability to psychological stress and mental illness. Although "other important influences" are also at work, a "baby-boom generation finds the going comparatively tough. Correspondingly, a baby-bust generation will find life relatively easy."

The book is divided into four parts. The first two chapters summarize the argument and the second three discuss the implications of demographic waves on the family. Part three outlines the economic effects of population changes and the final two chapters contain predictions.

Demographic wave theory argues that the relative *size* of your generation (or cohort) blesses or burdens you throughout your lifetime. In the United States, the lucky was born during the 1930's. Its children are the unlucky ones born in the 1950's. The "baby-bust" of the 1960's and 1970's will make life easy for the youth of the 1980's and 1990's, but the 1980's baby boom expected because of these good times will increase competition again after 2005. And so it goes. Every 20 years, a new lucky or unlucky generation comes of age.

Generation size shows up in decisions to marry and have children. A couple's economic prospects depend on their potential earnings and their material aspirations. Because "people generally find mates from within the same economic class," Easterlin approximates earnings potential by comparing the actual income of a young man to his parents' income. As the young man's income rises relative to his parents' income, he (and other young adults) "will feel less economic pressure and hence freer to marry and have children." Using crude approximations, Easterlin finds, not surprisingly, rising relative incomes for young men during the 1946 to 1957 baby boom and declining relative incomes to explain the baby bust since (except for the 1965–69 Vietnam-era boom).

But what about the effects of the pill and women's liberation? Easterlin's not too convincing explanation asserts: "that traditional sex-role attitudes predominate in the population," that improved contraception techniques primarily permit young couples to respond faster to changing economic pressures; and that women still hold largely "female" jobs. Thus, "traditional sex roles will persist." Contraception and liberation only accentuate trends dictated by economics.

Easterlin believes that the social forces reshaping American life *reinforce* more important generation-size effects. The discussion of divorce is illustrative. The "typical" male finds his success linked to his work. "The woman's sense of personal fullfillment . . . in contrast, depends much more on her sense as a parent than as a worker." Couples from large and small generations "retain the same notions about their respective roles," but marital strains and divorce are more common in a large generation.

Large generations do more than break up families and reduce levels of social well-being. They also aggravate inflation, the final nail in the picture that "creates a general feeling of deterioration in society."

How do large generations contribute to stagflation? Easterlin believes that employers hire older experienced workers and younger workers in fixed proportions. When experienced workers are available, employers can hire both old and young and increase production. But large generations lead to a labor market mismatch that impairs traditional Keynesian demand management. When experienced workers are not available, employers stop adding new plants and machines because the employer "cannot staff it with young, inexperienced workers."

Large generations increase the natural or noninflationary unemployment rate in three ways. First, young persons traditionally have higher unemployment rates because searching for a first or new job takes longer without experience. As the youth share of the total work force rises, the unemployment rate creeps up because the "age composition" has changed. There is also a second, reinforcing "age-specific" effect. Because youth and older persons are hired from separate labor queues, more youth increases competition for available jobs and raises the youth unemployment rate. Third, the labor-market problems of young men encourage young women to seek jobs, further increasing competition and raising the youth and total unemployment rate. It is estimated that these labor force changes have added "about 1.5 percentage points" to the noninflationary unemployment rate since 1960.

What does our demographic future hold? Easterlin sees "American society as possibly subject to waves of good times and bad." Declining birth rates (1940–60) make life easy and encourage baby booms. Competition increases when baby booms enter the work force (1960–80), discouraging births. But the baby-bust generation that comes of age between 1980 and 2000 can look forward to "the good news . . . that things will get better." Good times, especially in the 1990's, will prompt another baby boom that will once again increase competition and provoke bad times after 2000. The United States is driven by 20-year fertility cycles, more important than the politicians that will alternately claim and disclaim responsibility for them.

Demographic wave theory argues that the typical couple's outlook depends on its earnings prospects relative to past actual earnings of parents. The all-important male spouse's earnings prospects depend on the share of inexperienced youth workers in the total labor force. This youth share is a result of fertility decisions made 20 years earlier.

Is Easterlin's study of *one* baby boom and bust cycle from 1940 to 1980 really indicative of the future? Easterlin reasserts his belief in the persistence of traditional sex roles, the simple youth share analysis and basic American optimism. However, attitude and structural changes may mute the coming baby boom. But

Easterlin still believes that the baby boom and bust of the last 40 years show that "American life is now subject to a sizable self-generating cycle in economic and social conditions."

Is Easterlin correct to say that the theory will remain valid even if parts of it turn out to be wrong? I believe Easterlin underestimates the social and labor market effects of 1970's insecurities and attitude changes. More important, he draws too sharp a distinction between pre- and post-1940 developments. For example, the 800,000 legal immigrants and refugees admitted to the United States in 1980 are as many as were admitted during the peak 1900–14 immigration waves. To these legal immigrants must be added an unknown number of illegal immigrants—perhaps 300,000 to 500,000 annually. Thus, immigration alone could maintain population growth rates and discourage the expected baby boom.

Some observers look to the 1985 labor force entrance of baby-bust youth with trepidation. They argue that the American economy is ill-prepared to adjust to the labor force shrinkage necessary to spur Easterlin's baby boom. Many want temporary alien workers—guestworkers—to smooth out labor force growth. If the United States obeys these guestworker advocates, it may kill the incentive that would automatically correct this labor force swing.

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NOTES ON CURRENT LABOR STATISTICS

This section of the *Review* presents the principal statistical series collected and calculated by the Bureau of Labor Statistics. A brief introduction to each group of tables provides definitions, notes on the data, sources, and other material usually found in footnotes.

Readers who need additional information are invited to consult the BLS regional offices listed on the inside front cover of this issue of the *Review*. Some general notes applicable to several series are given below.

Seasonal adjustment. Certain monthly and quarterly data are adjusted to eliminate the effect of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might otherwise mask short-term movements of the statistical series. Tables containing these data are identified as "seasonally adjusted." Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years.

Seasonally adjusted labor force data in tables 2-7 were revised in the February 1981 issue of the *Review* to reflect the preceding year's experience. Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are being seasonally adjusted with a new procedure called X-11/ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada Catalogue No. 12-564E, February 1980). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. Revisions of historical data continue to be made only at the end of each calendar year.

Annual revision of the seasonally adjusted payroll data in tables 11, 13, 16, and 18 begins with the August 1980 issue using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 33 and 34 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

Adjustments for price changes. Some data are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of $3 and a current price index number of 150, where 1967 = 100, the hourly rate expressed in 1967 dollars is $2 ($3/150 × 100 = $2). The resulting values are described as "real," "constant," or "1967" dollars.

Availability of information. Data that supplement the tables in this section are published by the Bureau of Labor Statistics in a variety of sources. Press releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule given below. The *BLS Handbook of Labor Statistics*, Bulletin 2070, provides more detailed data and greater historical coverage for most of the statistical series presented in the *Monthly Labor Review*. More information from the household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau, and in two comprehensive data books issued annually—*Employment and Earnings, United States* and *Employment and Earnings, States and Areas*. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

Symbols

p = preliminary. To improve the timeliness of some series, preliminary figures are issued based on representative but incomplete returns.

r = revised. Generally this revision reflects the availability of later data but may also reflect other adjustments.

n.e.c. = not elsewhere classified.

Schedule of release dates for major BLS statistical series

Series	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	January 8	December	February 5	January	1-11
Producer Price Index	January 12	December	February 12	January	26-30
Consumer Price Index	January 22	December	February 25	January	22-25
Real earnings	January 22	December	February 25	January	14-20
Labor turnover in manufacturing	January 27	December			12-13
Productivity and costs:					
Nonfarm business and manufacturing	January 28	4th quarter			31-34
Work stoppages	January 29	December	February 26	January	37
Major collective bargaining settlements	January 29	1981			35-36

NOTE: Because of budget reductions in the Bureau of Labor Statistics, the labor turnover series will be discontinued effective with the release of December 1981 data in January 1982.

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 60,000 households beginning in May 1981, selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

Definitions

Employed persons are (1) those who worked for pay any time during the week which includes the 12th day of the month or who worked unpaid for 15 hours or more in a family-operated enterprise and (2) those who were temporarily absent from their regular jobs because of illness, vacation, industrial dispute, or similar reasons. A person working at more than one job is counted only in the job at which he or she worked the greatest number of hours.

Unemployed persons are those who did not work during the survey week, but were available for work except for temporary illness and had looked for jobs within the preceding 4 weeks. Persons who did not look for work because they were on layoff or waiting to start new jobs within the next 30 days are also counted among the unemployed. The **unemployment rate** represents the number unemployed as a percent of the civilian labor force.

The **civilian labor force** consists of all employed or unemployed persons in the civilian noninstitutional population; the **total labor force** includes military personnel. Persons **not in the labor force** are those not classified as employed or unemployed; this group includes persons retired, those engaged in their own housework, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job market factors, and those who are voluntarily idle. The **noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy.

Full-time workers are those employed at least 35 hours a week; **part-time workers** are those who work fewer hours. Workers on part-time schedules for economic reasons (such as slack work, terminating or starting a job during the week, material shortages, or inability to find full-time work) are among those counted as being on full-time status, under the assumption that they would be working full time if conditions permitted. The survey classifies unemployed persons in full-time or part-time status by their reported preferences for full-time or part-time work.

Notes on the data

From time to time, and especially after a decennial census, adjustments are made in the Current Population Survey figures to correct for estimating errors during the preceding years. These adjustments affect the comparability of historical data presented in table 1. A description of these adjustments and their effect on the various data series appear in the Explanatory Notes of *Employment and Earnings*.

Data in tables 2–7 are seasonally adjusted, based on the seasonal experience through December 1980.

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950–80

[Numbers in thousands]

Year	Total noninstitutional population	Total labor force		Civilian labor force						Not in labor force
					Employed			Unemployed		
		Number	Percent of population	Total	Total	Agriculture	Nonagricultural industries	Number	Percent of labor force	
1950	106,645	63,858	59.9	62,208	58,918	7,160	51,758	3,288	5.3	42,787
1955	112,732	68,072	60.4	65,023	62,170	6,450	55,722	2,852	4.4	44,660
1960	119,759	72,142	60.2	69,628	65,778	5,458	60,318	3,852	5.5	47,617
1964	127,224	75,830	59.6	73,091	69,305	4,523	64,782	3,786	5.2	51,394
1965	129,236	77,178	59.7	74,455	71,088	4,361	66,726	3,366	4.5	52,058
1966	131,180	78,893	60.1	75,770	72,895	3,979	68,915	2,875	3.8	52,288
1967	133,319	80,793	60.6	77,347	74,372	3,844	70,527	2,975	3.8	52,527
1968	135,562	82,272	60.7	78,737	75,920	3,817	72,103	2,817	3.6	53,291
1969	137,841	84,240	61.1	80,734	77,902	3,606	74,296	2,832	3.5	53,602
1970	140,182	85,903	61.3	82,715	78,627	3,462	75,165	4,088	4.9	54,280
1971	142,596	86,929	61.0	84,113	79,120	3,387	75,732	4,993	5.9	55,666
1972	145,775	88,991	61.0	86,542	81,702	3,472	78,230	4,840	5.6	56,785
1973	148,263	91,040	61.4	88,714	84,409	3,452	80,957	4,304	4.9	57,222
1974	150,827	93,240	61.8	91,011	85,935	3,492	82,443	5,076	5.6	57,587
1975	153,449	94,793	61.8	92,613	84,783	3,380	81,403	7,830	8.5	58,655
1976	156,048	96,917	62.1	94,773	87,485	3,297	84,188	7,288	7.7	59,130
1977	158,559	99,534	62.8	97,401	90,546	3,244	87,302	6,855	7.0	59,025
1978	161,058	102,537	63.7	100,420	94,373	3,342	91,031	6,047	6.0	58,521
1979	163,620	104,996	64.2	102,908	96,945	3,297	93,648	5,963	5.8	58,623
1980	166,246	106,821	64.3	104,719	97,270	3,310	93,960	7,448	7.1	59,425

2. Employment status by sex, age, and race, seasonally adjusted

[Numbers in thousands]

Employment status	Annual average		1980		1981										
	1979	1980	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
TOTAL															
Total noninstitutional population[1]	163,620	166,246	167,201	167,386	167,585	167,747	167,902	168,071	168,272	168,480	168,685	168,855	169,049	169,252	169,435
Total labor force	104,996	106,821	107,404	107,191	107,868	107,802	108,305	108,851	109,533	108,307	108,603	108,762	108,401	108,893	109,187
Civilian noninstitutional population[1]	161,532	164,143	165,082	165,272	165,460	165,627	165,774	165,941	166,145	166,349	166,546	166,695	166,884	167,095	167,277
Civilian labor force	102,908	104,719	105,285	105,067	105,543	105,681	106,177	106,722	107,406	106,176	106,464	106,602	106,236	106,736	107,029
Employed	96,945	97,270	97,339	97,282	97,696	97,927	98,412	98,976	99,235	98,392	98,962	98,944	98,270	98,217	98,025
Agriculture	3,297	3,310	3,340	3,394	3,403	3,281	3,276	3,463	3,353	3,265	3,258	3,370	3,310	3,337	3,363
Nonagricultural industries	93,648	93,960	93,999	93,888	94,294	94,646	95,136	95,513	95,882	95,127	95,704	95,574	94,959	94,880	94,662
Unemployed	5,963	7,448	7,946	7,785	7,847	7,754	7,764	7,746	8,171	7,784	7,502	7,657	7,966	8,520	9,004
Unemployment rate	5.8	7.1	7.5	7.4	7.4	7.3	7.3	7.3	7.6	7.3	7.0	7.2	7.5	8.0	8.4
Not in labor force	58,623	59,425	59,797	60,205	59,917	59,946	59,598	59,219	58,739	60,173	60,082	60,093	60,648	60,359	60,248
Men, 20 years and over															
Civilian noninstitutional population[1]	68,293	69,607	70,095	70,198	70,320	70,413	70,481	70,574	70,687	70,788	70,894	70,978	71,086	71,208	71,331
Civilian labor force	54,486	55,234	55,539	55,470	55,443	55,445	55,816	56,013	56,395	55,876	55,957	56,045	56,063	56,100	56,194
Employed	52,264	51,972	52,007	52,045	52,091	52,134	52,511	52,750	52,849	52,451	52,811	52,724	52,608	52,327	52,151
Agriculture	2,350	2,355	2,372	2,331	2,378	2,289	2,296	2,409	2,349	2,320	2,329	2,402	2,343	2,388	2,358
Nonagricultural industries	49,913	49,617	49,635	49,714	49,713	49,844	50,215	50,342	50,500	50,131	50,482	50,323	50,264	49,939	49,794
Unemployed	2,223	3,261	3,532	3,425	3,352	3,312	3,305	3,262	3,546	3,425	3,147	3,321	3,455	3,733	4,043
Unemployment rate	4.1	5.9	6.4	6.2	6.0	6.0	5.9	5.8	6.3	6.1	5.6	5.9	6.2	6.7	7.2
Not in labor force	13,807	14,373	14,556	14,728	14,877	14,968	14,665	14,561	14,292	14,912	14,937	14,933	15,023	15,108	15,137
Women, 20 years and over															
Civilian noninstitutional population[1]	76,860	78,295	78,842	78,959	79,071	79,175	79,271	79,377	79,498	79,617	79,739	79,848	79,968	80,095	80,211
Civilian labor force	38,910	40,243	40,629	40,570	40,942	41,090	41,293	41,481	41,852	41,743	41,879	41,857	41,395	41,911	42,113
Employed	36,698	37,696	37,909	37,820	38,191	38,410	38,567	38,760	39,014	39,011	39,082	39,155	38,576	38,958	39,050
Agriculture	591	575	574	665	621	615	606	603	583	562	575	601	603	583	655
Nonagricultural industries	36,107	37,120	37,335	37,155	37,570	37,794	37,961	38,157	38,431	38,449	38,507	38,554	37,973	38,376	38,395
Unemployed	2,213	2,547	2,720	2,750	2,750	2,680	2,725	2,721	2,838	2,731	2,797	2,701	2,819	2,953	3,062
Unemployment rate	5.7	6.3	6.7	6.8	6.7	6.5	6.6	6.6	6.8	6.5	6.7	6.5	6.8	7.0	7.3
Not in labor force	37,949	38,052	38,213	38,389	38,129	38,085	37,978	37,896	37,646	37,874	37,860	37,991	38,573	38,184	38,098
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	16,379	16,242	16,145	16,114	16,069	16,039	16,022	15,991	15,961	15,944	15,913	15,869	15,831	15,792	15,735
Civilian labor force	9,512	9,242	9,117	9,027	9,158	9,146	9,068	9,228	9,159	8,558	8,628	8,700	8,778	8,724	8,722
Employed	7,984	7,603	7,423	7,417	7,414	7,384	7,334	7,465	7,372	6,930	7,069	7,065	7,086	6,931	6,823
Agriculture	356	380	394	398	404	376	374	451	421	383	354	368	364	366	350
Nonagricultural industries	7,628	7,223	7,029	7,019	7,010	7,009	6,960	7,014	6,951	6,547	6,715	6,697	6,722	6,565	6,473
Unemployed	1,528	1,640	1,694	1,610	1,744	1,762	1,734	1,763	1,787	1,628	1,559	1,635	1,692	1,793	1,899
Unemployment rate	16.1	17.7	18.6	17.8	19.0	19.3	19.1	19.1	19.5	19.0	18.1	18.8	19.3	20.6	21.8
Not in labor force	6,867	7,000	7,028	7,087	6,911	6,893	6,954	6,763	6,802	7,386	7,285	7,169	7,053	7,068	7,013
White															
Civilian noninstitutional population[1]	141,614	143,657	144,359	144,500	144,651	144,774	144,882	145,006	145,160	145,316	145,464	145,575	145,715	145,871	146,007
Civilian labor force	90,602	92,171	92,562	92,383	92,832	93,035	93,313	93,860	94,506	93,464	93,767	93,789	93,355	93,845	94,045
Employed	86,025	86,380	86,409	86,377	86,620	86,940	87,291	87,791	88,083	87,500	87,979	88,046	87,329	87,344	87,058
Unemployed	4,577	5,790	6,153	6,006	6,213	6,095	6,022	6,069	6,422	5,964	5,787	5,743	6,026	6,501	6,987
Unemployment rate	5.1	6.3	6.6	6.5	6.7	6.6	6.5	6.5	6.8	6.4	6.2	6.1	6.5	6.9	7.4
Not in labor force	51,011	51,486	51,797	52,117	51,819	51,739	51,569	51,146	50,654	51,852	51,697	51,786	52,360	52,026	51,962
Black and other															
Civilian noninstitutional population[1]	19,918	20,486	20,723	20,771	20,809	20,853	20,892	20,936	20,985	21,033	21,081	21,120	21,169	21,224	21,270
Civilian labor force	12,306	12,548	12,706	12,668	12,684	12,598	12,765	12,899	12,895	12,741	12,658	12,793	12,872	12,913	12,951
Employed	10,920	10,890	10,922	10,895	11,051	10,942	11,020	11,193	11,138	10,928	10,939	10,877	10,924	10,905	10,944
Unemployed	1,386	1,658	1,784	1,773	1,634	1,655	1,745	1,706	1,757	1,813	1,719	1,916	1,948	2,008	2,007
Unemployment rate	11.3	13.2	14.0	14.0	12.9	13.1	13.7	13.2	13.6	14.2	13.6	15.0	15.1	15.5	15.5
Not in labor force	7,612	7,838	8,017	8,103	8,125	8,255	8,127	8,037	8,090	8,292	8,423	8,327	8,297	8,311	8,319

[1] As in table 1, population figures are not seasonally adjusted.

3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1980		1981										
	1979	1980	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
CHARACTERISTIC															
Total employed, 16 years and over	96,945	97,270	97,339	97,282	97,696	97,927	98,412	98,976	99,235	98,392	98,962	98,944	98,270	98,217	98,025
Men	56,499	55,988	55,897	55,920	56,012	56,045	56,383	56,688	56,718	56,026	56,494	56,368	56,349	56,046	55,783
Women	40,446	41,283	41,442	41,362	41,684	41,882	42,029	42,288	42,517	42,366	42,467	42,577	41,920	42,171	42,241
Married men, spouse present	39,090	38,302	38,167	38,231	38,182	38,113	38,365	38,510-	38,498	38,216	38,283	38,315	38,169	38,059	37,798
Married women, spouse present	22,724	23,097	23,065	23,063	23,352	23,356	23,513	23,529	23,831	23,763	23,820	23,683	23,174	23,399	23,326
OCCUPATION															
White-collar workers	49,342	50,809	51,148	51,066	51,594	51,698	51,746	51,801	51,967	51,959	51,857	52,123	51,826	52,104	51,935
Professional and technical	15,050	15,613	15,863	15,810	15,965	15,813	15,827	15,754	15,688	16,057	15,966	16,299	16,254	16,347	16,284
Managers and administrators, except farm	10,516	10,919	11,016	11,009	11,363	11,488	11,565	11,444	11,260	11,174	11,418	11,217	11,341	11,434	11,210
Salesworkers	6,163	6,172	6,155	6,175	6,265	6,271	6,220	6,145	6,461	6,440	6,220	6,369	6,295	6,225	6,269
Clerical workers	17,613	18,105	18,114	18,071	18,001	18,125	18,135	18,457	18,557	18,288	18,254	18,238	17,937	18,099	18,172
Blue-collar workers	32,066	30,800	30,550	30,373	30,338	30,446	30,594	31,156	31,373	30,922	31,038	31,113	30,637	30,222	29,904
Craft and kindred workers	12,880	12,529	12,424	12,337	12,306	12,386	12,605	12,624	12,743	12,482	12,575	12,508	12,202	12,124	12,096
Operatives, except transport	10,909	10,346	10,247	10,194	10,331	10,390	10,189	10,524	10,609	10,550	10,567	10,501	10,334	10,187	9,913
Transport equipment operatives	3,612	3,468	3,429	3,402	3,322	3,361	3,363	3,411	3,390	3,425	3,481	3,499	3,453	3,530	3,364
Nonfarm laborers	4,665	4,456	4,450	4,440	4,380	4,309	4,437	4,596	4,632	4,466	4,415	4,605	4,649	4,381	4,531
Service workers	12,834	12,958	12,888	12,982	12,946	13,070	13,279	13,255	13,213	12,930	13,284	13,002	13,093	13,231	13,419
Farmworkers	2,703	2,704	2,729	2,804	2,737	2,662	2,679	2,834	2,707	2,648	2,689	2,732	2,717	2,752	2,791
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture															
Wage and salary workers	1,413	1,384	1,417	1,411	1,465	1,336	1,338	1,524	1,464	1,377	1,457	1,472	1,416	1,470	1,395
Self-employed workers	1,580	1,626	1,612	1,655	1,615	1,610	1,615	1,648	1,644	1,657	1,568	1,629	1,649	1,616	1,631
Unpaid family workers	304	297	324	305	284	325	312	290	231	258	235	250	254	264	333
Nonagricultural industries															
Wage and salary workers	86,540	86,706	86,643	86,513	87,125	87,236	87,870	88,195	88,877	87,734	88,291	88,189	87,457	87,556	87,265
Government	15,369	15,624	15,651	15,653	15,738	15,589	15,685	15,628	15,512	15,460	15,349	15,140	15,111	15,151	15,066
Private industries	71,171	71,081	70,992	70,860	71,387	71,647	72,185	72,567	73,365	72,274	72,942	73,048	72,346	72,405	72,199
Private households	1,240	1,166	1,148	1,110	1,197	1,176	1,235	1,241	1,164	1,146	1,211	1,236	1,052	1,114	1,173
Other industries	69,931	69,915	69,844	69,750	70,190	70,471	70,949	71,327	72,201	71,128	71,731	71,812	71,294	71,291	71,026
Self-employed workers	6,652	6,850	6,943	6,973	6,839	6,923	6,896	7,021	6,761	7,005	6,886	6,942	7,093	7,033	7,001
Unpaid family workers	455	404	405	396	422	371	354	306	338	369	389	378	392	448	423
PERSONS AT WORK[1]															
Nonagricultural industries	88,133	88,325	88,694	88,468	89,499	89,441	89,583	89,202	89,870	89,625	90,837	89,823	88,886	89,448	89,359
Full-time schedules	72,647	72,022	72,265	72,131	72,807	72,945	72,875	72,761	73,375	73,115	74,232	72,932	72,192	72,187	72,276
Part time for economic reasons	3,281	3,965	4,176	4,218	4,474	4,145	4,227	4,044	4,143	3,798	4,225	4,187	4,537	5,026	4,988
Usually work full time	1,325	1,669	1,620	1,647	1,698	1,622	1,638	1,517	1,630	1,367	1,632	1,654	1,675	2,023	1,898
Usually work part time	1,956	2,296	2,556	2,571	2,776	2,523	2,589	2,527	2,513	2,431	2,593	2,533	2,862	3,003	3,090
Part time for noneconomic reasons	12,205	12,338	12,253	12,119	12,218	12,351	12,481	12,397	12,352	12,713	12,380	12,704	12,157	12,235	12,094

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial disputes.

4. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1980		1981										
	1979	1980	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
CHARACTERISTIC															
Total, 16 years and over	5.8	7.1	7.5	7.4	7.4	7.3	7.3	7.3	7.6	7.3	7.0	7.2	7.5	8.0	8.4
Men, 20 years and over	4.1	5.9	6.4	6.2	6.0	6.0	5.9	5.8	6.3	6.1	5.6	5.9	6.2	6.7	7.2
Women, 20 years and over	5.7	6.3	6.7	6.8	6.7	6.5	6.6	6.6	6.8	6.5	6.7	6.5	6.8	7.0	7.3
Both sexes, 16 to 19 years	16.1	17.7	18.6	17.8	19.0	19.3	19.1	19.1	19.5	19.0	18.1	18.8	19.3	20.6	21.8
White, total	5.1	6.3	6.6	6.5	6.7	6.6	6.5	6.5	6.8	6.4	6.2	6.1	6.5	6.9	7.4
Men, 20 years and over	3.6	5.2	5.7	5.5	5.5	5.4	5.4	5.2	5.6	5.3	4.9	5.1	5.3	5.9	6.3
Women, 20 years and over	5.0	5.6	5.8	5.9	6.0	5.7	5.6	5.7	6.0	5.7	5.8	5.4	5.7	6.1	6.4
Both sexes, 16 to 19 years	13.9	14.8	16.4	15.4	16.8	17.4	16.9	17.2	18.0	16.5	16.1	15.6	17.0	17.6	19.3
Black and other, total	11.3	13.2	14.0	14.0	12.9	13.1	13.7	13.2	13.6	14.2	13.6	15.0	15.1	15.5	15.5
Men, 20 years and over	8.4	11.4	12.0	11.6	10.5	10.8	10.8	10.6	11.8	12.5	11.6	12.4	13.0	13.3	14.0
Women, 20 years and over	10.1	11.1	12.2	12.3	11.0	11.9	12.6	11.8	12.0	12.0	12.0	12.8	13.7	13.3	12.8
Both sexes, 16 to 19 years	33.5	35.8	36.6	37.5	36.5	35.4	37.3	36.1	33.6	38.6	36.4	45.7	37.5	42.9	41.3
Married men, spouse present	2.7	4.2	4.4	4.3	4.2	4.1	4.1	3.8	4.1	4.2	3.9	3.9	4.3	4.7	5.1
Married women, spouse present	5.1	5.8	5.9	5.8	6.2	5.8	6.0	5.9	5.9	5.6	5.6	5.3	5.9	6.1	6.6
Women who head families	8.3	9.1	9.9	10.4	10.5	9.6	9.4	9.8	10.3	10.6	11.5	9.8	10.6	10.7	10.9
Full-time workers	5.3	6.8	7.4	7.3	7.1	7.1	7.1	6.9	7.3	7.0	6.7	6.7	7.2	7.7	8.1
Part-time workers	8.7	8.7	8.6	8.2	9.2	9.1	9.0	9.0	9.7	9.2	9.3	9.7	9.6	9.5	10.2
Unemployed 15 weeks and over	1.2	1.7	2.2	2.3	2.2	2.1	2.1	2.0	2.0	2.2	2.0	2.1	2.1	2.1	2.2
Labor force time lost[1]	6.3	7.9	8.3	8.2	8.2	8.1	8.1	8.2	8.6	8.0	7.9	7.9	8.5	9.1	9.4
OCCUPATION															
White-collar workers	3.3	3.7	3.9	4.0	3.9	3.7	3.9	4.0	4.1	3.8	4.1	3.9	4.1	4.1	4.2
Professional and technical	2.4	2.5	2.5	2.6	2.8	2.6	2.7	3.2	2.9	2.8	2.8	2.4	2.8	2.6	2.7
Managers and administrators, except farm	1.9	2.4	2.4	2.5	2.4	2.4	2.6	2.4	2.7	2.8	2.7	2.8	2.7	2.7	3.0
Salesworkers	3.9	4.4	4.8	4.7	4.4	4.0	3.8	4.0	4.6	4.1	5.1	4.7	5.2	4.9	5.2
Clerical workers	4.6	5.3	5.6	5.8	5.7	5.3	5.9	5.6	5.6	5.3	5.7	5.6	5.7	6.1	6.1
Blue-collar workers	6.9	10.0	10.7	10.5	10.2	10.1	9.8	9.6	10.0	9.8	9.4	9.3	10.2	11.0	11.8
Craft and kindred workers	4.5	6.6	7.1	7.1	6.8	7.8	7.1	6.8	7.7	7.2	6.7	6.9	7.6	8.4	8.4
Operatives, except transport	8.4	12.2	13.0	12.9	12.1	11.9	11.3	11.5	11.9	11.0	11.1	11.0	11.5	12.8	14.2
Transport equipment operatives	5.4	8.8	10.6	8.8	9.1	8.3	9.3	8.1	8.2	8.4	6.9	7.9	8.9	7.9	10.7
Nonfarm laborers	10.8	14.6	15.0	14.8	15.0	14.9	14.1	13.8	13.1	14.8	14.2	12.9	14.4	15.7	16.2
Service workers	7.1	7.9	8.3	7.8	8.0	8.7	8.1	8.5	9.4	9.0	8.0	8.9	8.9	9.3	9.8
Farmworkers	3.8	4.4	4.0	4.0	5.0	4.7	5.1	3.7	5.4	6.0	4.5	5.6	3.7	6.1	6.1
INDUSTRY															
Nonagricultural private wage and salary workers[2]	5.7	7.4	7.8	7.7	7.5	7.5	7.3	7.2	7.8	7.4	7.2	7.2	7.6	8.1	8.5
Construction	10.2	14.2	14.8	13.8	13.3	13.2	14.7	14.4	16.3	16.6	15.0	16.7	16.3	18.0	18.2
Manufacturing	5.5	8.5	8.9	8.8	8.4	8.4	8.0	7.4	7.9	7.6	7.3	7.0	7.8	8.6	9.4
Durable goods	5.0	8.9	9.0	9.0	8.3	8.5	7.9	7.3	7.3	7.4	7.3	6.4	7.6	8.6	9.4
Nondurable goods	6.4	7.9	8.6	8.5	8.5	8.2	8.3	7.6	8.9	7.8	7.3	7.9	8.0	8.6	9.5
Transportation and public utilities	3.7	4.9	4.9	4.9	5.8	5.5	6.4	5.7	5.9	4.7	4.0	4.8	4.0	4.6	5.5
Wholesale and retail trade	6.5	7.4	8.2	8.3	7.6	7.6	7.3	7.3	8.4	7.5	7.9	7.8	8.6	8.3	8.7
Finance and service industries	4.9	5.3	5.5	5.5	5.8	6.0	5.6	5.9	5.9	5.8	5.6	5.6	5.9	6.3	6.1
Government workers	3.7	4.1	4.2	4.1	4.4	4.3	4.6	4.9	4.8	4.5	4.5	4.4	4.6	4.6	5.3
Agricultural wage and salary workers	9.1	10.8	10.1	10.6	11.5	12.1	11.9	9.1	11.1	13.1	10.3	12.6	10.6	13.3	14.4

[1] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

[2] Includes mining, not shown separately.

5. Unemployment rates, by sex and age, seasonally adjusted

Sex and age	Annual average		1980		1981										
	1979	1980	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Total, 16 years and over	5.8	7.1	7.5	7.4	7.4	7.3	7.3	7.3	7.6	7.3	7.0	7.2	7.5	8.0	8.4
16 to 19 years	16.1	17.7	18.6	17.8	19.0	19.3	19.1	19.1	19.5	19.0	18.1	18.8	19.3	20.6	21.8
16 to 17 years	18.1	20.0	21.4	19.9	21.0	21.4	21.3	22.0	21.6	22.8	19.3	20.5	21.2	21.4	23.1
18 to 19 years	14.6	16.1	16.5	16.4	17.5	17.9	17.7	17.2	18.2	17.3	17.7	17.4	18.1	19.9	20.7
20 to 24 years	9.0	11.5	12.1	11.7	11.9	11.8	11.7	12.1	12.9	12.1	11.3	11.8	12.1	12.8	13.0
25 years and over	3.9	5.0	5.4	5.3	5.3	5.1	5.2	5.0	5.3	5.2	5.1	5.1	5.4	5.8	6.1
25 to 54 years	4.1	5.4	5.9	5.8	5.7	5.5	5.5	5.4	5.6	5.6	5.4	5.4	5.8	6.1	6.6
55 years and over	3.0	3.3	3.3	3.5	3.5	3.6	3.7	3.3	3.3	3.4	3.5	3.5	3.8	3.9	3.7
Men, 16 years and over	5.1	6.9	7.4	7.2	7.2	7.1	7.0	6.9	7.4	7.1	6.6	7.0	7.2	7.7	8.3
16 to 19 years	15.8	18.2	19.8	19.0	20.3	20.1	19.5	19.3	20.2	19.8	18.4	19.7	19.3	19.7	22.0
16 to 17 years	17.9	20.4	22.3	20.5	23.0	22.1	21.1	22.7	22.7	24.4	19.8	21.5	21.2	20.6	23.0
18 to 19 years	14.2	16.7	17.8	17.8	18.5	18.7	18.6	17.0	18.3	18.1	17.8	18.1	18.1	19.1	21.2
20 to 24 years	8.6	12.5	13.2	12.5	12.8	12.7	13.0	13.2	14.2	12.8	11.3	12.7	12.9	13.9	14.6
25 years and over	3.3	4.7	5.1	4.9	4.9	4.8	4.7	4.6	4.8	5.0	4.7	4.8	5.0	5.5	5.8
25 to 54 years	3.4	5.1	5.6	5.4	5.2	5.2	5.1	4.9	5.1	5.3	4.9	5.0	5.5	5.9	6.4
55 years and over	2.9	3.3	3.3	3.3	3.4	3.4	3.2	3.1	3.4	3.5	3.4	3.4	3.5	3.8	3.6
Women, 16 years and over	6.8	7.4	7.7	7.7	7.7	7.6	7.7	7.7	7.9	7.6	7.7	7.5	7.9	8.3	8.5
16 to 19 years	16.4	17.2	17.2	16.5	17.5	18.4	18.7	18.9	18.7	18.2	17.7	17.8	19.3	21.5	21.5
16 to 17 years	18.3	19.5	20.3	19.3	18.7	20.5	21.6	21.1	20.4	20.6	18.7	19.5	21.1	22.4	23.3
18 to 19 years	15.0	15.6	15.1	14.8	16.4	17.0	16.5	17.4	18.2	16.4	17.5	16.8	18.1	20.8	20.1
20 to 24 years	9.6	10.3	10.8	10.8	10.8	10.8	10.1	10.9	11.4	11.2	11.3	10.8	11.2	11.5	11.2
25 years and over	4.8	5.5	5.8	5.9	5.8	5.6	5.9	5.6	5.9	5.6	5.7	5.5	5.9	6.1	6.4
25 to 54 years	5.2	5.9	6.2	6.3	6.3	5.9	6.2	6.0	6.4	6.0	6.1	5.9	6.3	6.5	6.9
55 years and over	3.2	3.2	3.4	3.9	3.6	3.9	4.5	3.7	3.3	3.3	3.7	3.6	4.4	4.1	3.8

6. Unemployed persons, by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	1980		1981										
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
NUMBER OF UNEMPLOYED													
Lost last job	4,229	4,225	3,847	3,896	3,846	3,819	4,084	4,219	3,691	3,929	4,338	4,422	4,786
On layoff	1,453	1,470	1,258	1,267	1,299	1,280	1,369	1,367	1,178	1,205	1,412	1,607	1,790
Other job losers	2,776	2,756	2,590	2,629	2,547	2,539	2,715	2,852	2,513	2,724	2,925	2,815	2,996
Left last job	887	813	907	884	863	854	1,009	863	898	838	889	962	886
Reentered labor force	1,896	1,868	2,039	1,970	2,040	2,017	2,126	1,955	2,022	1,939	1,949	2,172	2,311
Seeking first job	880	868	1,000	929	986	987	936	956	873	944	953	987	977
PERCENT DISTRIBUTION													
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	53.5	54.3	49.4	50.7	49.7	49.7	50.1	52.8	49.3	51.4	53.4	51.8	53.4
On layoff	18.4	18.9	16.1	16.5	16.8	16.7	16.8	17.1	15.7	15.7	17.4	18.8	20.0
Other job losers	35.1	35.4	33.2	34.2	32.9	33.1	33.3	35.7	33.6	35.6	36.0	33.0	33.4
Job leavers	11.3	10.5	11.6	11.5	11.2	11.1	12.4	10.8	12.0	11.0	10.9	11.3	9.9
Reentrants	24.0	24.0	26.2	25.7	26.4	26.3	26.1	24.5	27.0	25.4	24.0	25.4	25.8
New entrants	11.2	11.2	12.8	12.1	12.7	12.9	11.5	12.0	11.7	12.3	11.7	11.6	10.9
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE													
Job losers	4.0	4.0	3.6	3.7	3.6	3.6	3.8	4.0	3.5	3.7	4.1	4.1	4.5
Job leavers	.9	.8	.9	.8	.8	.8	.9	.8	.8	.8	.8	.9	.8
Reentrants	1.8	1.8	1.9	1.9	1.9	1.9	2.0	1.8	1.9	1.8	1.8	2.0	2.2
New entrants	.8	.8	.9	.9	.9	.9	.9	.9	.8	.9	.9	.9	.9

7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1980		1981										
	1979	1980	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Less than 5 weeks	2,869	3,208	3,108	3,115	3,250	3,203	3,209	3,074	3,360	3,172	3,187	3,161	3,383	3,652	3,815
5 to 14 weeks	1,892	2,411	2,524	2,217	2,264	2,324	2,356	2,462	2,581	2,360	2,196	2,345	2,489	2,605	2,861
15 weeks and over	1,202	1,829	2,329	2,378	2,358	2,250	2,192	2,105	2,168	2,315	2,100	2,194	2,212	2,251	2,330
15 to 26 weeks	684	1,028	1,213	1,231	1,079	992	1,013	1,001	1,022	1,205	1,068	1,059	1,151	1,156	1,213
27 weeks and over	518	802	1,116	1,147	1,279	1,257	1,179	1,104	1,146	1,110	1,032	1,135	1,061	1,095	1,117
Average (mean) duration, in weeks	10.9	11.9	13.6	13.5	14.4	14.4	14.0	13.7	13.2	14.2	13.9	14.5	13.7	13.7	13.2

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by 166,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

LABOR TURNOVER DATA in this section are compiled from personnel records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies. A sample of 40,000 establishments represents all industries in the manufacturing and mining sectors of the economy.

Definitions

Employed persons are all persons who received pay (including holiday and sick pay) for any part of the payroll period including the 12th of the month. Persons holding more than one job (about 5 percent of all persons in the labor force) are counted in each establishment which reports them.

Production workers in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 14–20 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities, in wholesale and retail trade, in finance, insurance, and real estate, and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to eliminate the effects of price change. The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated to underlying wage-rate developments: fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries. **Spendable earnings** are earnings from which estimated social security and Federal income taxes have been deducted. The Bureau of Labor Statistics computes spendable earnings from gross weekly earnings for only two illustrative cases: (1) a worker with no dependents and (2) a married worker with three dependents.

Hours represent the average weekly hours of production or nonsupervisory workers for which pay was received and are different from standard or scheduled hours. **Overtime hours** represent the portion of gross average weekly hours which were in excess of regular hours and for which overtime premiums were paid.

Labor turnover is the movement of all wage and salary workers from one employment status to another. **Accession rates** indicate the average number of persons added to a payroll in a given period per 100 employees; **separation rates** indicate the average number dropped from a payroll per 100 employees. Although month-to-month changes in employment can be calculated from the labor turnover data, the results are not comparable with employment data from the employment and payroll survey. The labor turnover survey measures changes during the calendar month while the employment and payroll survey measures changes from midmonth to midmonth.

Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of June 1981 data, published in the August 1981 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Complete comparable historical unadjusted and seasonally adjusted data are published in a Supplement to Employment and Earnings (unadjusted data from April 1977 through March 1981 and seasonally adjusted data from January 1974 through March 1981) and in *Employment and Earnings, United States, 1909–78*, BLS Bulletin 1312–11 (for prior periods).

Data on recalls were shown for the first time in tables 12 and 13 in the January 1978 issue of the *Review*. For a detailed discussion of the recalls series, along with historical data, see "New Series on Recalls from the Labor Turnover Survey," *Employment and Earnings*, December 1977, pp. 10–19.

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9–20. See also *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976).

The formulas used to construct the spendable average weekly earnings series reflect the latest provisions of the Federal income tax and social security tax laws. For the spendable average weekly earnings formulas for the years 1979–81, see *Employment and Earnings*, March 1981, pp. 10–11. Real earnings data are adjusted using the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W).

8. Employment by industry, 1951–80

[Nonagricultural payroll data, in thousands]

Year	Total	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale and retail trade	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services	Government		
											Total	Federal	State and local
1951	47,819	929	2,637	16,393	4,226	9,742	2,727	7,015	1,956	5,547	6,389	2,302	4,087
1952	48,793	898	2,668	16,632	4,248	10,004	2,812	7,192	2,035	5,699	6,609	2,420	4,188
1953	50,202	866	2,659	17,549	4,290	10,247	2,854	7,393	2,111	5,835	6,645	2,305	4,340
1954	48,990	791	2,646	16,314	4,084	10,235	2,867	7,368	2,200	5,969	6,751	2,188	4,563
1955	50,641	792	2,839	16,882	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1956	52,369	822	3,039	17,243	4,244	10,858	3,018	7,840	2,389	6,497	7,278	2,209	5,069
1957	52,853	828	2,962	17,174	4,241	10,886	3,028	7,858	2,438	6,708	7,616	2,217	5,399
1958	51,324	751	2,817	15,945	3,976	10,750	2,980	7,770	2,481	6,765	7,839	2,191	5,648
1959[1]	53,268	732	3,004	16,675	4,011	11,127	3,082	8,045	2,549	7,087	8,083	2,233	5,850
1960	54,189	712	2,926	16,796	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1961	53,999	672	2,859	16,326	3,903	11,337	3,133	8,204	2,688	7,620	8,594	2,279	6,315
1962	55,549	650	2,948	16,853	3,906	11,566	3,198	8,368	2,754	7,982	8,890	2,340	6,550
1963	56,653	635	3,010	16,995	3,903	11,778	3,248	8,530	2,830	8,277	9,225	2,358	6,868
1964	58,283	634	3,097	17,274	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	632	3,232	18,062	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	627	3,317	19,214	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	613	3,248	19,447	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	606	3,350	19,781	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	619	3,575	20,167	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	623	3,588	19,367	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	609	3,704	18,623	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	628	3,889	19,151	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	642	4,097	20,154	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	697	4,020	20,077	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	752	3,525	18,323	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	779	3,576	18,997	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	813	3,851	19,682	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	851	4,229	20,505	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	958	4,463	21,040	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,174
1980	90,564	1,020	4,399	20,300	5,143	20,386	5,281	15,104	5,168	17,901	16,249	2,866	13,383

[1] Data include Alaska and Hawaii beginning in 1959.

9. Employment by State

[Nonagricultural payroll data, in thousands]

State	Oct. 1980	Sept. 1981	Oct. 1981 p	State	Oct. 1980	Sept. 1981	Oct. 1981 p
Alabama	1,357.8	1,350.4	1,351.2	Montana	283.2	288.9	285.8
Alaska	174.0	184.9	180.4	Nebraska	632.1	636.9	635.8
Arizona	1,007.8	1,012.6	1,022.4	Nevada	406.3	425.9	427.9
Arkansas	754.1	757.8	756.5	New Hampshire	388.4	382.4	380.8
California	9,872.5	9,986.1	9,993.1	New Jersey	3,066.4	3,104.0	(1)
Colorado	1,262.6	1,278.6	1,282.4	New Mexico	462.0	471.7	471.1
Connecticut	1,428.9	1,432.3	1,431.9	New York	7,243.4	7,236.5	7,278.8
Delaware	260.7	259.9	258.6	North Carolina	2,408.0	2,405.9	2,410.3
District of Columbia	609.8	604.6	606.2	North Dakota	250.3	251.2	254.9
Florida	3,606.5	3,754.6	3,767.4	Ohio	4,413.3	4,388.0	4,407.5
Georgia	2,163.8	2,160.4	2,168.7	Oklahoma	1,148.5	1,193.0	1,196.1
Hawaii	400.0	394.8	398.4	Oregon	1,044.1	1,021.2	1,018.6
Idaho	337.8	330.7	330.8	Pennsylvania	4,764.6	4,655.6	4,681.0
Illinois	4,881.9	4,860.0	4,865.2	Rhode Island	403.8	403.8	405.7
Indiana	2,143.2	2,141.4	2,128.4	South Carolina	1,190.4	1,188.5	1,191.4
Iowa	1,096.2	1,082.5	1,082.4	South Dakota	237.2	233.0	234.5
Kansas	952.4	958.4	957.8	Tennessee	1,734.6	1,732.2	1,726.8
Kentucky	1,214.6	1,199.3	1,202.0	Texas	5,975.6	6,183.7	6,212.8
Louisiana	1,599.4	1,649.4	1,656.1	Utah	556.3	556.8	556.9
Maine	426.3	423.6	419.5	Vermont	204.1	203.2	205.1
Maryland	1,689.0	1,688.0	1,690.0	Virginia	2,141.4	2,154.9	2,150.4
Massachusetts	2,664.6	2,655.0	2,681.0	Washington	1,610.4	1,581.8	1,582.6
Michigan	3,491.4	3,484.9	3,471.4	West Virginia	651.3	632.7	633.4
Minnesota	1,783.9	1,782.4	1,782.9	Wisconsin	1,980.3	1,984.1	1,988.2
Mississippi	834.4	824.5	825.1	Wyoming	210.4	212.3	211.6
Missouri	1,972.7	1,979.5	1,976.3	Virgin Islands	35.7	35.2	34.8

[1] Not available.

10. Employment by industry division and major manufacturing group

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1980		1981										
	1979	1980	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.[p]	Nov.[p]
TOTAL	89,823	90,564	91,599	91,750	89,988	90,138	90,720	91,337	91,848	92,481	91,600	91,598	92,159	92,389	92,331
MINING	958	1,020	1,051	1,060	1,066	1,071	1,084	941	957	1,132	1,155	1,169	1,169	1,166	1,177
CONSTRUCTION	4,463	4,399	4,533	4,343	3,995	3,901	4,048	4,246	4,356	4,477	4,554	4,579	4,516	4,494	4,382
MANUFACTURING	21,040	20,300	20,293	20,238	20,075	20,065	20,160	20,253	20,342	20,531	20,337	20,473	20,600	20,353	20,142
Production workers	15,068	14,223	14,190	14,126	13,975	13,971	14,049	14,127	14,195	14,325	14,108	14,230	14,376	14,138	13,935
Durable goods	12,760	12,181	12,156	12,147	12,072	12,042	12,120	12,197	12,235	12,334	12,198	12,188	12,292	12,157	12,021
Production workers	9,110	8,438	8,391	8,374	8,305	8,279	8,345	8,412	8,438	8,500	8,347	8,323	8,440	8,312	8,173
Lumber and wood products	766.9	690.3	687.9	685.9	674.6	674.5	678.3	686.9	703.4	711.0	708.6	701.5	691.0	666.1	647.3
Furniture and fixtures	497.8	468.8	468.6	470.5	469.6	471.7	472.1	478.0	479.0	480.5	472.0	480.6	484.7	482.0	473.7
Stone, clay, and glass products	708.7	665.6	665.2	652.3	635.0	630.6	639.5	652.6	659.7	671.0	666.7	669.1	664.5	653.0	642.9
Primary metal industries	1,253.9	1,144.1	1,123.3	1,136.3	1,136.7	1,137.7	1,141.3	1,149.9	1,147.5	1,155.5	1,135.5	1,140.3	1,138.8	1,108.0	1,097.3
Fabricated metal products	1,717.7	1,609.0	1,587.6	1,586.4	1,580.2	1,578.1	1,585.4	1,583.7	1,586.1	1,606.8	1,584.5	1,590.9	1,607.5	1,584.3	1,562.3
Machinery, except electrical	2,484.8	2,497.0	2,479.6	2,496.8	2,496.9	2,498.4	2,504.3	2,506.1	2,508.6	2,531.3	2,517.4	2,511.4	2,540.7	2,527.8	2,525.4
Electric and electronic equipment	2,116.9	2,103.2	2,109.6	2,118.0	2,114.0	2,112.3	2,119.5	2,129.7	2,134.7	2,152.7	2,138.9	2,146.1	2,164.8	2,157.7	2,133.1
Transportation equipment	2,077.2	1,875.3	1,894.6	1,871.4	1,854.9	1,824.8	1,860.4	1,874.3	1,877.4	1,882.7	1,840.3	1,799.6	1,848.3	1,829.9	1,796.9
Instruments and related products	691.2	708.5	711.2	713.8	712.4	710.1	712.1	714.4	715.2	723.2	722.1	726.2	723.1	719.2	715.3
Miscellaneous manufacturing	444.8	419.3	417.9	405.9	398.0	403.3	406.7	411.3	413.4	419.5	412.3	421.8	428.7	429.3	426.6
Nondurable goods	8,280	8,119	8,137	8,091	8,003	8,023	8,040	8,056	8,107	8,197	8,139	8,285	8,308	8,196	8,121
Production workers	5,958	5,786	5,799	5,752	5,670	5,692	5,704	5,715	5,757	5,825	5,761	5,907	5,936	5,826	5,762
Food and kindred products	1,732.5	1,710.8	1,719.3	1,688.5	1,645.2	1,639.2	1,632.5	1,631.0	1,648.1	1,673.4	1,714.8	1,773.2	1,776.1	1,721.8	1,674.2
Tobacco manufactures	70.0	69.2	75.3	74.4	72.0	70.6	68.3	66.2	65.2	66.4	65.3	75.6	77.7	77.1	75.4
Textile mill products	885.1	852.7	847.8	846.1	841.0	841.1	840.9	841.6	844.3	851.0	836.5	847.3	850.2	833.7	827.3
Apparel and other textile products	1,304.3	1,265.8	1,262.3	1,241.1	1,222.8	1,238.7	1,250.2	1,255.2	1,265.9	1,283.9	1,231.1	1,276.8	1,287.3	1,272.7	1,260.4
Paper and allied products	706.8	694.0	691.4	691.5	687.7	687.7	688.6	690.9	693.1	701.0	696.4	700.3	702.0	692.8	691.5
Printing and publishing	1,235.1	1,258.3	1,268.2	1,278.3	1,269.0	1,273.6	1,278.2	1,280.4	1,281.8	1,286.2	1,286.5	1,289.4	1,294.1	1,298.7	1,308.6
Chemicals and allied products	1,109.3	1,107.4	1,100.1	1,101.2	1,100.1	1,102.9	1,106.8	1,106.2	1,110.3	1,121.1	1,116.6	1,112.0	1,110.5	1,103.3	1,101.3
Petroleum and coal products	209.8	196.6	209.5	206.8	206.5	205.7	207.0	209.5	212.9	215.4	216.1	215.4	212.7	211.0	210.2
Rubber and miscellaneous plastics products	781.6	730.7	730.6	733.2	731.8	734.2	737.2	743.5	749.2	759.0	747.0	756.8	760.8	748.2	738.2
Leather and leather products	245.7	232.6	232.5	229.4	225.9	229.5	230.4	231.7	235.9	239.1	227.5	238.6	237.0	236.7	234.2
TRANSPORTATION AND PUBLIC UTILITIES	5,136	5,143	5,147	5,150	5,063	5,076	5,095	5,120	5,148	5,195	5,177	5,175	5,222	5,200	5,197
WHOLESALE AND RETAIL TRADE	20,192	20,386	20,761	21,138	20,366	20,196	20,290	20,513	20,672	20,795	20,735	20,811	20,919	20,993	21,136
WHOLESALE TRADE	5,204	5,281	5,312	5,315	5,276	5,273	5,293	5,317	5,335	5,381	5,376	5,386	5,370	5,381	5,378
RETAIL TRADE	14,989	15,104	15,449	15,823	15,090	14,923	14,997	15,196	15,337	15,414	15,359	15,425	15,549	15,612	15,758
FINANCE, INSURANCE, AND REAL ESTATE	4,975	5,160	5,223	5,237	5,235	5,245	5,263	5,285	5,326	5,384	5,408	5,408	5,361	5,348	5,344
SERVICES	17,112	17,901	18,118	18,149	17,972	18,126	18,287	18,512	18,633	18,764	18,847	18,835	18,812	18,820	18,790
GOVERNMENT	15,947	16,249	16,473	16,435	16,216	16,458	16,493	16,457	16,414	16,203	15,387	15,148	15,560	16,015	16,163
Federal	2,773	2,866	2,776	2,782	2,773	2,774	2,769	2,773	2,782	2,825	2,833	2,803	2,735	2,734	2,738
State and local	13,174	13,383	13,697	13,653	13,443	13,684	13,724	13,684	13,632	13,378	12,554	12,345	12,825	13,281	13,425

11. Employment by industry division and major manufacturing group, seasonally adjusted

[Nonagricultural payroll data, in thousands]

Industry division and group	1980		1981										
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct. ᵖ	Nov. ᵖ
TOTAL	90,844	90,949	91,091	91,258	91,347	91,458	91,564	91,615	91,880	91,901	92,033	91,798	91,561
MINING	1,052	1,069	1,083	1,091	1,098	950	957	1,110	1,132	1,151	1,162	1,164	1,179
CONSTRUCTION	4,389	4,387	4,390	4,389	4,416	4,418	4,334	4,284	4,272	4,275	4,272	4,260	4,242
MANUFACTURING	20,188	20,175	20,174	20,177	20,191	20,332	20,414	20,424	20,535	20,505	20,496	20,227	20,038
Production workers	14,081	14,059	14,053	14,053	14,074	14,187	14,247	14,245	14,327	14,294	14,281	14,018	13,825
Durable goods	12,090	12,077	12,084	12,074	12,099	12,207	12,254	12,278	12,333	12,332	12,311	12,108	11,953
Production workers	8,320	8,301	8,306	8,297	8,325	8,412	8,442	8,455	8,491	8,485	8,465	8,265	8,103
Lumber and wood products	683	687	689	691	692	702	710	699	702	686	677	654	642
Furniture and fixtures	463	464	464	466	467	478	484	486	488	487	485	479	468
Stone, clay, and glass products	658	655	654	654	651	656	658	658	658	660	655	645	635
Primary metal industries	1,126	1,137	1,137	1,140	1,141	1,145	1,142	1,144	1,140	1,148	1,139	1,112	1,099
Fabricated metal products	1,582	1,581	1,579	1,577	1,581	1,595	1,604	1,604	1,614	1,610	1,606	1,575	1,545
Machinery, except electrical	2,489	2,490	2,487	2,481	2,480	2,491	2,511	2,521	2,533	2,542	2,551	2,548	2,536
Electric and electronic equipment	2,096	2,103	2,110	2,110	2,117	2,134	2,143	2,148	2,163	2,166	2,163	2,149	2,120
Transportation equipment	1,874	1,839	1,840	1,833	1,849	1,878	1,872	1,886	1,886	1,889	1,889	1,808	1,777
Instruments and related products	712	712	713	711	712	714	716	717	723	727	727	722	715
Miscellaneous manufacturing	407	409	411	411	409	414	414	415	426	417	419	416	416
Nondurable goods	8,098	8,098	8,090	8,103	8,092	8,125	8,160	8,146	8,202	8,173	8,185	8,119	8,085
Production workers	5,761	5,758	5,747	5,756	5,749	5,775	5,805	5,790	5,836	5,809	5,816	5,753	5,722
Food and kindred products	1,705	1,701	1,696	1,705	1,691	1,697	1,703	1,673	1,691	1,668	1,669	1,668	1,661
Tobacco manufactures	71	71	71	72	72	72	71	71	71	73	71	70	71
Textile mill products	844	842	841	839	838	842	843	846	856	849	849	833	823
Apparel and other textile products	1,253	1,250	1,244	1,243	1,243	1,250	1,258	1,264	1,278	1,272	1,273	1,258	1,252
Paper and allied products	692	692	691	691	689	691	694	695	696	698	703	693	692
Printing and publishing	1,265	1,269	1,269	1,272	1,276	1,280	1,283	1,284	1,290	1,295	1,301	1,301	1,306
Chemicals and allied products	1,103	1,105	1,106	1,109	1,108	1,107	1,109	1,111	1,110	1,106	1,112	1,107	1,105
Petroleum and coal products	209	209	211	210	210	211	213	212	212	212	211	210	210
Rubber and miscellaneous plastics products	725	729	730	731	734	744	753	757	760	764	760	744	733
Leather and leather products	231	230	231	231	231	231	233	232	238	236	236	235	232
TRANSPORTATION AND PUBLIC UTILITIES	5,114	5,118	5,124	5,135	5,139	5,161	5,148	5,149	5,167	5,170	5,186	5,164	5,161
WHOLESALE AND RETAIL TRADE	20,464	20,470	20,529	20,600	20,635	20,636	20,714	20,717	20,796	20,862	20,872	20,910	20,826
WHOLESALE TRADE	5,296	5,300	5,305	5,313	5,316	5,333	5,346	5,349	5,360	5,375	5,370	5,360	5,362
RETAIL TRADE	15,168	15,170	15,224	15,287	15,319	15,303	15,368	15,368	15,436	15,487	15,502	15,550	15,464
FINANCE, INSURANCE, AND REAL ESTATE	5,235	5,254	5,268	5,283	5,293	5,316	5,326	5,331	5,344	5,354	5,366	5,359	5,355
SERVICES	18,160	18,240	18,300	18,343	18,371	18,475	18,540	18,560	18,642	18,667	18,774	18,782	18,828
GOVERNMENT	16,242	16,236	16,223	16,240	16,204	16,170	16,131	16,040	15,992	15,917	15,905	15,932	15,932
Federal	2,796	2,800	2,799	2,795	2,781	2,767	2,779	2,781	2,777	2,770	2,765	2,756	2,757
State and local	13,446	13,436	13,424	13,445	13,423	13,403	13,352	13,259	13,215	13,147	13,140	13,176	13,175

12. Labor turnover rates in manufacturing, 1977 to date

[Per 100 employees]

Year	Annual average	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total accessions													
1977	4.0	3.7	3.7	4.0	3.8	4.6	4.9	4.3	5.3	4.6	3.9	3.1	2.4
1978	4.1	3.8	3.2	3.8	4.0	4.7	4.9	4.4	5.4	4.9	4.3	3.3	2.4
1979	4.0	4.0	3.4	3.8	3.9	4.7	4.8	4.3	5.0	4.5	4.1	3.0	2.2
1980	3.5	3.8	3.3	3.5	3.1	3.4	3.9	3.8	4.5	4.3	3.6	2.7	2.2
1981	…	3.4	3.0	3.4	3.3	3.5	4.0	3.6	4.0	3.5	P2.8	…	…
New hires													
1977	2.8	2.2	2.1	2.6	2.7	3.5	3.7	3.0	4.0	3.5	3.0	2.2	1.6
1978	3.1	2.5	2.2	2.7	2.9	3.6	3.9	3.3	4.2	3.9	3.5	2.6	1.7
1979	2.9	2.8	2.5	2.8	2.9	3.6	3.8	3.1	3.7	3.4	3.1	2.2	1.5
1980	2.1	2.4	2.2	2.3	2.0	2.1	2.4	2.1	2.5	2.6	2.2	1.6	1.2
1981	…	1.8	1.8	2.0	2.0	2.3	2.8	2.4	2.7	2.3	P1.8	…	…
Recalls													
1977	.9	1.2	1.3	1.1	.9	.8	.8	.9	1.0	.8	.6	.6	.6
1978	.7	1.0	.7	.8	.8	.8	.7	.8	.9	.7	.6	.5	.5
1979	.7	.9	.7	.7	.7	.8	.7	.9	.9	.8	.7	.6	.5
1980	1.1	1.1	.9	.9	.8	1.0	1.2	1.5	1.7	1.4	1.1	.9	.8
1981	…	1.3	1.0	1.1	1.1	1.0	.9	1.0	1.0	.9	P.8	…	…
Total separations													
1977	3.8	3.9	3.4	3.4	3.4	3.5	3.5	4.3	5.1	4.9	3.8	3.4	3.4
1978	3.9	3.6	3.1	3.5	3.6	3.7	3.8	4.1	5.3	4.9	4.1	3.5	3.4
1979	4.0	3.8	3.2	3.6	3.7	3.8	3.9	4.3	5.7	4.7	4.2	3.8	3.5
1980	4.0	4.1	3.5	3.7	4.7	4.8	4.4	4.2	4.8	4.1	3.8	3.0	3.1
1981	…	3.6	3.1	3.2	3.1	3.1	3.2	3.6	4.4	4.1	P4.3	…	…
Quits													
1977	1.8	1.4	1.3	1.6	1.7	1.9	1.9	1.9	3.1	2.8	1.9	1.5	1.2
1978	2.1	1.5	1.4	1.8	2.0	2.1	2.2	2.1	3.5	3.1	2.3	1.7	1.3
1979	2.0	1.8	1.6	1.9	2.0	2.1	2.1	2.0	3.3	2.7	2.1	1.6	1.1
1980	1.5	1.6	1.5	1.6	1.5	1.5	1.4	1.4	2.2	1.9	1.4	1.1	.9
1981	…	1.2	1.1	1.2	1.3	1.3	1.4	1.5	2.1	1.8	P1.2	…	…
Layoffs													
1977	1.1	1.7	1.4	1.0	.9	.8	.8	1.5	1.0	1.1	1.1	1.1	1.5
1978	.9	1.2	.9	.9	.8	.7	.7	1.1	.8	.8	.9	1.0	1.4
1979	1.1	1.1	.8	.8	.9	.7	.9	1.4	1.3	1.1	1.2	1.5	1.7
1980	1.7	1.6	1.2	1.3	2.3	2.5	2.2	2.0	1.7	1.4	1.5	1.3	1.6
1981	…	1.6	1.2	1.2	1.0	1.0	1.1	1.3	1.3	1.5	P2.3	…	…

13. Labor turnover rates in manufacturing, by major industry group

[Per 100 employees]

Major industry group	Accession rates									Separation rates								
	Total			New hires			Recalls			Total			Quits			Layoffs		
	Oct. 1980	Sept. 1981	Oct. 1981 P	Oct. 1980	Sept. 1981	Oct. 1981 P	Oct. 1980	Sept. 1981	Oct. 1981 P	Oct. 1980	Sept. 1981	Oct. 1981 P	Oct. 1980	Sept. 1981	Oct. 1981 P	Oct. 1980	Sept. 1981	Oct. 1981 P
MANUFACTURING	3.6	3.5	2.8	2.2	2.3	1.8	1.1	0.9	0.8	3.8	4.1	4.3	1.4	1.8	1.2	1.5	1.5	2.3
Seasonally adjusted	3.7	2.9	2.9	2.1	1.8	1.7	1.3	.9	.9	3.6	3.7	4.1	1.3	1.3	1.1	1.5	1.7	2.3
Durable goods	3.4	3.0	2.4	1.8	1.8	1.4	1.2	.9	.7	3.2	3.7	4.1	1.1	1.4	1.0	1.3	1.5	2.3
Lumber and wood products	4.3	3.8	3.0	3.1	2.4	1.8	1.1	1.2	1.0	4.8	6.5	8.5	2.2	2.5	1.6	1.6	3.2	6.1
Furniture and fixtures	4.2	3.9	2.8	3.2	3.1	2.2	.9	.6	.4	4.3	4.3	4.4	2.1	2.3	1.6	1.2	1.1	2.0
Stone, clay, and glass products	3.3	2.8	2.4	1.9	1.7	1.3	1.2	.9	.9	3.7	4.0	4.5	1.2	1.4	1.0	1.6	1.8	2.7
Primary metal industries	3.5	2.4	2.0	.7	1.0	.7	2.3	1.1	1.1	3.0	4.0	5.0	.5	.8	.5	1.7	2.4	3.7
Fabricated metal products	3.6	3.2	2.7	2.1	2.1	1.6	1.2	.9	.9	3.7	4.1	4.5	1.3	1.5	1.1	1.7	1.8	2.7
Machinery, except electrical	2.5	2.4	2.1	1.5	1.6	1.3	.7	.6	.5	2.6	2.7	2.8	.9	1.1	.8	1.0	.9	1.3
Electric and electronic equipment	2.9	2.9	2.3	1.7	1.8	1.4	.7	.7	.4	2.7	3.1	3.2	1.1	1.3	.9	.8	.9	1.4
Transportation equipment	4.7	3.4	…	1.8	1.2	…	2.0	1.7	…	3.1	3.6	…	.8	.8	…	1.5	2.0	…
Instruments and related products	2.2	2.2	1.7	1.7	1.8	1.4	.3	.2	.1	2.3	3.0	2.4	1.3	1.8	1.1	.5	.6	.8
Miscellaneous manufacturing	4.4	5.2	4.3	3.2	4.2	3.1	1.0	.8	.9	5.0	5.2	5.3	2.2	2.5	1.8	1.9	1.5	2.5
Nondurable goods	3.8	4.2	3.3	2.7	3.0	2.3	.9	1.0	.8	4.6	4.7	4.6	1.9	2.3	1.6	1.9	1.5	2.2
Food and kindred products	5.8	7.0	4.7	3.9	4.3	2.9	1.6	2.5	1.5	8.4	7.5	7.8	2.7	3.3	2.0	4.7	3.3	4.9
Tobacco manufacturers	3.3	3.7	…	2.1	2.4	…	.6	.5	…	2.9	4.0	…	.9	1.2	…	.9	1.3	…
Textile mill products	3.5	3.3	3.1	2.7	2.6	2.1	.6	.4	.7	3.7	3.9	4.3	2.0	2.2	1.7	.8	.8	1.7
Apparel and other products	4.5	5.7	4.7	3.0	4.1	3.2	1.3	1.3	1.2	5.3	5.4	5.3	2.4	3.2	2.5	2.2	1.4	1.9
Paper and allied products	2.2	2.3	2.0	1.4	1.6	1.2	.7	.5	.6	2.5	3.3	3.3	.9	1.4	.9	.9	1.1	1.8
Printing and publishing	3.1	3.6	3.2	2.5	3.0	2.6	.5	.5	.4	3.3	3.6	3.1	1.7	2.2	1.7	1.0	.7	.8
Chemicals and allied products	1.5	1.5	1.2	1.0	1.1	.9	.3	.2	.2	1.5	2.0	1.8	.6	1.0	.5	.4	.5	.7
Petroleum and coal products	2.0	1.9	1.7	1.5	1.5	1.5	.4	.3	.1	1.8	2.9	2.7	.6	.9	.6	.6	.9	1.3
Rubber and miscellaneous plastics products	4.4	3.7	2.9	2.7	2.8	1.9	1.2	.6	.7	4.2	4.5	4.4	2.0	2.1	1.3	1.3	1.5	2.2
Leather and leather products	5.8	5.4	4.6	4.6	4.1	3.2	.9	1.0	1.1	6.6	6.4	6.2	3.4	3.5	2.6	2.3	2.0	2.6

14. Hours and earnings, by industry division, 1950-80

[Gross averages, production or nonsupervisory workers on nonagricultural payrolls]

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Total private			Mining			Construction			Manufacturing		
1950	$53.13	39.8	$1.335	$67.16	37.9	$1.772	$69.68	37.4	$1.863	$58.32	40.5	$1.440
1951	57.86	39.9	1.45	74.11	38.4	1.93	76.96	38.1	2.02	63.34	40.6	1.56
1952	60.65	39.9	1.52	77.59	38.6	2.01	82.86	38.9	2.13	66.75	40.7	1.64
1953	63.76	39.6	1.61	83.03	38.8	2.14	86.41	37.9	2.28	70.47	40.5	1.74
1954	64.52	39.1	1.65	82.60	38.6	2.14	88.91	37.2	2.39	70.49	39.6	1.78
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1956	70.74	39.3	1.80	95.06	40.8	2.33	96.38	37.5	2.57	78.78	40.4	1.95
1957	73.33	38.8	1.89	98.25	40.1	2.45	100.27	37.0	2.71	81.19	39.8	2.04
1958	75.08	38.5	1.95	96.08	38.9	2.47	103.78	36.8	2.82	82.32	39.2	2.10
1959[1]	78.78	39.0	2.02	103.68	40.5	2.56	108.41	37.0	2.93	88.26	40.3	2.19
1960	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1961	82.60	38.6	2.14	106.92	40.5	2.64	118.08	36.9	3.20	92.34	39.8	2.32
1962	85.91	38.7	2.22	110.70	41.0	2.70	122.47	37.0	3.31	96.56	40.4	2.39
1963	88.46	38.8	2.28	114.40	41.6	2.75	127.19	37.3	3.41	99.23	40.5	2.45
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	269.34	40.2	6.70
1980	235.10	35.3	6.66	396.14	43.2	9.17	367.04	37.0	9.92	288.62	39.7	7.27
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950				$44.55	40.5	$1.100	$50.52	37.7	$1.340			
1951				47.79	40.5	1.18	54.67	37.7	1.45			
1952				49.20	40.0	1.23	57.08	37.8	1.51			
1953				51.35	39.5	1.30	59.57	37.7	1.58			
1954				53.33	39.5	1.35	62.04	37.6	1.65			
1955				55.16	39.4	1.40	63.92	37.6	1.70			
1956				57.48	39.1	1.47	65.68	36.9	1.78			
1957				59.60	38.7	1.54	67.53	36.7	1.84			
1958				61.76	38.6	1.60	70.12	37.1	1.89			
1959[1]				64.41	38.8	1.66	72.74	37.3	1.95			
1960				66.01	38.6	1.71	75.14	37.2	2.02			
1961				67.41	38.3	1.76	77.12	36.9	2.09			
1962				69.91	38.2	1.83	80.94	37.3	2.17			
1963				72.01	38.1	1.89	84.38	37.5	2.25			
1964	$118.78	41.1	$2.89	74.66	37.9	1.97	85.79	37.3	2.30	$70.03	36.1	$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	351.25	39.6	8.87	176.46	32.2	5.48	209.24	36.2	5.78	190.71	32.6	5.85

[1] Data include Alaska and Hawaii beginning in 1959.

15. Weekly hours, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1980		1981										
	1979	1980	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct. p	Nov. p
TOTAL PRIVATE	35.7	35.3	35.3	35.6	35.1	35.0	35.2	35.2	35.2	35.4	35.6	35.6	35.0	35.1	35.1
MINING	43.0	43.2	43.6	44.1	43.6	42.8	42.3	43.6	43.8	42.1	43.5	44.1	43.8	44.4	44.6
CONSTRUCTION	37.0	37.0	36.8	37.2	36.4	35.0	37.2	36.9	36.9	37.2	37.7	37.3	35.7	37.3	36.8
MANUFACTURING	40.2	39.7	40.2	40.8	39.9	39.5	39.9	39.7	40.1	40.2	39.6	39.8	39.5	39.6	39.7
Overtime hours	3.3	2.8	3.1	3.3	2.9	2.8	2.8	2.6	2.9	3.0	2.8	3.0	2.9	2.8	2.6
Durable goods	40.8	40.1	40.7	41.5	40.4	39.9	40.5	40.3	40.6	40.6	39.9	40.2	39.8	40.0	40.0
Overtime hours	3.5	2.8	3.1	3.4	2.9	2.8	2.9	2.7	3.0	3.0	2.8	2.9	2.8	2.7	2.5
Lumber and wood products	39.4	38.6	39.2	39.7	38.8	38.5	39.0	39.1	39.6	39.5	38.7	39.0	37.9	38.1	37.8
Furniture and fixtures	38.7	38.1	38.4	39.6	38.1	38.3	38.8	38.2	38.5	36.9	37.8	38.6	37.7	38.8	38.1
Stone, clay, and glass products	41.5	40.8	41.4	41.6	40.3	39.6	40.6	40.9	41.1	41.2	40.8	41.0	40.6	40.6	40.9
Primary metal industries	41.4	40.1	40.8	41.6	41.1	40.7	41.1	41.2	40.9	40.9	40.3	40.3	40.8	39.6	39.6
Fabricated metal products	40.7	40.4	40.9	41.6	40.4	40.0	40.6	40.2	40.7	40.8	39.9	40.3	39.6	40.1	40.0
Machinery except electrical	41.8	41.0	41.3	42.2	41.2	40.8	41.2	40.8	41.2	41.1	40.4	40.7	40.4	40.6	40.8
Electric and electronic equipment	40.3	39.8	40.4	41.0	40.1	39.6	40.2	39.8	40.1	40.2	39.7	40.0	39.7	40.0	39.7
Transportation equipment	41.1	40.6	41.7	43.1	40.9	40.1	41.1	41.0	41.6	41.3	40.7	40.5	39.9	40.5	40.9
Instruments and related products	40.8	40.5	40.9	41.2	40.6	40.5	40.6	39.9	40.3	40.4	39.9	40.4	40.4	40.2	40.5
Miscellaneous manufacturing	38.8	38.7	39.1	39.5	38.6	38.4	38.9	38.6	38.9	39.0	38.5	39.0	38.7	39.2	39.5
Nondurable goods	39.3	39.0	39.4	39.9	39.2	38.9	39.1	38.9	39.4	39.5	39.1	39.4	39.1	39.1	39.2
Overtime hours	3.1	2.8	3.0	3.1	2.9	2.8	2.7	2.6	2.9	2.9	2.8	3.0	3.1	2.9	2.8
Food and kindred products	39.9	39.7	40.1	40.3	40.0	39.3	39.2	39.3	39.8	39.8	39.6	40.0	39.8	39.6	39.8
Tobacco manufactures	38.0	38.1	40.1	38.1	38.6	38.5	37.2	37.2	38.6	38.5	38.6	40.7	40.2	39.6	38.9
Textile mill products	40.4	40.1	40.3	40.9	39.9	39.9	40.1	39.4	40.3	40.4	39.7	40.0	38.9	39.5	39.4
Apparel and other textile products	35.3	35.4	35.4	35.9	35.2	35.3	35.8	35.2	36.0	36.4	36.0	36.3	35.2	35.9	35.9
Paper and allied products	42.6	42.3	42.8	43.7	42.7	42.2	42.4	42.3	42.5	42.7	42.4	42.5	43.2	42.5	42.6
Printing and publishing	37.5	37.1	37.2	38.1	37.1	36.9	37.1	37.0	37.3	37.2	37.2	37.5	37.4	37.2	37.2
Chemicals and allied products	41.9	41.5	42.0	42.1	41.6	41.5	41.6	41.6	41.6	41.6	41.5	41.4	42.2	41.4	42.0
Petroleum and coal products	43.8	41.8	43.6	43.3	42.6	42.5	42.6	43.9	43.6	43.5	43.7	43.0	44.4	43.8	43.8
Rubber and miscellaneous plastics products	40.5	40.1	41.1	41.6	41.0	40.2	40.7	40.4	40.9	40.9	40.0	40.4	39.8	40.3	39.7
Leather and leather products	36.5	36.7	36.3	36.9	36.5	36.7	36.8	36.3	37.4	38.1	36.6	36.9	36.0	36.7	36.6
TRANSPORTATION AND PUBLIC UTILITIES	39.9	39.6	39.7	40.0	39.4	39.5	39.4	39.3	39.3	39.8	39.8	39.5	39.2	39.4	39.5
WHOLESALE AND RETAIL TRADE	32.6	32.2	32.1	32.5	31.7	31.7	31.9	32.1	32.0	32.3	32.8	32.8	32.2	31.9	31.9
WHOLESALE TRADE	38.8	38.5	38.5	38.9	38.5	38.3	38.5	38.5	38.5	38.6	38.8	38.7	38.5	38.6	38.8
RETAIL TRADE	30.6	30.2	30.0	30.5	29.5	29.6	29.8	30.0	29.9	30.4	30.9	30.9	30.2	29.8	29.8
FINANCE, INSURANCE, AND REAL ESTATE	36.2	36.2	36.3	36.3	36.4	36.4	36.4	36.3	36.1	36.1	36.3	36.3	36.0	36.2	36.4
SERVICES	32.7	32.6	32.6	32.6	32.5	32.6	32.6	32.6	32.5	32.7	33.0	32.9	32.4	32.5	32.5

16. Weekly hours, by industry division and major manufacturing group, seasonally adjusted

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	1980		1981										
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct. p	Nov. p
TOTAL PRIVATE	35.3	35.3	35.3	35.2	35.3	35.4	35.3	35.2	35.3	35.2	34.9	35.0	35.1
MANUFACTURING	39.8	39.9	40.1	39.8	39.9	40.2	40.3	40.1	40.0	40.0	39.3	39.5	39.3
Overtime hours	3.0	3.0	3.0	2.8	2.8	2.9	3.2	3.0	3.0	3.0	2.7	2.7	2.5
Durable goods	40.4	40.4	40.6	40.1	40.4	40.8	40.8	40.5	40.5	40.5	39.7	39.9	39.7
Overtime hours	3.0	3.1	3.0	2.8	2.8	3.0	3.2	3.0	3.0	3.0	2.6	2.6	2.4
Lumber and wood products	39.1	39.3	39.8	39.1	39.1	39.6	39.8	39.0	38.8	38.6	37.3	37.5	37.7
Furniture and fixtures	38.0	38.4	38.5	38.6	38.6	38.8	39.0	38.9	38.5	38.6	37.5	38.3	37.7
Stone, clay, and glass products	40.9	41.0	41.3	40.6	40.7	41.2	41.0	40.8	40.9	40.8	40.3	40.1	40.4
Primary metal industries	40.8	41.2	41.1	40.7	41.0	41.2	41.0	40.8	40.5	40.7	40.6	39.8	39.6
Fabricated metal products	40.5	40.4	40.5	40.2	40.4	40.9	40.9	40.7	40.5	40.5	39.5	40.0	39.6
Machinery, except electrical	41.0	40.9	41.1	40.8	40.9	41.3	41.4	41.1	41.1	41.2	40.3	40.7	40.5
Electric and electronic equipment	39.9	40.0	40.1	39.6	40.0	40.2	40.4	40.2	40.5	40.4	39.6	40.0	39.2
Transportation equipment	41.2	41.0	41.3	40.5	40.9	42.0	41.8	41.4	41.2	41.3	39.9	40.1	40.4
Instruments and related products	40.4	40.4	40.6	40.5	40.5	40.1	40.4	40.4	40.5	40.8	40.5	40.2	40.0
Miscellaneous manufacturing	38.6	38.9	38.8	38.6	38.7	38.9	39.2	39.1	39.2	39.1	38.4	38.9	39.0
Nondurable goods	39.1	39.2	39.5	39.2	39.2	39.3	39.6	39.4	39.3	39.3	38.9	39.0	38.8
Overtime hours	2.9	2.9	3.0	2.9	2.8	2.9	3.1	3.0	2.9	2.9	2.8	2.8	2.7
Food and kindred products	39.8	39.7	40.3	39.9	39.7	40.1	40.0	39.8	39.4	39.4	39.2	39.5	39.5
Textile mill products	39.9	40.1	40.0	40.0	39.9	38.8	40.5	40.2	40.4	40.3	38.9	39.4	39.0
Apparel and other textile products	35.2	35.5	36.1	35.6	35.7	35.5	36.0	36.1	35.9	36.1	35.2	35.8	35.7
Paper and allied products	42.4	42.8	42.6	42.4	42.4	42.6	42.8	42.7	42.7	42.7	43.1	42.5	42.2
Printing and publishing	36.8	37.4	37.5	37.3	37.1	37.3	37.6	37.4	37.3	37.3	37.1	37.1	36.8
Chemicals and allied products	41.6	41.6	41.6	41.6	41.5	41.5	41.7	41.7	41.8	41.7	42.3	41.4	41.6
Petroleum and coal products	42.9	43.2	43.8	43.8	43.5	44.1	43.8	43.4	43.1	42.8	43.3	42.8	43.1
Rubber and miscellaneous plastics products	40.8	40.8	40.9	40.3	40.5	40.7	41.3	41.0	40.5	40.6	39.6	40.1	39.4
Leather and leather products	36.3	36.6	36.8	37.0	37.1	36.6	37.1	37.1	36.5	36.9	36.1	36.8	36.7
WHOLESALE AND RETAIL TRADE	32.2	32.1	32.2	32.2	32.2	32.3	32.1	32.1	32.2	32.1	32.1	31.9	32.0
WHOLESALE TRADE	38.5	38.6	38.8	38.6	38.6	38.6	38.5	38.5	38.7	38.6	38.5	38.4	38.8
RETAIL TRADE	30.2	30.0	30.1	30.2	30.2	30.3	30.1	30.1	30.1	30.1	30.1	29.9	29.9
SERVICES	32.7	32.7	32.7	32.8	32.8	32.8	32.7	32.5	32.5	32.4	32.4	32.5	32.6

NOTE: The industry divisions of mining; construction; tobacco manufactures (a major manufacturing group, nondurable goods); transportation and public utilities; and finance, insurance, and real estate are no longer shown. This is because the seasonal component in these is small relative to the trend-cycle, or irregular components, or both, and consequently cannot be precisely separated.

17. Hourly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1980		1981										
	1979	1980	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.[p]	Nov.[p]
TOTAL PRIVATE	$6.16	$6.66	$6.92	$6.94	$7.03	$7.06	$7.10	$7.13	$7.17	$7.20	$7.24	$7.30	$7.40	$7.42	$7.46
MINING	8.49	9.17	9.49	9.57	9.77	9.86	9.85	9.70	9.58	9.84	10.11	10.15	10.29	10.32	10.50
CONSTRUCTION	9.27	9.92	10.24	10.33	10.42	10.41	10.44	10.43	10.53	10.60	10.74	10.87	11.02	11.08	11.05
MANUFACTURING	6.70	7.27	7.60	7.70	7.73	7.75	7.80	7.88	7.92	7.97	8.02	8.02	8.15	8.14	8.18
Durable goods	7.13	7.75	8.11	8.23	8.23	8.26	8.32	8.40	8.45	8.52	8.55	8.57	8.68	8.69	8.74
Lumber and wood products	6.07	6.53	6.76	6.74	6.79	6.81	6.79	6.83	6.92	7.10	7.16	7.13	7.15	7.11	7.17
Furniture and fixtures	5.06	5.49	5.63	5.70	5.71	5.74	5.76	5.78	5.83	5.89	5.91	5.98	6.00	6.04	6.04
Stone, clay, and glass products	6.85	7.50	7.81	7.83	7.87	7.89	7.94	8.11	8.20	8.31	8.39	8.41	8.53	8.49	8.50
Primary metal industries	8.98	9.77	10.29	10.36	10.36	10.56	10.52	10.76	10.68	10.78	10.79	10.99	11.22	11.09	11.13
Fabricated metal products	6.85	7.45	7.77	7.88	7.89	7.91	8.01	8.05	8.17	8.23	8.22	8.27	8.34	8.37	8.39
Machinery, except electrical	7.32	8.00	8.38	8.50	8.53	8.56	8.62	8.67	8.75	8.81	8.85	8.86	8.98	9.04	9.10
Electric and electronic equipment	6.32	6.95	7.27	7.38	7.41	7.43	7.47	7.51	7.55	7.60	7.69	7.76	7.79	7.84	7.87
Transportation equipment	8.53	9.32	9.87	10.09	9.96	9.93	10.08	10.14	10.25	10.36	10.35	10.30	10.41	10.59	10.57
Instruments and related products	6.17	6.80	7.01	7.13	7.19	7.20	7.23	7.25	7.31	7.34	7.44	7.56	7.60	7.60	7.71
Miscellaneous manufacturing	5.03	5.47	5.62	5.73	5.82	5.83	5.85	5.91	5.93	5.93	5.98	5.97	6.07	6.08	6.13
Nondurable goods	6.01	6.56	6.82	6.89	6.97	6.98	7.01	7.08	7.11	7.14	7.23	7.24	7.37	7.34	7.38
Food and kindred products	6.27	6.86	7.09	7.13	7.21	7.24	7.29	7.37	7.43	7.43	7.47	7.50	7.58	7.53	7.61
Tobacco manufactures	6.67	7.73	7.86	8.10	8.50	8.56	8.61	8.90	9.03	9.33	9.43	8.61	8.66	8.61	8.99
Textile mill products	4.66	5.08	5.31	5.34	5.35	5.35	5.36	5.36	5.40	5.42	5.51	5.66	5.69	5.73	5.74
Apparel and other textile products	4.23	4.57	4.75	4.81	4.89	4.87	4.94	4.96	4.98	5.00	4.94	4.98	5.06	5.07	5.05
Paper and allied products	7.13	7.84	8.18	8.27	8.27	8.28	8.30	8.37	8.42	8.55	8.73	8.67	8.85	8.81	8.91
Printing and publishing	6.94	7.53	7.79	7.88	7.92	7.96	8.02	8.04	8.10	8.13	8.22	8.27	8.40	8.43	8.45
Chemicals and allied products	7.60	8.30	8.60	8.69	8.74	8.80	8.84	8.94	8.99	9.07	9.16	9.19	9.38	9.34	9.30
Petroleum and coal products	9.36	10.09	10.52	10.38	11.06	11.33	11.23	11.40	11.28	11.29	11.41	11.31	11.53	11.47	11.53
Rubber and miscellaneous plastics products	5.97	6.56	6.88	6.97	7.06	7.04	7.07	7.15	7.22	7.23	7.28	7.32	[illegible]	7.40	7.33
Leather and leather products	4.22	4.58	4.69	4.74	4.86	4.88	4.90	4.93	4.95	4.98	4.96	4.97	5.08	5.07	5.07
TRANSPORTATION AND PUBLIC UTILITIES	8.16	8.87	9.27	9.30	9.33	9.45	9.42	9.54	9.50	9.63	9.69	9.80	9.97	9.97	10.04
WHOLESALE AND RETAIL TRADE	5.06	5.48	5.64	5.62	5.80	5.84	5.85	5.87	5.89	5.89	5.91	5.94	6.04	6.00	6.05
WHOLESALE TRADE	6.39	6.96	7.19	7.23	7.32	7.38	7.42	7.47	7.51	7.51	7.59	7.67	7.71	7.74	7.79
RETAIL TRADE	4.53	4.88	5.02	4.99	5.18	5.20	5.20	5.22	5.23	5.23	5.24	5.26	5.37	5.30	5.34
FINANCE, INSURANCE, AND REAL ESTATE	5.27	5.78	6.02	6.00	6.10	6.21	6.19	6.20	6.24	6.24	6.27	6.37	6.38	6.42	6.54
SERVICES	5.36	5.85	6.08	6.12	6.21	6.27	6.29	6.30	6.33	6.33	6.34	6.41	6.51	6.57	6.65

18. Hourly Earnings Index for production or nonsupervisory workers on private nonagricultural payrolls, by industry division

[Seasonally adjusted data: 1977 = 100]

Industry	1980		1981											Oct. 1981 to Nov. 1981	Nov. 1980 to Nov. 1981
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.[p]	Nov.[p]		
TOTAL PRIVATE (in current dollars)	132.1	132.6	133.8	135.0	135.8	136.7	137.7	138.4	139.0	140.7	141.5	141.8	143.1	0.9	8.3
Mining[1]	139.2	139.8	142.1	143.2	144.0	145.7	145.6	147.2	148.9	149.4	151.5	151.6	154.4	1.9	11.0
Construction	125.2	126.2	127.6	128.0	128.6	129.0	129.4	130.4	131.8	132.5	132.9	134.1	134.7	.5	7.6
Manufacturing	134.6	135.4	136.5	137.5	138.5	139.9	140.7	141.6	142.5	143.6	144.8	145.4	146.0	.5	8.5
Transportation and public utilities	132.6	132.8	133.7	135.4	136.1	137.3	138.9	139.8	139.3	141.8	141.7	142.1	143.4	1.0	8.2
Wholesale and retail trade	132.3	132.4	133.7	135.0	135.8	136.4	137.4	137.8	138.4	140.0	141.2	140.6	141.8	.9	7.2
Finance, insurance, and real estate	132.4	131.9	133.2	135.0	136.0	135.4	136.8	137.1	137.4	140.4	140.3	141.0	143.9	2.0	8.6
Services	130.5	131.1	132.0	133.2	134.0	134.8	136.0	136.6	136.9	139.4	139.8	140.6	142.3	1.2	9.0
TOTAL PRIVATE (in constant dollars)	93.3	92.7	92.8	92.7	92.8	93.0	93.1	92.9	92.2	92.7	92.1	92.0	(2)	(2)	(2)

[1] This series is not seasonally adjusted because the seasonal component is small relative to the trend-cycle, irregular components, or both, and consequently cannot be separated with sufficient provision.

[2] Not available.

19. Weekly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1980		1981										
	1979	1980	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct. [p]	Nov. [p]
TOTAL PRIVATE	$219.91	$235.10	$244.28	$247.06	$246.75	$247.10	$249.92	$250.98	$252.38	$254.88	$257.74	$259.88	$259.00	$260.44	$261.85
MINING	365.07	396.14	413.76	427.04	425.97	422.01	416.66	422.92	423.98	418.47	439.79	447.62	450.70	458.21	468.30
CONSTRUCTION	342.99	367.04	376.83	384.28	379.29	364.35	388.37	384.87	388.56	394.32	404.90	405.45	393.41	413.28	406.64
MANUFACTURING	269.34	288.62	305.52	314.16	308.43	306.13	311.22	312.84	317.58	320.39	317.59	319.20	321.93	322.34	324.75
Durable goods	290.90	310.78	330.08	341.55	332.49	329.57	336.96	338.52	343.07	345.91	341.15	344.51	345.46	347.60	349.60
Lumber and wood products	239.16	252.06	264.99	267.58	263.45	262.19	264.81	267.05	274.03	280.45	277.09	278.07	270.99	270.89	271.03
Furniture and fixtures	195.82	209.17	216.19	225.72	217.55	219.84	223.49	220.80	224.46	229.12	223.40	230.83	226.20	234.35	230.12
Stone, clay, and glass products	284.28	306.00	323.33	325.73	317.16	312.44	322.36	331.70	337.02	342.37	342.31	344.81	346.32	344.69	347.65
Primary metal industries	371.77	391.78	419.83	430.98	425.80	429.79	432.37	443.31	436.81	440.08	434.84	442.90	457.78	435.20	440.75
Fabricated metal products	278.60	300.98	317.79	327.81	318.76	316.40	325.21	323.61	332.52	335.78	327.98	333.28	330.26	335.64	335.60
Machinery except electrical	305.98	328.00	346.09	358.70	351.44	349.25	355.14	353.74	360.50	362.08	357.54	360.60	362.79	367.02	371.28
Electric and electronic equipment	254.70	276.61	293.71	302.58	297.14	294.23	300.29	298.90	302.76	305.52	305.29	310.40	309.26	313.60	312.44
Transportation equipment	350.58	378.30	411.58	434.88	407.36	398.19	414.29	415.74	426.40	427.87	421.25	417.15	415.36	428.90	432.31
Instruments and related products	251.74	275.40	286.71	293.76	291.91	291.60	293.54	289.28	294.59	296.54	296.86	305.42	307.04	305.52	312.26
Miscellaneous manufacturing	195.16	211.69	219.74	226.34	224.65	223.87	227.57	228.13	230.68	231.27	230.23	232.83	234.91	238.34	242.14
Nondurable goods	236.19	255.84	268.71	274.91	273.22	271.52	274.09	275.41	280.13	282.03	282.69	285.26	288.17	286.99	289.30
Food and kindred products	250.17	272.34	284.31	287.34	288.40	284.53	285.77	289.64	295.71	295.71	295.81	300.00	301.68	298.19	302.88
Tobacco manufactures	253.46	294.51	315.19	308.61	328.10	329.56	320.29	331.08	348.56	359.21	364.00	350.43	348.13	340.96	349.71
Textile mill products	188.26	203.71	213.99	218.41	213.47	213.47	214.94	211.18	217.62	218.97	218.75	226.40	221.34	226.34	226.16
Apparel and other textile products	149.32	161.78	168.15	172.68	172.13	171.91	176.85	174.59	179.28	182.00	177.84	180.77	178.11	182.01	181.30
Paper and allied products	303.74	331.63	350.10	361.40	353.13	349.42	351.92	354.05	357.85	365.09	370.15	368.48	386.64	374.43	379.57
Printing and publishing	260.25	279.36	289.79	300.23	293.83	293.72	297.54	297.48	302.13	302.44	305.78	310.13	314.16	313.60	314.34
Chemicals and allied products	318.44	344.45	361.20	365.85	363.58	365.20	367.74	371.90	373.98	377.31	380.14	380.47	395.84	386.68	394.38
Petroleum and coal products	409.97	421.76	458.67	449.45	471.16	481.53	478.40	500.46	491.81	491.12	498.62	486.33	511.93	502.39	505.01
Rubber and miscellaneous plastics products	241.79	263.06	282.77	289.95	289.46	283.01	287.75	288.86	295.30	295.71	291.20	295.73	293.72	298.22	291.00
Leather and leather products	154.03	168.09	170.25	174.91	177.38	179.10	180.32	178.96	185.13	189.74	181.54	183.39	182.88	186.07	185.56
TRANSPORTATION AND PUBLIC UTILITIES	325.58	351.25	368.02	372.00	367.60	373.28	371.15	374.92	376.89	383.27	385.66	390.66	390.82	392.82	396.58
WHOLESALE AND RETAIL TRADE	164.96	176.46	181.04	182.65	183.86	185.13	186.62	188.43	188.48	190.25	193.85	194.83	194.49	191.40	193.00
WHOLESALE TRADE	247.93	267.96	276.82	281.25	281.82	282.65	285.67	287.60	289.14	289.89	294.49	296.83	296.84	298.76	302.25
RETAIL TRADE	138.62	147.38	150.60	152.20	152.81	153.92	154.96	156.60	156.38	158.99	161.92	162.53	162.17	157.94	159.13
FINANCE, INSURANCE, AND REAL ESTATE	190.77	209.24	218.53	217.80	222.04	226.04	225.32	225.06	225.26	225.26	227.60	231.23	229.68	232.40	238.06
SERVICES	175.27	190.71	198.53	199.51	201.83	204.40	205.05	205.38	206.73	206.98	208.22	210.89	210.92	213.53	216.13

20. Gross and spendable weekly earnings, in current and 1977 dollars, 1961 to date

[Averages for production or nonsupervisory workers on private nonagricultural payrolls]

Year and month	Private nonagricultural workers						Manufacturing workers					
	Gross average weekly earnings		Spendable average weekly earnings				Gross average weekly earnings		Spendable average weekly earnings			
			Worker with no dependents		Married worker with 3 dependents				Worker with no dependents		Married worker with 3 dependents	
	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars
1961	$82.60	$167.21	$67.08	$135.79	$74.48	$150.77	$92.34	$186.92	$74.60	$151.01	$82.18	$166.36
1962	85.91	172.16	69.56	139.40	76.96	154.29	96.56	193.51	77.86	156.03	85.53	171.40
1963	88.46	175.17	71.05	140.69	78.56	155.56	99.23	196.50	79.51	157.45	87.25	172.77
1964	91.33	178.38	75.04	146.56	82.57	161.27	102.97	201.11	84.40	164.84	92.18	180.04
1965	95.45	183.21	79.32	152.25	86.63	166.28	107.53	206.39	89.08	170.98	96.78	185.76
1966	98.82	184.37	81.29	151.66	88.66	165.41	112.19	209.31	91.45	170.62	99.33	185.32
1967	101.84	184.83	83.38	151.32	90.86	164.90	114.49	207.79	92.97	168.73	100.93	183.18
1968	107.73	187.68	86.71	151.06	95.28	165.98	122.51	312.43	97.70	170.21	106.75	185.98
1969	114.61	189.44	90.96	150.35	98.99	165.27	129.51	214.07	101.90	168.43	111.44	184.20
1970	119.83	186.94	96.21	150.08	104.90	163.65	133.33	208.00	106.32	165.87	115.58	180.31
1971	127.31	190.58	103.80	155.39	112.43	168.31	142.44	213.23	114.97	172.11	124.24	185.99
1972	136.90	198.41	112.19	162.59	121.68	176.35	154.71	224.22	125.34	181.65	135.57	196.48
1973	145.39	198.35	117.51	160.31	127.38	173.78	166.46	227.09	132.57	180.86	143.50	195.77
1974	154.76	190.12	124.37	152.79	134.61	165.37	176.80	217.20	140.19	172.22	151.56	186.19
1975	163.53	184.16	132.49	149.20	145.65	164.02	190.79	214.85	151.61	170.73	166.29	187.26
1976	175.45	186.85	143.30	152.61	155.87	166.00	209.32	222.92	167.83	178.73	181.32	193.10
1977	189.00	189.00	155.19	155.19	169.93	169.93	228.90	228.90	183.80	183.80	200.06	200.06
1978	203.70	189.31	165.39	153.71	180.71	167.95	249.27	231.66	197.40	183.46	214.87	199.69
1979	219.91	183.41	178.00	148.46	194.82	162.49	269.34	224.64	212.70	177.40	232.38	193.81
1980	235.10	172.74	188.82	138.74	206.06	151.65	288.62	212.06	225.79	165.90	247.01	181.49
1980: November	244.28	172.88	195.24	138.17	213.37	151.00	305.52	216.22	237.26	167.91	259.83	183.89
December	247.06	173.38	197.18	138.37	215.47	151.21	314.16	220.46	242.86	170.43	266.14	186.76
1981: January	246.75	171.83	195.68	136.27	213.96	149.00	308.43	214.78	237.60	165.46	260.36	181.31
February	247.10	170.18	195.92	134.93	214.22	147.53	306.13	210.83	236.08	162.59	258.70	178.17
March	249.92	171.06	197.88	135.44	216.34	148.08	311.22	213.02	239.37	163.84	262.38	179.59
April	250.98	170.73	198.51	135.11	217.14	147.71	312.84	212.82	240.39	163.53	263.55	179.29
May	252.38	170.18	199.59	134.59	218.20	147.13	317.59	214.15	243.40	164.13	266.99	180.03
June	254.88	170.49	201.32	134.66	220.08	147.21	320.39	214.31	245.18	164.00	269.01	179.94
July	257.74	170.35	203.30	134.37	222.24	146.89	317.59	209.91	243.40	160.87	266.99	176.46
August	259.88	170.64	204.79	134.46	223.85	146.98	319.20	209.59	244.42	160.49	268.15	176.07
September	259.00	168.40	204.18	132.76	223.20	145.12	321.93	209.32	246.15	160.05	270.13	175.64
October[p]	260.44	169.01	207.07	134.37	225.23	146.16	322.34	209.18	249.14	161.67	271.95	176.48
November[p]	261.85	([1])	208.07	([1])	226.30	([1])	324.75	([1])	250.70	([1])	273.72	([1])

[1] Not available.

NOTE: The earnings expressed in 1977 dollars have been adjusted for changes in price level as measured by the Bureau's Consumer Price Index for Urban Wage Earners and Clerical Workers. These series are described in "The Spendable Earnings Series: A Technical Note on its Calculation," **Employment and Earnings and Monthly Report on the Labor Force,** February 1969, pp. 6-13. See also "Spendable Earnings Formulas, 1979-81," **Employment and Earnings,** March 1981, pp. 10-11.

UNEMPLOYMENT INSURANCE DATA

NATIONAL UNEMPLOYMENT INSURANCE DATA are compiled monthly by the Employment and Training Administration of the U.S. Department of Labor from monthly records of unemployment insurance activity prepared by State agencies. Railroad unemployment insurance data are prepared by the U.S. Railroad Retirement Board.

Definitions

Data for **all programs** represent an unduplicated count of insured unemployment under State programs, Unemployment Compensation for Ex-Servicemen, and Unemployment Compensation for Federal Employees, and the Railroad Insurance Act.

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

An **application** for benefits is filed by a railroad worker at the beginning of his first period of unemployment in a benefit year; no application is required for subsequent periods in the same year. **Number of payments** are payments made in 14-day registration periods. The **average amount of benefit payment** is an average for all compensable periods, not adjusted for recovery of overpayments or settlement of underpayments. However, **total benefits** paid have been adjusted.

21. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1980			1981									
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
All programs:													
Insured unemployment	3,661	3,726	4,085	4,621	4,264	3,948	3,453	3,111	2,949	3,012	2,874	^{r}2,680	2,760
State unemployment insurance program:[1]													
Initial claims[2]	1,808	1,673	2,544	2,653	1,806	1,684	1,647	1,417	^{r}1,741	^{r}2,114	^{r}1,610	1,681	1,994
Insured unemployment (average weekly volume)	2,903	2,983	3,321	3,844	3,669	3,382	2,988	2,691	2,596	2,743	2,656	^{r}2,488	2,598
Rate of insured unemployment	3.3	3.4	3.8	4.4	4.2	3.9	3.4	3.1	3.0	3.1	3.0	2.9	3.0
Weeks of unemployment compensated	11,443	9,524	12,603	14,228	12,882	13,504	11,871	9,790	9,928	^{r}10,486	^{r}9,594	9,565	9,405
Average weekly benefit amount for total unemployment	$92.32	$101.96	$101.43	$102.34	$101.89	$105.63	$105.96	$105.49	$99.02	$103.47	^{r}$105.94	$107.39	$108.93
Total benefits paid	$1,125,416	$1,055,065	$1,242,957	$1,416,513	$1,313,507	$1,393,612	$1,226,815	$1,006,341	$1,012,764	^{r}$1,061,899	^{r}$1,004,864	$1,001,020	$995,880
Unemployment compensation for ex-servicemen:[3]													
Initial claims[1]	23	17	21	19	17	18	16	15	19	22	19	15	12
Insured unemployment (average weekly volume)	56	54	55	57	54	51	46	43	42	44	44	34	26
Weeks of unemployment compensated	155	216	261	257	221	234	214	183	192	203	190	153	116
Total benefits paid	$25,880	$21,024	$27,015	$26,646	$22,517	$24,668	$23,048	$19,965	$21,145	^{r}$22,785	^{r}$21,425	$17,144	$12,993
Unemployment compensation for Federal civilian employees:[4]													
Initial claims	21	14	18	22	13	12	12	11	13	15	17	18	20
Insured unemployment (average weekly volume)	32	35	37	41	40	36	31	27	25	25	25	29	30
Weeks of unemployment compensated	130	118	150	160	148	156	135	107	105	105	^{r}102	100	112
Total benefits paid	$11,917	$11,385	$14,184	$15,432	$14,573	$15,561	$13,701	$11,023	$10,705	^{r}$10,805	^{r}$9,543	$10,495	$11,602
Railroad unemployment insurance:													
Applications	9	7	11	13	5	5	6	6	26	41	13	—	—
Insured unemployment (average weekly volume)	36	38	39	53	50	44	41	35	30	28	29	—	—
Number of payments	84	70	83	118	104	115	94	79	86	32	63	—	—
Average amount of benefit payment	$208.49	$209.00	$212.27	$209.38	$214.56	$214.93	$201.12	$199.43	$201.06	$199.63	$202.53	—	—
Total benefits paid	$17,789	$14,269	$18,046	$20,303	$22,049	$23,233	$19,239	$15,428	$16,206	$11,541	$7,071	—	—
Employment service:[5]													
New applications and renewals	—	—	4,476	—	—	^{r}8,778	—	—	12,858	—	—	—	—
Nonfarm placements	—	—	871	—	—	^{r}1,595	—	—	2,446	—	—	—	—

[1] Initial claims and State insured unemployment include data under the program for Puerto Rican sugarcane workers.

[2] Includes interstate claims for the Virgin Islands. Excludes transition claims under State programs.

[3] Excludes data on claims and payments made jointly with other programs.

[4] Includes the Virgin islands. Excludes data on claims and payments made jointly with State programs.

[5] Cumulative total for fiscal year (October 1-September 30). Data computed quarterly.

NOTE: Data for Puerto Rico included. Dashes indicate data not available.
r = revised.

PRICE DATA

PRICE DATA are gathered by the Bureau of Labor Statistics from retail and primary markets in the United States. Price indexes are given in relation to a base period (1967 = 100, unless otherwise noted).

Definitions

The **Consumer Price Index** is a monthly statistical measure of the average change in prices in a fixed market basket of goods and services. Effective with the January 1978 index, the Bureau of Labor Statistics began publishing CPI's for two groups of the population. One index, a new CPI for All Urban Consumers, covers 80 percent of the total noninstitutional population; and the other index, a revised CPI for Urban Wage Earners and Clerical Workers, covers about half the new index population. The All Urban Consumers index includes, in addition to wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctor's and dentist's fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items is kept essentially unchanged between major revisions so that only price changes will be measured. Prices are collected from over 18,000 tenants, 24,000 retail establishments, and 18,000 housing units for property taxes in 85 urban areas across the country. All taxes directly associated with the purchase and use of items are included in the index. Because the CPI's are based on the expenditures of two population groups in 1972-73, they may not accurately reflect the experience of individual families and single persons with different buying habits.

Though the CPI is often called the "Cost-of-Living Index," it measures only price change, which is just one of several important factors affecting living costs. Area indexes do not measure differences in the level of prices among cities. They only measure the average change in prices for each area since the base period.

Producer Price Indexes measure average changes in prices received in primary markets of the United States by producers of commodities in all stages of processing. The sample used for calculating these indexes contains about 2,800 commodities and about 10,000 quotations per month selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The universe includes all commodities produced or imported for sale in commercial transactions in primary markets in the United States.

Producer Price Indexes can be organized by stage of processing or by commodity. The stage of processing structure organizes products by degree of fabrication (that is, finished goods, intermediate or semifinished goods, and crude materials). The commodity structure organizes products by similarity of end-use or material composition.

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States, from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire. Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

In calculating Producer Price Indexes, price changes for the various commodities are averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1972. The detailed data are aggregated to obtain indexes for stage of processing groupings, commodity groupings, durability of product groupings, and a number of special composite groupings.

Price indexes for the output of selected SIC industries measure average price changes in commodities produced by particular industries, as defined in the *Standard Industrial Classification Manual 1972* (Washington, U.S. Office of Management and Budget, 1972). These indexes are derived from several price series, combined to match the economic activity of the specified industry and weighted by the value of shipments in the industry. They use data from comprehensive industrial censuses conducted by the U.S. Bureau of the Census and the U.S. Department of Agriculture.

Notes on the data

Beginning with the May 1978 issue of the *Review*, regional CPI's cross classified by population size, were introduced. These indexes will enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes will be published bimonthly. (See table 24.)

For further details about the new and the revised indexes and a comparison of various aspects of these indexes with the old unrevised CPI, see *Facts About the Revised Consumer Price Index*, a pamphlet in the Consumer Price Index Revision 1978 series. See also *The Consumer Price Index: Concepts and Content Over the Years*, Report 517, revised edition (Bureau of Labor Statistics, May 1978).

For interarea comparisons of living costs at three hypothetical standards of living, see the family budget data published in the *Handbook of Labor Statistics, 1977*, Bulletin 1966 (Bureau of Labor Statistics, 1977), tables 122-133. Additional data and analysis on price changes are provided in the *CPI Detailed Report* and *Producer Prices and Price Indexes*, both monthly publications of the Bureau.

As of January 1976, the Wholesale Price Index (as it was then called) incorporated a revised weighting structure reflecting 1972 values of shipments. From January 1967 through December 1975, 1963 values of shipments were used as weights.

For a discussion of the general method of computing consumer, producer, and industry price indexes, see *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976), chapters 13-15. See also John F. Early, "Improving the measurement of producer price change," *Monthly Labor Review*, April 1978, pp. 7-15. For industry prices, see also Bennett R. Moss, "Industry and Sector Price Indexes," *Monthly Labor Review*, August 1965, pp. 974-82.

22. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967-80

[1967 = 100]

Year	All items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0		100.0		100.0		100.0		100.0		100.0		100.0		100.0	
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	116.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.2	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	6.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	267.2	11.3	203.7	8.5	213.6	8.8

23. Consumer Price Index for All Urban Consumers and revised CPI for Urban Wage Earners and Clerical Workers, U.S. city average — general summary and groups, subgroups, and selected items

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Oct.	May	June	July	Aug.	Sept.	Oct.	Oct.	May	June	July	Aug.	Sept.	Oct.
All items	253.9	269.0	271.3	274.4	276.5	297.3	279.9	254.1	269.1	271.4	274.6	276.5	279.1	279.7
Food and beverages	255.5	265.4	266.5	268.9	270.1	270.7	270.3	256.6	265.9	267.0	269.4	270.6	271.0	270.7
Housing	271.1	288.5	292.2	297.0	299.7	303.7	303.5	271.0	288.1	291.9	297.0	299.6	303.6	303.3
Apparel and upkeep	183.9	186.4	185.8	184.7	187.4	190.7	191.5	182.8	186.2	185.8	185.5	187.9	190.5	190.6
Transportation	256.1	277.8	279.9	282.6	283.7	285.2	287.2	256.6	278.9	281.0	283.9	285.1	286.6	288.9
Medical care	272.8	289.0	291.5	295.6	299.3	301.7	304.8	274.3	290.8	292.9	295.4	298.6	300.9	304.0
Entertainment	210.9	220.3	220.8	221.1	222.3	224.0	225.5	209.2	217.7	218.3	218.7	219.9	221.5	223.4
Other goods and services	221.5	232.2	233.4	234.4	235.6	243.0	245.2	219.9	230.4	231.4	232.4	233.5	239.3	241.4
Commodities	240.7	251.9	253.2	255.0	256.2	257.7	257.9	240.8	252.4	253.8	255.7	256.9	258.2	258.4
Commodities less food and beverages	230.2	241.7	243.1	244.7	245.8	247.6	248.0	230.0	242.3	243.8	245.5	246.7	248.4	248.7
Nondurables less food and beverages	244.4	263.8	263.5	262.9	263.9	265.8	266.4	246.1	266.6	266.3	266.0	266.8	268.5	268.6
Durables	218.1	223.9	226.6	229.6	230.9	232.6	232.9	216.3	222.4	225.2	228.4	229.9	231.5	232.0
Services	277.9	299.6	303.5	308.8	312.2	317.3	318.6	278.6	300.0	303.9	309.6	312.7	317.7	319.2
Rent, residential	197.1	205.9	206.8	207.8	210.3	211.9	213.6	196.8	205.5	206.4	207.4	209.9	211.5	213.2
Household services less rent	327.4	360.4	366.7	374.8	379.9	387.4	387.2	330.3	363.5	370.1	379.4	384.2	392.2	391.8
Transportation services	250.8	266.6	269.6	275.0	275.7	277.7	281.0	249.6	265.5	268.2	273.8	274.3	276.3	279.9
Medical care services	294.8	311.7	314.4	319.2	323.4	326.1	329.7	296.6	313.6	315.8	318.5	322.1	324.7	328.3
Other services	226.7	235.3	236.3	237.6	239.1	245.8	247.8	227.4	234.5	235.6	236.8	238.3	243.6	246.6
Special indexes:														
All items less food	250.9	267.0	269.5	272.7	274.9	278.2	279.0	251.0	267.2	269.7	273.1	275.2	278.2	279.1
All items less mortgage interest costs	243.0	255.2	256.9	259.3	260.9	262.9	263.6	243.5	255.8	257.5	260.0	261.5	263.3	264.0
Commodities less food	228.3	239.6	241.1	242.6	243.8	245.5	245.9	228.2	240.3	241.8	243.5	244.7	246.3	246.6
Nondurables less food	239.6	258.2	258.0	257.5	258.4	260.3	260.7	241.3	260.9	260.7	260.4	261.2	262.9	263.0
Nondurables less food and apparel	271.1	298.0	298.0	297.8	298.0	299.1	299.5	272.8	300.1	300.0	299.8	300.0	301.3	301.5
Nondurables	251.0	265.8	266.2	267.1	268.1	269.5	269.5	252.3	267.2	267.6	268.7	269.7	270.7	270.7
Services less rent	293.2	317.4	321.9	328.1	331.7	337.5	338.7	294.2	318.2	322.6	329.3	332.6	338.3	339.7
Services less medical care	274.2	296.2	300.1	305.4	308.8	314.1	315.1	274.7	296.4	300.4	306.3	309.4	314.6	315.8
Domestically produced farm foods	247.3	254.7	255.9	259.5	260.6	260.8	259.5	247.0	254.2	255.3	259.0	259.9	259.9	258.6
Selected beef cuts	276.8	270.9	271.6	275.3	276.7	277.9	275.5	279.0	273.8	274.3	277.9	277.2	279.7	276.5
Energy	368.0	411.3	414.0	415.7	416.1	417.1	414.9	371.1	414.9	417.3	418.9	418.9	420.1	417.9
All items less energy	245.1	257.9	260.2	263.5	265.6	268.6	269.4	244.5	257.0	259.3	262.7	264.7	267.5	268.3
All items less food and energy	239.7	253.0	255.6	259.0	261.3	264.8	265.9	238.7	251.9	254.5	258.1	260.3	263.6	264.8
Commodities less food and energy	209.4	215.7	217.5	219.4	220.9	222.9	223.4	207.8	214.6	216.6	218.7	220.2	222.1	222.6
Energy commodities	399.1	455.4	453.1	451.3	449.9	449.3	448.2	400.3	456.0	453.7	451.9	450.6	450.0	448.9
Services less energy	274.9	296.5	299.8	304.9	308.3	313.6	315.3	275.6	297.0	300.2	305.7	308.9	314.0	316.0
Purchasing power of the consumer dollar, 1967 = $1	$0.394	$0.372	$0.369	$0.364	$0.362	$0.358	$0.357	$0.394	$0.372	$0.368	$0.364	$0.362	$0.358	$0.358

23. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Oct.	May	June	July	Aug.	Sept.	Oct.	Oct.	May	June	July	Aug.	Sept.	Oct.
FOOD AND BEVERAGES	255.5	265.4	266.5	268.9	270.1	270.7	270.3	256.6	265.9	267.0	269.4	270.6	271.0	270.7
Food	262.4	272.5	273.6	276.2	277.4	278.0	277.6	263.4	272.9	274.0	276.6	277.7	278.1	277.8
Food at home	260.0	267.7	268.7	271.6	272.8	273.2	272.1	259.7	267.2	268.2	271.1	272.2	272.3	271.3
Cereals and bakery products	253.7	270.0	271.5	272.4	272.6	274.3	275.0	254.3	269.4	270.7	271.5	272.0	273.2	274.0
Cereals and cereal products (12/77 = 100)	137.5	146.8	148.3	149.0	149.5	150.1	150.0	138.5	148.4	150.0	150.6	151.3	151.2	151.5
Flour and prepared flour mixes (12/77 = 100)	133.2	138.8	139.0	139.5	139.6	139.5	139.3	133.8	140.3	141.4	141.9	142.0	141.1	140.9
Cereal (12/77 = 100)	139.3	149.8	152.4	153.4	154.6	155.7	156.1	139.3	151.3	154.0	154.8	156.4	157.2	157.9
Rice, pasta, and cornmeal (12/77 = 100)	138.9	149.6	150.9	151.2	151.4	151.6	151.1	141.6	152.0	152.7	153.2	153.1	152.6	152.7
Bakery products (12/77 = 100)	133.1	141.5	142.1	142.5	142.4	143.5	144.0	133.3	140.6	141.0	141.4	141.5	142.4	142.8
White bread	222.7	235.1	236.0	236.4	235.6	238.2	238.4	222.6	233.2	233.1	233.9	233.0	235.9	235.5
Other breads (12/77 = 100)	132.5	139.3	140.2	140.6	140.8	141.5	141.6	135.8	141.7	142.5	142.9	143.4	143.4	143.6
Fresh biscuits, rolls, and muffins (12/77 = 100)	133.4	141.5	141.7	142.4	143.4	143.3	144.8	132.1	139.6	139.7	141.7	141.0	140.1	141.7
Fresh cakes and cupcakes (12/77 = 100)	132.5	142.3	142.3	142.7	142.7	144.4	143.9	132.6	141.2	141.2	141.4	141.2	142.3	141.7
Cookies (12/77 = 100)	131.0	141.8	143.3	143.0	143.1	143.9	145.7	132.5	142.1	143.3	142.6	144.1	144.6	146.4
Crackers and bread and cracker products (12/77 = 100)	126.4	128.2	130.7	131.6	130.6	132.0	133.2	126.5	128.9	131.5	131.2	130.9	132.2	134.0
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	133.4	142.8	142.9	143.9	143.9	144.3	144.4	134.1	142.5	142.3	142.8	143.4	144.8	144.9
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	135.3	147.0	146.1	147.2	147.1	148.0	148.9	130.9	140.1	140.3	140.9	141.5	142.1	142.8
Meats, poultry, fish, and eggs	252.6	247.0	248.7	254.1	255.8	257.7	256.4	251.8	246.3	248.4	254.1	255.5	257.5	256.0
Meats, poultry, and fish	259.0	253.2	255.0	260.7	262.2	263.4	262.2	258.1	252.4	254.5	260.5	261.8	263.2	261.7
Meats	258.7	252.3	254.2	259.6	262.0	263.4	262.5	258.1	251.7	253.9	259.7	261.3	263.3	262.1
Beef and veal	275.8	270.3	271.1	274.5	275.9	277.1	274.9	277.4	272.5	273.0	276.5	275.9	278.3	275.3
Ground beef other than canned	275.8	264.1	264.6	264.5	267.4	270.3	267.4	278.9	267.8	267.9	267.9	269.4	273.8	268.6
Chuck roast	284.4	280.3	281.0	283.5	285.3	289.4	287.8	294.0	290.9	288.9	295.5	295.5	299.9	297.2
Round roast	250.6	246.8	246.2	245.6	247.2	244.1	245.1	251.1	249.4	249.5	249.8	247.3	249.1	250.1
Round steak	258.9	256.0	255.1	258.9	256.0	255.9	259.0	257.9	253.7	253.6	257.0	251.5	252.5	254.9
Sirloin steak	270.7	271.4	274.6	284.3	282.2	281.9	273.3	272.8	275.3	278.7	285.6	279.2	281.9	275.1
Other beef and veal (12/77 = 100)	161.0	159.2	159.9	163.5	164.3	164.9	163.4	160.3	158.5	159.2	162.4	162.6	162.8	161.3
Pork	225.8	217.3	221.2	231.5	235.3	236.1	238.6	225.8	216.3	221.3	232.6	236.5	239.4	239.3
Bacon	224.7	212.7	216.5	228.1	231.1	237.1	240.1	226.0	215.2	220.5	230.5	234.5	241.1	245.1
Chops	207.8	203.7	209.8	221.8	224.1	225.1	223.1	207.3	201.5	209.8	222.4	224.4	224.7	221.3
Ham other than canned (12/77 = 100)	105.5	97.2	98.0	102.0	105.3	106.8	109.4	103.5	93.8	95.1	100.4	103.7	105.6	107.5
Sausage	282.4	277.7	278.9	289.7	297.2	300.7	298.7	283.2	278.5	278.7	293.4	298.6	302.3	302.1
Canned ham	232.5	230.5	229.8	233.0	234.9	239.5	241.9	235.2	231.4	230.1	234.4	238.0	242.9	244.7
Other pork (12/77 = 100)	127.6	122.7	126.7	133.6	135.0	135.4	134.1	127.9	122.4	127.7	134.5	136.3	136.7	134.5
Other meats	259.4	253.9	255.9	258.4	261.4	260.7	261.6	255.8	250.6	253.1	255.6	259.6	258.7	260.5
Frankfurters	260.9	247.6	250.7	251.8	259.8	256.4	261.2	260.3	247.0	249.8	251.9	260.4	259.1	262.4
Bologna, liverwurst, and salami (12/77 = 100)	146.5	143.0	143.9	145.9	147.0	147.5	147.6	143.6	140.6	141.9	144.6	145.7	144.8	146.9
Other lunchmeats (12/77 = 100)	127.8	126.9	127.6	129.1	130.6	131.8	131.8	125.5	124.8	126.0	126.5	128.8	129.5	130.2
Lamb and organ meats (12/77 = 100)	146.1	145.3	146.5	147.6	146.8	144.4	143.4	146.5	145.9	147.1	148.9	148.3	146.0	145.0
Poultry	209.1	194.7	196.8	204.8	202.0	199.7	196.6	205.4	192.5	194.4	203.1	201.2	198.1	194.7
Fresh whole chicken	216.7	190.3	193.8	206.9	201.4	197.3	194.0	210.5	187.0	190.3	202.9	199.6	194.0	189.9
Fresh and frozen chicken parts (12/77 = 100)	134.7	127.5	128.3	133.0	131.8	130.5	129.2	133.5	126.6	127.0	133.3	131.6	130.1	129.7
Other poultry (12/77 = 100)	128.7	128.3	128.9	130.0	129.7	129.9	127.2	127.1	127.5	128.2	129.3	129.9	129.6	126.1
Fish and seafood	336.6	353.2	352.1	356.9	356.8	362.6	360.8	333.8	349.9	349.8	353.5	356.4	358.6	358.2
Canned fish and seafood (12/77 = 100)	133.9	139.2	139.3	140.6	139.8	140.9	140.5	131.2	137.8	137.9	139.0	138.5	139.4	140.3
Fresh and frozen fish and seafood (12/77 = 100)	124.8	131.8	131.0	133.1	133.6	136.5	135.6	124.6	130.5	130.4	131.9	134.1	134.9	134.0
Eggs	175.3	170.5	172.1	174.2	177.6	188.8	185.9	174.4	171.5	173.0	175.0	177.7	189.5	187.2
Dairy products	232.7	243.8	243.8	244.2	243.8	244.3	244.6	233.1	243.9	243.9	243.9	243.9	244.1	244.2
Fresh milk and cream (12/77 = 100)	129.1	134.9	134.8	134.9	134.5	134.7	134.7	129.1	134.7	134.5	134.4	134.3	134.3	134.4
Fresh whole milk	211.3	220.8	220.7	220.7	220.2	220.0	220.2	211.0	220.4	220.0	219.9	219.8	219.4	219.5
Other fresh milk and cream (12/77 = 100)	129.1	134.7	134.6	134.9	134.2	135.4	135.2	129.5	134.8	135.1	134.5	134.4	135.3	135.2
Processed dairy products (12/77 = 100)	134.9	141.9	142.0	142.5	142.5	143.0	143.3	135.8	142.6	142.9	143.1	143.3	143.4	143.6
Butter	238.9	245.2	245.1	245.8	246.2	247.1	247.2	242.5	247.6	248.7	247.7	248.5	249.9	249.7
Cheese (12/77 = 100)	133.4	140.5	140.5	140.7	140.8	140.8	140.9	133.8	140.6	140.9	141.3	141.5	140.9	140.7
Ice cream and related products (12/77 = 100)	138.0	146.2	146.4	147.6	147.9	148.7	149.9	139.1	147.8	147.8	148.0	147.9	149.1	149.9
Other dairy products (12/77 = 100)	129.0	136.1	136.3	136.6	135.6	137.3	137.0	129.4	136.4	136.8	137.2	137.2	137.6	138.1
Fruits and vegetables	254.2	276.8	278.1	284.4	286.1	281.6	275.2	252.3	274.3	275.3	281.7	282.5	276.3	270.8
Fresh fruits and vegetables	262.3	284.4	285.2	294.0	295.8	286.9	273.5	259.6	281.8	281.0	290.2	290.4	278.2	267.2
Fresh fruits	272.9	276.6	278.9	292.1	306.9	306.4	291.4	270.4	271.5	272.1	285.5	298.4	293.7	279.5
Apples	242.2	235.4	239.9	251.9	282.1	262.9	237.0	243.7	232.7	241.0	253.1	284.6	261.8	236.5
Bananas	233.4	266.3	260.5	240.6	245.2	250.7	254.9	230.2	264.2	259.0	233.8	239.9	251.3	253.3
Oranges	312.9	274.1	287.1	327.8	353.7	346.2	328.5	301.5	261.1	274.0	307.0	325.1	314.6	299.9
Other fresh fruits (12/77 = 100)	145.4	154.9	154.4	160.4	163.5	168.4	160.9	145.6	153.3	149.9	158.9	160.5	161.5	154.7
Fresh vegetables	252.4	291.7	291.1	295.9	285.5	268.6	256.8	249.9	291.1	289.0	294.4	283.2	264.4	256.1
Potatoes	295.6	384.4	414.3	414.9	375.1	329.1	290.4	292.0	378.1	402.7	404.2	362.8	316.8	287.7
Lettuce	249.1	252.5	238.7	261.3	290.6	293.5	258.3	241.3	255.6	237.1	259.2	290.0	292.9	257.2
Tomatoes	237.3	200.2	205.2	194.0	209.9	193.9	207.3	235.6	193.8	200.8	195.5	211.0	191.3	206.4
Other fresh vegetables (12/77 = 100)	129.7	158.6	151.8	154.5	143.6	137.9	139.6	129.6	160.1	153.6	155.8	144.1	136.6	140.0
Processed fruits and vegetables	247.5	270.9	272.8	276.4	277.9	278.3	279.4	264.4	268.4	271.4	274.6	276.2	276.7	277.3
Processed fruits (12/77 = 100)	127.8	142.1	142.0	143.1	143.4	143.7	144.9	128.5	141.6	142.1	142.8	143.4	143.7	144.2
Frozen fruit and fruit juices (12/77 = 100)	118.8	144.2	143.4	144.0	143.5	143.6	144.7	118.8	142.0	142.3	142.9	142.8	142.8	143.4
Fruit juices other than frozen (12/77 = 100)	131.0	145.3	145.5	146.8	147.4	147.5	148.4	131.9	145.1	145.8	146.1	147.1	147.8	147.6
Canned and dried fruits (12/77 = 100)	132.0	136.7	137.1	138.4	139.1	139.8	141.2	132.7	137.4	137.9	139.1	139.8	140.1	141.1
Processed vegetables (12/77 = 100)	120.8	130.2	132.1	134.6	135.7	135.9	135.9	119.6	128.9	131.2	133.6	134.6	134.8	134.9
Frozen vegetables (12/77 = 100)	120.3	129.8	130.8	133.2	134.9	135.7	136.9	120.3	129.6	131.9	134.1	135.7	136.6	137.5

23. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Oct.	May	June	July	Aug.	Sept.	Oct.	Oct.	May	June	July	Aug.	Sept.	Oct.
FOOD AND BEVERAGES—Continued														
Food—Continued														
Food at home—Continued														
Fruits and vegetables—Continued														
Cut corn and canned beans except lima (12/77 = 100)	122.5	131.5	134.6	136.0	137.4	136.8	137.7	120.6	130.1	133.6	134.8	135.4	135.1	135.5
Other canned and dried vegetables (12/77 = 100)	120.3	129.8	131.4	134.6	135.4	135.6	134.6	118.5	128.0	129.7	132.8	133.7	133.8	133.3
Other foods at home	311.5	323.7	323.6	323.3	325.1	325.7	326.4	311.7	324.8	324.5	324.2	326.1	326.2	327.1
Sugar and sweets	369.0	367.1	361.3	360.0	361.3	361.4	359.9	369.8	368.1	363.0	362.8	362.7	363.1	380.2
Candy and chewing gum (12/77 = 100)	134.7	145.1	145.2	145.9	146.1	146.8	148.8	135.4	145.8	146.5	147.3	147.4	147.6	148.7
Sugar and artificial sweeteners (12/77 = 100)	209.4	178.4	168.2	164.6	164.3	163.0	157.1	209.5	179.2	169.3	166.6	165.3	164.9	158.4
Other sweets (12/77 = 100)	131.5	141.4	142.6	142.9	145.0	145.3	145.2	129.2	139.7	140.8	141.8	142.9	143.8	144.0
Fats and oils (12/77 = 100)	246.0	270.7	269.6	269.0	269.2	268.5	268.5	247.0	270.9	269.5	269.0	268.7	267.4	268.1
Margarine	254.2	256.1	256.1	255.9	258.2	256.7	256.6	254.6	256.7	256.0	256.6	255.7	254.5	255.9
Nondairy substitutes and peanut butter (12/77 = 100)	125.6	182.7	181.8	181.0	179.8	178.5	176.5	125.5	181.6	180.5	179.4	178.8	177.2	175.2
Other fats, oils, and salad dressings (12/77 = 100)	128.5	130.4	129.6	129.4	129.4	129.6	130.5	128.7	130.4	129.6	129.4	129.6	129.2	130.3
Nonalcoholic beverages	404.9	412.3	412.8	410.3	413.1	413.7	414.8	405.8	414.6	414.6	411.3	415.2	414.7	416.0
Cola drinks, excluding diet cola	280.4	295.7	297.0	294.7	298.2	298.9	301.1	279.6	293.7	294.1	290.8	296.6	295.6	297.7
Carbonated drinks, including diet cola (12/77 = 100)	133.9	140.6	140.8	139.6	141.5	142.4	142.3	131.8	138.4	138.3	138.3	138.9	140.3	139.6
Roasted coffee	411.8	354.4	353.1	351.4	346.0	345.1	343.1	409.3	350.5	348.5	346.6	342.8	340.5	338.9
Freeze dried and instant coffee	368.1	339.1	335.2	334.3	333.3	330.8	329.9	366.3	340.2	337.1	334.9	333.8	331.4	332.7
Other noncarbonated drinks (12/77 = 100)	125.8	134.0	134.5	134.2	134.9	134.9	135.6	125.3	133.9	134.4	134.0	135.0	134.6	135.5
Other prepared foods	236.6	252.9	254.4	256.3	257.9	259.0	260.5	236.9	254.7	255.8	257.9	256.7	260.5	262.3
Canned and packaged soup (12/77 = 100)	124.1	131.5	132.6	133.2	133.6	134.9	133.1	124.9	132.1	133.5	134.5	134.8	136.4	135.6
Frozen prepared foods (12/77 = 100)	133.9	141.6	142.2	143.7	143.5	144.8	144.1	131.9	139.6	140.8	142.3	142.5	142.7	142.8
Snacks (12/77 = 100)	130.6	145.9	147.2	147.5	148.8	149.6	152.0	131.0	149.1	149.1	150.0	151.5	152.6	155.3
Seasonings, olives, pickles, and relish (12/77 = 100)	131.9	140.0	141.1	142.0	144.4	144.4	146.2	132.2	139.3	140.3	141.4	142.8	142.7	144.8
Other condiments (12/77 = 100)	133.4	141.1	140.8	142.3	142.9	143.3	143.5	135.3	143.6	143.2	144.4	145.6	145.3	145.5
Miscellaneous prepared foods (12/77 = 100)	132.0	138.6	139.3	140.7	142.0	142.3	144.5	131.7	139.6	139.9	141.0	142.1	142.8	143.9
Other canned and packaged prepared foods (12/77 = 100)	127.9	136.6	137.7	139.0	139.5	139.9	140.5	128.2	137.2	138.5	139.8	140.8	141.1	141.9
Food away from home	273.1	289.3	290.6	292.4	293.7	294.8	296.2	277.4	291.9	293.5	295.2	296.4	297.6	299.0
Lunch (12/77 = 100)	132.9	141.0	141.5	142.6	143.2	143.6	143.9	134.4	141.8	142.8	143.6	144.2	144.6	145.3
Dinner (12/77 = 100)	132.4	139.9	140.7	141.3	141.9	142.4	143.2	135.1	141.7	142.6	143.0	143.7	144.3	144.8
Other meals and snacks (12/77 = 100)	131.8	139.9	140.3	141.6	142.1	143.1	143.9	133.9	141.1	141.3	142.7	143.1	143.9	144.8
Alcoholic beverages	190.4	199.1	199.8	200.5	201.4	202.5	201.4	192.5	201.2	202.1	202.8	203.8	204.6	204.3
Alcoholic beverages at home (12/77 = 100)	124.0	129.3	129.7	130.1	130.6	131.4	130.5	125.6	131.1	131.5	131.9	132.4	132.8	132.5
Beer and ale	191.7	201.4	202.0	201.8	202.6	203.6	202.5	192.0	201.8	202.4	202.4	203.2	203.5	203.1
Whiskey	137.7	142.5	143.0	143.7	144.7	145.4	144.0	139.0	143.2	144.0	144.7	145.6	146.2	146.4
Wine	215.4	223.9	224.6	227.5	[illegible]	229.7	228.2	224.2	234.3	233.4	236.9	235.5	237.6	238.1
Other alcoholic beverages (12/77 = 100)	112.5	115.5	116.1	116.3	[illegible]	117.5	116.3	111.6	114.6	115.7	155.9	117.0	117.1	115.7
Alcoholic beverages away from home (12/77 = 100)	125.1	132.6	133.1	134.1	134.7	135.4	135.5	125.3	132.0	133.4	134.0	135.4	[illegible]	136.4
HOUSING	271.1	288.5	292.2	297.0	299.7	303.7	303.5	271.0	288.1	291.9	297.0	299.6	303.6	303.3
Shelter	290.4	308.4	312.6	318.5	322.0	326.9	326.6	292.0	308.4	313.7	320.2	323.6	328.6	328.1
Rent, residential	197.1	205.9	206.8	207.8	210.3	211.9	213.6	196.8	205.5	206.4	207.4	209.9	211.5	213.2
Other rental costs	268.8	286.4	289.5	293.6	298.5	308.1	308.7	268.8	286.1	289.7	293.3	299.0	308.0	308.4
Lodging while out of town	286.0	307.2	311.8	318.3	325.7	326.3	324.2	284.9	305.5	310.6	316.3	324.4	325.3	323.3
Tenants' insurance (12/77 = 100)	125.4	131.9	133.1	133.3	133.9	135.9	140.0	126.0	132.3	133.4	133.7	134.5	136.4	140.1
Homeownership	323.8	345.0	350.4	358.0	361.8	367.8	366.7	326.7	347.1	352.7	361.2	364.8	371.0	369.7
Home purchase	265.5	263.0	266.6	271.4	272.6	274.5	272.5	266.4	262.2	266.2	271.2	272.3	273.8	271.4
Financing, taxes, and insurance	404.7	458.3	467.2	480.0	488.3	501.8	501.8	410.8	464.3	473.8	486.9	495.3	509.0	508.3
Property insurance	362.0	383.7	386.6	387.1	389.0	369.7	392.5	365.3	387.1	388.1	388.3	390.5	391.9	394.7
Property taxes	192.0	199.8	200.3	201.4	205.2	206.2	207.4	193.8	201.7	202.2	203.2	207.1	208.0	209.2
Contracted mortgage interest cost	518.1	596.9	610.4	630.1	641.3	662.0	661.3	521.2	598.6	612.9	632.6	643.8	664.4	662.5
Mortgage interest rates	192.6	224.0	226.4	299.4	232.4	238.2	239.5	193.0	224.9	227.2	230.3	233.3	239.2	240.5
Maintenance and repairs	292.8	312.9	315.5	319.3	320.5	321.6	320.8	290.4	307.3	308.2	316.2	315.8	318.1	319.2
Maintenance and repair services	317.0	341.2	344.4	349.0	350.6	352.5	351.1	315.1	337.6	338.7	350.5	349.5	352.5	354.2
Maintenance and repair commodities	236.3	246.3	247.6	249.3	249.5	248.7	249.3	235.0	241.1	241.5	242.4	243.1	244.1	244.0
Paint and wallpaper, supplies, tools, and equipment (12/77 = 100)	136.9	143.9	145.3	146.7	146.9	146.2	146.7	133.1	137.7	138.4	138.2	139.2	139.1	139.9
Lumber, awnings, glass, and masonry (12/77 = 100)	122.4	125.1	124.7	125.0	124.2	125.0	124.4	122.5	123.7	122.7	123.0	122.0	123.2	122.3
Plumbing, electrical, heating, and cooling supplies (12/77 = 100)	123.8	130.7	131.2	132.7	132.0	131.2	132.4	126.6	128.1	128.5	130.1	130.6	131.7	132.1
Miscellaneous supplies and equipment (12/77 = 100)	123.3	127.6	128.5	129.2	130.5	131.2	131.7	125.9	130.8	131.7	132.5	133.3	134.3	133.7
Fuel and other utilities	287.6	314.9	320.2	325.1	327.8	331.1	330.1	288.0	315.7	321.2	326.4	328.7	332.3	330.9
Fuels	362.8	403.3	411.7	417.2	419.5	422.4	419.0	362.1	402.5	411.2	417.0	418.7	422.2	418.4
Fuel oil, coal, and bottled gas	558.7	685.8	682.0	677.9	674.6	673.4	672.7	559.9	688.6	685.1	681.1	677.9	677.0	675.9
Fuel oil	581.5	720.6	715.7	711.0	707.3	705.7	704.3	581.8	723.1	718.4	713.8	710.2	709.0	717.1
Other fuels (6/78 = 100)	143.1	163.6	164.3	164.0	163.6	163.8	165.0	144.8	164.7	165.5	165.4	165.1	165.3	166.4
Gas (piped) and electricity	317.1	339.6	350.2	357.6	360.8	364.5	360.6	316.0	338.1	349.0	356.7	359.4	363.6	359.3
Electricity	265.3	281.9	296.7	306.2	311.9	309.8	303.0	265.3	281.2	296.6	306.2	312.1	309.9	302.7
Utility (piped) gas	384.6	416.5	416.9	418.6	416.2	431.7	434.5	380.9	413.0	413.2	415.8	411.2	428.5	430.8

23. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Oct.	May	June	July	Aug.	Sept.	Oct.	Oct.	May	June	July	Aug.	Sept.	Oct.
HOUSING—Continued														
Fuel and other utilities—Continued														
Other utilities and public services	167.8	176.2	177.1	180.8	183.7	187.4	189.4	167.8	176.6	177.3	181.3	184.3	187.8	189.8
Telephone services	137.5	144.0	143.5	147.2	149.2	152.5	154.3	137.4	144.1	143.6	147.5	149.5	152.7	154.5
Local charges (12/77 = 100)	106.6	115.5	114.9	116.7	117.3	120.5	121.5	106.5	115.7	115.1	116.9	117.6	120.7	121.8
Interstate toll calls (12/77 = 100)	102.1	101.8	101.8	109.1	113.4	114.9	116.6	102.1	101.9	101.9	109.6	113.6	115.1	116.6
Intrastate toll calls (12/77 = 100)	100.1	101.7	101.5	101.5	101.8	103.9	105.5	99.9	101.5	101.3	101.3	101.6	103.7	105.3
Water and sewerage maintenance	268.2	282.3	281.2	294.0	299.2	304.1	305.2	267.3	284.7	282.5	285.8	301.4	306.0	307.3
Household furnishings and operations	210.1	220.1	221.1	222.4	222.9	224.5	225.6	206.8	216.8	217.8	219.1	219.8	221.2	222.2
Housefurnishings	177.9	184.2	185.2	186.0	186.2	187.9	188.7	175.6	182.1	182.8	184.1	184.5	185.7	186.6
Textile housefurnishings	195.9	198.3	202.5	202.9	203.4	207.7	210.4	195.1	202.3	204.4	206.2	207.3	213.0	214.1
Household linens (12/77 = 100)	119.5	122.3	125.1	123.3	124.5	127.7	130.1	119.5	124.7	125.7	126.0	126.8	129.7	132.0
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	124.9	125.0	127.4	129.8	129.1	131.4	132.2	124.1	127.7	129.5	131.5	132.1	136.3	135.2
Furniture and bedding	195.2	204.2	204.6	206.0	205.4	207.7	207.9	192.5	200.6	200.1	202.3	201.4	202.7	203.8
Bedroom furniture (12/77 = 100)	127.4	133.4	134.6	135.0	135.9	137.6	137.4	124.6	129.2	129.2	130.7	132.2	132.8	132.3
Sofas (12/77 = 100)	113.8	117.0	116.2	117.6	116.0	118.6	119.3	113.0	115.8	116.0	116.2	115.0	117.4	119.0
Living room chairs and tables (12/77 = 100)	113.0	117.5	116.9	117.9	116.7	116.8	117.0	114.4	119.1	118.2	119.5	116.9	117.2	118.5
Other furniture (12/77 = 100)	127.0	134.7	135.4	136.2	135.9	137.3	137.3	123.6	131.2	130.5	132.9	132.2	132.3	133.0
Appliances including TV and sound equipment	142.3	145.5	146.3	147.1	147.3	147.7	147.8	141.2	144.4	145.6	146.3	146.6	146.7	147.2
Television and sound equipment (12/77 = 100)	107.1	108.3	108.2	108.8	108.6	108.7	109.1	105.6	106.9	107.3	107.7	107.8	107.8	108.1
Television	104.7	105.4	105.3	105.6	105.0	104.6	105.0	103.2	104.4	104.3	104.5	104.2	103.6	103.8
Sound equipment (12/77 = 100)	110.3	112.1	111.9	112.7	112.8	113.4	113.8	108.7	110.1	110.9	111.4	111.9	112.4	112.8
Household appliances	166.0	171.3	173.2	174.2	174.9	175.7	175.3	165.3	170.6	172.6	173.6	174.1	174.4	175.1
Refrigerators and home freezers	165.8	170.9	172.4	174.2	175.8	177.5	177.0	169.4	175.8	177.1	178.1	178.9	180.6	181.6
Laundry equipment (12/77 = 100)	121.5	126.2	128.0	128.1	129.2	129.7	130.5	120.2	125.3	127.1	128.3	129.1	128.8	129.8
Other household appliances (12/77 = 100)	114.2	117.6	118.9	119.6	119.5	119.7	118.9	112.5	115.2	116.6	117.1	117.0	117.1	117.1
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	112.4	117.2	118.4	119.2	118.5	118.8	118.2	112.1	115.1	116.5	117.1	116.4	116.0	115.9
Office machines, small electric appliances, and air conditioners (12/77 = 100)	116.2	118.0	119.4	120.1	120.6	120.8	119.8	113.0	115.3	116.7	117.1	117.7	118.3	118.4
Other household equipment (12/77 = 100)	124.1	130.7	131.0	131.2	131.7	133.1	134.2	122.2	129.0	129.3	129.8	131.0	131.6	132.4
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	123.3	132.2	132.1	132.4	133.4	134.8	135.4	118.2	125.1	125.3	127.1	129.3	128.6	129.6
Clocks, lamps, and decor items (12/77 = 100)	121.6	124.4	124.6	125.0	125.8	128.2	128.7	119.4	120.9	121.9	122.9	122.5	123.8	124.5
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	130.0	138.8	139.5	139.5	138.9	140.4	141.1	126.3	136.0	136.0	136.4	137.0	137.8	137.9
Lawn equipment, power tools, and other hardware (12/77 = 100)	117.9	122.5	122.6	122.7	124.0	124.5	127.2	120.9	127.0	127.1	126.7	128.8	129.2	131.2
Housekeeping supplies	253.6	269.0	269.8	271.5	272.0	273.3	274.3	251.2	265.5	266.9	267.9	268.6	270.4	271.2
Soaps and detergents	248.7	262.6	266.0	266.5	267.0	268.9	269.3	245.6	260.2	263.6	263.1	263.6	265.6	265.3
Other laundry and cleaning products (12/77 = 100)	125.7	132.8	133.4	134.8	134.8	135.7	136.7	125.1	131.5	132.3	133.6	134.7	135.8	136.6
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	134.2	137.8	137.6	138.8	138.4	139.9	141.8	136.2	137.9	138.2	139.0	138.7	140.4	142.4
Stationery, stationery supplies, and gift wrap (12/77 = 100)	118.6	125.1	125.8	126.6	126.6	127.2	128.1	118.2	126.8	127.2	127.9	129.2	128.7	130.8
Miscellaneous household products (12/77 = 100)	129.5	138.4	139.5	140.5	141.7	142.8	142.8	126.7	135.0	136.1	136.6	136.9	138.1	137.8
Lawn and garden supplies (12/77 = 100)	126.9	140.6	138.4	138.8	139.2	137.8	136.6	121.0	132.4	131.3	131.7	131.8	131.1	129.0
Housekeeping services	274.5	281.6	292.9	295.3	296.9	298.3	300.5	271.0	286.9	291.7	293.4	295.1	296.9	298.9
Postage	257.3	308.0	308.0	308.0	308.0	308.0	308.0	257.3	308.1	308.1	308.1	308.1	308.1	308.1
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	133.3	141.6	141.9	143.1	143.9	144.7	145.5	130.2	140.7	141.8	142.8	143.8	144.9	145.2
Appliance and furniture repair (12/77 = 100)	120.3	125.9	126.3	127.8	128.5	129.0	131.3	119.2	124.6	125.4	126.4	127.2	128.3	130.5
APPAREL AND UPKEEP	183.9	186.4	185.8	184.7	187.4	190.7	191.5	182.8	186.2	185.8	185.5	187.9	190.5	190.6
Apparel commodities	176.4	177.2	176.4	175.1	178.0	181.4	182.1	175.6	177.6	177.0	176.6	179.0	181.6	181.5
Apparel commodities less footwear	173.1	173.3	172.5	171.2	174.3	178.0	178.4	172.2	173.8	173.0	172.8	175.2	178.1	177.7
Men's and boys'	173.9	176.8	176.6	175.6	177.6	181.1	183.6	173.8	177.3	177.2	176.9	178.4	181.4	182.9
Men's (12/77 = 100)	109.5	111.2	111.0	110.3	111.7	114.3	115.9	109.5	111.8	111.6	111.6	112.8	115.0	115.8
Suits, sport coats, and jackets (12/77 = 100)	104.3	104.7	104.3	102.5	105.6	108.8	109.8	99.7	99.3	98.4	97.4	99.7	102.1	102.0
Coats and jackets (12/77 = 100)	100.4	97.9	98.1	96.7	97.7	101.0	102.4	101.3	100.5	101.2	100.8	102.4	106.1	104.9
Furnishings and special clothing (12/77 = 100)	122.9	129.2	129.7	129.6	129.5	132.7	134.3	118.8	123.9	124.1	124.8	125.3	128.5	130.0
Shirts (12/77 = 100)	118.3	118.3	117.9	115.5	117.9	120.6	123.0	118.5	120.3	120.4	118.8	122.1	123.9	125.5
Dungarees, jeans, and trousers (12/77 = 100)	102.6	105.5	105.0	106.5	106.6	107.8	109.2	108.3	112.2	111.8	113.2	112.5	113.5	114.7
Boys' (12/77 = 100)	113.0	115.1	115.4	115.1	115.8	116.4	118.1	112.0	114.2	114.3	113.6	113.8	114.8	116.4
Coats, jackets, sweaters, and shirts (12/77 = 100)	109.2	108.8	108.7	107.0	109.2	111.3	111.9	111.2	111.8	109.8	107.6	109.5	112.3	113.5
Furnishings (12/77 = 100)	118.1	121.4	123.9	124.5	124.3	125.0	125.6	115.1	117.4	119.5	120.6	120.3	120.9	121.8
Suits, trousers, sport coats, and jackets (12/77 = 100)	113.9	117.5	117.3	117.7	117.5	117.0	119.9	111.5	114.8	115.9	115.6	114.7	114.4	116.6
Women's and girls'	158.7	157.2	155.4	153.5	157.8	162.9	161.2	160.3	160.0	158.1	157.9	161.2	164.9	162.7
Women's (12/77 = 100)	106.1	103.9	102.7	101.2	104.4	108.1	106.8	107.0	106.2	104.9	104.5	107.1	109.8	108.1
Coats and jackets	167.0	152.8	149.5	153.9	162.1	170.8	167.3	176.5	155.8	148.9	159.0	168.7	177.8	171.4
Dresses	170.0	164.8	163.7	162.2	166.2	170.8	166.9	157.5	158.7	156.6	154.1	153.4	155.5	151.5
Separates and sportswear (12/77 = 100)	101.6	99.0	98.0	95.1	97.4	101.1	100.4	103.6	101.5	101.0	99.1	101.1	103.3	102.3
Underwear, nightwear, and hosiery (12/77 = 100)	114.9	119.7	119.8	120.0	121.2	122.8	123.0	115.3	119.5	120.0	120.1	121.0	122.7	123.4
Suits (12/77 = 100)	98.2	90.7	86.3	78.6	87.0	95.4	92.4	106.8	106.9	103.6	100.6	109.8	115.0	110.2
Girls' (12/77 = 100)	107.0	107.9	106.4	106.5	107.9	108.7	109.2	105.1	107.1	106.2	106.9	107.6	108.8	108.4
Coats, jackets, dresses, and suits (12/77 = 100)	103.2	104.1	100.4	100.0	101.6	103.3	99.8	99.0	98.8	98.1	98.9	101.5	103.3	99.8
Separates and sportswear (12/77 = 100)	106.7	106.9	105.9	108.1	108.7	111.0	112.0	106.3	109.6	108.1	108.9	108.9	110.0	110.6
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	113.8	116.1	117.2	117.6	117.0	117.9	119.6	112.8	115.9	116.2	116.3	115.1	115.5	118.5

23. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Oct.	May	June	July	Aug.	Sept.	Oct.	Oct.	May	June	July	Aug.	Sept.	Oct.
APPAREL AND UPKEEP—Continued														
Apparel commodities—Continued														
Apparel commodities less footwear—Continued														
Infants' and toddlers'	244.1	256.9	260.0	259.8	263.6	266.4	268.5	249.2	269.9	273.0	272.9	279.3	279.8	281.6
Other apparel commodities	211.8	212.1	212.2	212.4	214.0	213.3	216.2	204.1	204.1	204.8	204.8	206.1	206.0	206.2
Sewing materials and notions (12/77 = 100)	111.9	114.3	114.5	115.3	117.5	118.3	118.1	112.0	118.4	113.2	113.6	115.3	116.4	116.3
Jewelry and luggage (12/77 = 100)	147.5	146.8	146.8	146.6	147.2	146.2	149.0	141.1	140.5	141.2	141.0	141.4	140.9	141.1
Footwear	196.1	201.0	200.4	199.0	200.0	202.4	204.2	195.6	200.0	200.6	199.2	200.8	202.3	204.1
Men's (12/77 = 100)	124.7	127.8	127.7	128.0	128.3	128.8	129.3	125.8	128.7	129.5	129.5	129.8	129.7	130.3
Boys' and girls' (12/77 = 100)	125.8	129.3	129.1	130.1	129.1	129.7	131.1	126.9	127.7	128.6	128.7	130.4	130.7	132.2
Women's (12/77 = 100)	119.6	122.4	121.6	118.7	120.6	123.5	124.9	116.3	120.5	120.2	117.8	118.9	121.2	122.5
Apparel services	240.0	256.4	257.8	258.9	260.2	262.0	263.2	238.1	254.2	255.7	256.3	258.2	260.0	262.1
Laundry and drycleaning other than coin operated (12/77 = 100)	141.1	152.2	153.2	153.8	154.7	155.7	157.1	140.9	151.5	152.5	153.1	153.9	155.0	156.4
Other apparel services (12/77 = 100)	129.2	135.6	136.0	136.7	137.2	138.2	137.5	127.4	134.5	135.0	135.1	136.5	137.4	138.3
TRANSPORTATION	256.1	277.8	279.9	282.6	283.7	285.2	287.2	256.6	278.9	281.0	283.9	285.1	286.6	288.9
Private	254.5	276.0	277.9	279.6	280.5	281.9	283.9	255.5	277.7	279.7	281.6	282.6	284.1	286.4
New cars	181.9	190.9	192.2	192.5	191.9	191.3	192.5	182.0	191.2	192.5	192.9	192.1	191.4	192.7
Used cars	222.7	245.2	252.9	260.3	266.9	272.8	278.2	222.7	245.2	252.9	260.3	266.9	272.8	278.2
Gasoline	370.5	416.5	414.4	412.9	411.7	411.2	409.9	371.7	417.7	415.6	414.0	412.9	412.4	411.3
Automobile maintenance and repair	276.0	290.8	291.9	293.5	295.5	298.7	301.3	276.6	291.3	292.6	293.4	296.1	299.3	301.8
Body work (12/77 = 100)	135.0	141.5	142.3	144.1	145.8	147.4	148.7	134.6	141.3	142.2	143.3	145.4	146.1	147.2
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	132.7	138.7	138.9	139.9	140.9	143.1	144.0	133.9	141.2	141.7	141.4	142.6	145.5	146.5
Maintenance and servicing (12/77 = 100)	130.0	136.5	137.1	137.4	137.8	138.9	140.3	130.2	136.4	136.9	137.3	138.2	139.2	140.3
Power plant repair (12/77 = 100)	129.8	138.6	139.2	139.9	141.2	142.6	144.0	129.6	137.7	138.3	139.1	140.5	141.9	143.5
Other private transportation	226.5	238.9	241.0	242.9	243.0	244.2	247.5	228.0	241.9	243.9	246.0	245.6	246.9	250.6
Other private transportation commodities	200.9	208.6	208.5	208.8	212.1	212.6	212.7	201.4	211.7	211.1	210.8	213.4	215.5	216.1
Motor oil, coolant, and other products (12/77 = 100)	136.5	143.1	144.5	144.8	146.8	147.7	148.0	135.4	141.4	142.7	143.4	144.1	145.3	144.8
Automobile parts and equipment (12/77 = 100)	128.9	133.6	133.4	133.6	135.7	136.0	136.0	129.4	136.1	135.5	135.2	137.0	138.4	138.9
Tires	179.2	186.4	186.1	185.6	189.3	189.7	189.4	180.8	191.1	189.9	188.4	191.5	194.1	194.6
Other parts and equipment (12/77 = 100)	126.9	130.4	130.2	131.7	132.4	132.8	133.4	125.7	130.7	130.7	132.2	132.9	133.2	134.3
Other private transportation services	235.6	249.4	252.0	254.3	253.6	255.0	259.1	237.3	252.4	255.0	257.7	256.6	257.7	262.2
Automobile insurance	251.5	256.8	257.4	259.8	260.3	262.0	264.6	251.2	256.3	256.9	259.6	260.1	261.8	264.3
Automobile finance charges (12/77 = 100)	149.9	172.9	178.5	180.9	177.3	178.0	184.4	148.3	172.5	177.2	179.9	176.3	176.5	183.1
Automobile rental, registration, and other fees (12/77 = 100)	114.6	117.7	117.8	118.0	119.5	120.1	120.2	116.3	118.1	118.2	118.4	119.5	119.8	120.0
State registration	146.5	147.5	148.0	147.9	147.9	147.9	147.9	146.5	147.7	148.1	147.9	148.0	148.0	148.0
Drivers' licenses (12/77 = 100)	104.9	105.5	105.8	105.9	106.2	109.6	109.9	104.7	105.2	105.6	105.6	105.9	109.5	109.8
Vehicle inspection (12/77 = 100)	122.9	125.8	125.7	128.6	(1)	(1)	(1)	123.6	126.5	126.5	129.3	(1)	(1)	(1)
Other vehicle-related fees (12/77 = 100)	130.0	136.3	136.3	136.6	140.0	140.9	141.2	139.1	142.8	142.6	143.1	145.8	145.9	146.5
Public	273.6	297.7	303.9	323.1	326.5	329.1	330.8	266.5	288.2	293.6	317.7	320.9	324.5	326.6
Airline fare	315.0	348.8	360.7	367.3	371.4	372.5	372.0	313.0	346.7	359.3	365.6	370.0	371.8	372.9
Intercity bus fare	307.1	333.4	337.6	343.5	347.5	351.4	361.3	306.9	333.0	336.8	343.6	347.3	351.7	362.1
Intracity mass transit	235.6	251.9	253.5	290.7	294.0	298.6	301.7	235.2	249.9	251.5	291.0	293.9	299.2	301.3
Taxi fare	267.9	280.4	281.7	287.1	288.1	288.6	289.3	274.7	287.9	289.2	295.7	296.7	297.1	298.1
Intercity train fare	255.6	296.7	304.1	304.6	304.6	305.0	315.0	255.7	298.5	304.6	304.9	305.0	305.2	314.9
MEDICAL CARE	272.8	289.0	291.5	295.6	299.3	301.7	304.8	274.3	290.8	292.9	295.4	298.6	300.9	304.0
Medical care commodities	172.5	184.7	186.3	187.7	189.4	190.8	192.1	173.0	185.9	187.3	189.2	190.6	191.9	192.9
Prescription drugs	158.5	170.4	172.3	173.7	175.4	176.5	178.6	159.5	171.6	173.5	175.0	176.5	178.0	179.4
Anti-infective drugs (12/77 = 100)	124.1	130.3	132.2	133.9	134.8	136.5	136.8	125.1	132.7	134.3	135.8	137.0	139.2	139.6
Tranquilizers and sedatives (12/77 = 100)	127.1	136.0	137.3	138.4	139.6	140.0	141.9	126.2	135.2	136.5	137.6	138.8	139.7	141.3
Circulatories and diuretics (12/77 = 100)	117.3	124.9	125.5	126.5	127.6	127.8	129.5	119.3	126.1	126.8	127.9	128.6	129.0	130.5
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	139.6	154.6	157.2	158.1	160.4	160.6	161.9	138.8	154.5	158.1	158.2	160.3	161.4	162.8
Pain and symptom control drugs (12/77 = 100)	126.3	136.5	137.7	139.1	140.2	141.7	144.1	128.7	138.2	138.9	141.8	142.7	143.8	144.2
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	120.4	130.2	131.1	131.8	133.1	134.1	136.8	122.1	131.2	132.0	132.5	133.9	134.6	136.1
Nonprescription drugs and medical supplies (12/77 = 100)	124.4	132.6	133.5	134.5	135.6	136.7	137.0	124.4	133.6	134.4	135.8	136.7	137.4	137.9
Eyeglasses (12/77 = 100)	121.0	125.3	125.3	125.8	126.3	126.9	127.4	119.6	124.1	124.7	125.0	125.3	126.0	126.0
Internal and respiratory over-the-counter drugs	193.5	209.1	211.5	213.1	215.5	217.8	217.3	194.0	211.0	212.6	215.4	217.5	218.9	219.5
Nonprescription medical equipment and supplies (12/77 = 100)	121.3	128.6	128.6	129.9	130.4	131.4	132.7	121.8	130.5	130.7	132.2	132.3	132.6	133.8
Medical care services	294.8	311.7	314.4	319.2	323.4	326.1	329.7	296.6	313.6	315.8	318.5	322.1	324.7	328.3
Professional services	259.0	273.8	275.8	280.4	282.9	284.3	286.4	261.9	278.0	279.4	280.8	282.7	284.5	286.2
Physicians' services	276.0	295.5	297.5	300.7	302.7	304.9	307.9	281.8	300.3	302.4	304.7	306.7	308.6	310.9
Dental services	247.5	257.7	260.2	266.5	269.9	270.8	271.6	249.0	263.3	264.0	264.6	266.6	268.4	269.5
Other professional services (12/77 = 100)	127.6	133.7	134.2	136.8	137.3	137.7	138.9	125.1	132.1	132.6	132.7	133.6	134.3	134.9
Other medical care services	338.0	357.6	361.1	366.1	372.5	376.5	382.1	339.2	357.1	360.3	364.6	370.6	374.1	380.2
Hospital and other medical services (12/77 = 100)	139.3	148.3	149.6	151.7	154.7	156.6	159.0	138.9	147.3	148.6	150.3	153.1	154.8	157.9
Hospital room	435.8	465.1	470.4	478.0	489.4	494.6	503.0	435.3	461.3	467.1	472.2	482.6	488.5	498.9
Other hospital and medical care services (12/77 = 100)	139.0	147.6	148.7	150.4	152.9	155.0	157.2	138.4	146.8	147.6	149.4	151.8	153.4	156.1

23. Continued — Consumer Price Index — U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Oct.	May	June	July	Aug.	Sept.	Oct.	Oct.	May	June	July	Aug.	Sept.	Oct.
ENTERTAINMENT	210.9	220.3	220.8	221.1	222.3	224.0	225.5	209.2	217.7	218.3	218.7	219.9	221.5	223.4
Entertainment commodities	213.7	225.0	225.4	225.5	226.5	227.9	228.9	209.0	220.4	220.8	221.1	222.2	224.0	224.2
Reading materials (12/77 = 100)	127.0	135.6	136.2	136.0	136.0	138.1	138.7	126.6	135.6	136.1	135.9	135.9	137.8	138.3
Newspapers	245.3	264.1	264.9	265.0	265.5	266.3	267.1	244.6	264.0	264.8	265.0	265.4	266.2	266.9
Magazines, periodicals, and books (12/77 = 100)	129.6	137.1	137.9	137.3	137.2	141.1	141.9	129.6	137.3	138.2	137.4	137.1	141.2	141.9
Sporting goods and equipment (12/77 = 100)	121.8	127.2	126.8	127.0	127.2	127.3	128.3	116.3	120.8	120.4	120.6	120.8	121.3	121.4
Sport vehicles (12/77 = 100)	122.9	129.5	128.7	129.0	128.6	128.4	129.4	114.5	119.3	118.4	118.5	118.3	118.7	118.6
Indoor and warm weather sport equipment (12/77 = 100)	114.5	117.4	116.9	117.7	118.2	119.1	119.2	112.5	116.4	116.9	117.0	116.7	117.2	117.3
Bicycles	185.3	190.4	191.0	191.0	192.2	193.2	194.4	185.4	191.6	192.0	192.1	193.5	193.9	195.9
Other sporting goods and equipment (12/77 = 100)	118.2	122.4	122.7	122.7	124.1	125.0	126.6	117.8	121.5	122.2	122.9	124.9	125.8	126.2
Toys, hobbies, and other entertainment (12/77 = 100)	122.8	128.8	129.3	129.3	130.5	131.0	131.3	120.9	127.7	128.1	128.5	129.6	130.6	130.5
Toys, hobbies, and music equipment (12/77 = 100)	120.9	127.6	127.9	127.9	129.3	129.4	129.6	117.4	125.0	125.3	125.3	126.6	127.1	126.2
Photographic supplies and equipment (12/77 = 100)	123.1	125.8	126.2	125.7	126.0	126.4	126.0	122.3	126.1	126.5	127.0	127.1	127.7	127.8
Pet supplies and expenses (12/77 = 100)	125.8	133.3	134.2	134.5	136.2	137.2	138.3	126.4	133.6	134.3	135.1	136.6	138.8	139.9
Entertainment services	207.2	214.0	214.7	215.2	216.7	218.9	221.0	210.6	214.2	215.1	215.8	217.0	218.3	223.3
Fees for participant sports (12/77 = 100)	125.5	130.7	131.3	131.6	132.0	134.3	136.4	127.0	130.5	131.4	131.6	132.4	134.0	138.9
Admissions (12/77 = 100)	122.7	125.1	124.9	125.9	128.1	128.0	128.3	124.2	125.0	124.8	125.7	126.9	127.3	128.2
Other entertainment services (12/77 = 100)	119.0	121.7	122.2	121.7	121.7	122.5	123.1	121.6	122.5	123.4	123.2	123.1	122.7	124.2
OTHER GOODS AND SERVICES	221.5	232.2	233.4	234.4	235.6	243.0	245.2	219.9	230.4	231.4	232.4	233.5	239.3	241.4
Tobacco products	204.5	218.2	219.1	219.3	219.9	221.7	225.3	204.3	217.8	218.4	218.4	219.1	220.9	224.5
Cigarettes	206.8	220.8	221.4	221.6	222.2	224.2	228.1	206.7	220.3	220.8	220.7	221.4	223.4	227.2
Other tobacco products and smoking accessories (12/77 = 100)	123.2	130.4	132.3	132.5	132.9	133.1	134.0	123.1	131.3	132.7	133.4	133.9	134.4	134.7
Personal care	217.8	230.5	232.1	233.4	235.1	236.3	236.9	218.0	228.4	229.7	231.2	232.4	233.6	234.1
Toilet goods and personal care appliances	211.8	226.6	228.6	228.7	230.1	231.2	231.6	212.1	225.5	227.2	228.4	229.4	231.1	231.4
Products for the hair, hairpieces, and wigs (12/77 = 100)	124.5	132.4	132.8	133.9	134.1	134.1	134.9	123.6	130.1	130.4	131.7	132.5	133.3	131.8
Dental and shaving products (12/77 = 100)	126.0	138.6	139.4	139.0	140.0	140.0	139.8	125.3	136.1	136.6	137.1	137.6	138.0	138.0
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	121.3	127.8	129.0	127.7	128.9	130.7	131.2	121.1	126.2	128.0	128.3	128.9	130.4	131.6
Other toilet goods and small personal care appliances (12/77 = 100)	120.8	129.8	132.0	133.0	133.9	134.2	133.7	123.6	134.0	135.4	135.9	136.4	137.4	138.2
Personal care services	223.8	234.7	236.0	238.4	240.3	241.5	242.3	224.0	231.5	232.5	234.4	235.7	236.3	237.1
Beauty parlor services for women	225.2	236.4	237.7	240.5	241.9	243.0	243.9	225.6	232.0	232.7	235.1	235.7	236.1	236.7
Haircuts and other barber shop services for men (12/77 = 100)	125.3	131.1	131.9	132.7	134.4	135.3	135.6	125.0	130.5	131.3	131.8	133.3	133.9	134.5
Personal and educational expenses	251.1	256.8	257.8	259.2	260.4	261.5	264.6	251.2	257.7	258.5	260.1	261.7	261.8	264.8
Schoolbooks and supplies	221.9	230.8	230.9	231.3	231.4	252.1	254.5	225.6	234.7	234.7	235.2	235.2	255.9	258.3
Personal and educational services	257.8	263.0	264.2	265.8	267.2	288.5	291.7	257.5	263.6	264.6	266.4	268.4	288.5	291.6
Tuition and other school fees	132.2	132.8	132.9	133.5	134.2	147.4	149.0	132.4	133.0	133.1	133.7	134.7	147.7	149.3
College tuition (12/77 = 100)	131.5	132.3	132.4	133.0	133.2	146.3	148.2	131.5	132.3	132.4	132.9	133.1	146.1	148.1
Elementary and high school tuition (12/77 = 100)	134.4	134.4	134.4	135.3	137.8	151.5	151.6	134.3	134.4	134.4	135.4	138.7	152.1	152.2
Personal expenses (12/77 = 100)	132.4	143.6	146.3	147.9	148.7	150.0	152.3	131.0	142.8	144.8	146.6	147.6	148.5	150.4
Special indexes:														
Gasoline, motor oil, coolant, and other products	365.5	410.4	408.4	407.1	405.9	405.4	404.3	366.6	411.5	409.5	408.0	406.9	406.5	405.4
Insurance and finance	346.4	386.6	393.4	402.7	408.1	417.6	419.0	346.7	386.1	393.1	402.4	407.3	416.4	417.6
Utilities and public transportation	254.9	272.4	278.5	286.5	289.7	293.3	292.7	253.5	270.6	276.7	285.6	288.5	292.4	291.6
Housekeeping and home maintenance services	304.7	326.2	328.6	332.3	334.0	335.7	335.9	302.4	323.8	325.1	322.8	333.0	335.5	337.3

[1] Not available.

24. Consumer Price Index for All Urban Consumers: Cross classification of region and population size class by expenditure category and commodity and service group

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000-1.250 million)			Size class C (75,000-385,000)			Size class D (75,000 or less)		
	1981			1981			1981			1981		
	June	Aug.	Oct.	June	Aug.	Oct.	June	Aug.	Oct.	June	Aug.	Oct.
	Northeast											
EXPENDITURE CATEGORY												
All items	139.1	142.1	143.8	146.8	150.5	152.3	152.5	155.3	156.2	146.3	147.7	149.2
Food and beverages	137.5	139.4	139.7	139.2	139.9	139.9	141.1	142.3	142.6	136.1	137.6	137.4
Housing	142.1	146.2	147.8	153.2	160.4	161.4	186.0	170.4	170.1	154.0	155.2	156.6
Apparel and upkeep	116.2	117.6	118.9	118.9	118.3	124.8	123.1	123.5	124.8	122.9	125.7	126.5
Transportation	151.5	154.5	156.3	159.1	161.3	164.0	158.4	160.5	162.0	156.6	158.3	159.7
Medical care	134.8	137.6	140.0	134.0	139.2	143.6	137.8	140.8	146.5	137.2	138.9	142.3
Entertainment	127.9	129.3	131.8	129.6	129.1	129.6	125.9	127.8	129.5	130.2	131.7	133.2
Other goods and services	125.9	127.2	134.6	132.1	132.2	138.0	134.1	135.8	141.5	128.8	129.5	137.5
COMMODITY AND SERVICE GROUP												
Commodities	139.0	141.0	142.1	146.5	148.6	149.6	148.1	149.1	149.8	145.0	146.0	146.4
Commodities less food and beverages	139.9	142.0	143.7	150.0	152.7	154.3	151.4	152.3	153.1	149.3	150.0	150.7
Services	139.4	143.5	146.0	147.2	153.6	156.5	159.7	165.4	166.7	148.3	150.5	153.5
	North Central region											
EXPENDITURE CATEGORY												
All items	150.0	152.3	152.6	146.6	148.1	148.8	142.3	145.4	145.9	143.1	145.3	146.7
Food and beverages	138.1	139.4	139.7	137.5	139.2	139.3	139.6	140.8	140.3	140.7	142.4	143.3
Housing	162.9	165.9	164.4	152.6	154.7	153.6	143.5	148.5	147.5	144.0	147.0	148.3
Apparel and upkeep	110.8	112.9	115.5	118.9	120.2	127.2	115.3	116.9	123.4	118.6	121.6	123.1
Transportation	156.4	158.9	161.2	157.3	158.4	159.5	157.0	159.3	161.2	155.9	157.6	158.6
Medical care	139.1	141.3	142.8	139.9	144.5	145.6	140.4	143.9	145.3	144.0	146.9	147.7
Entertainment	130.6	130.9	132.2	124.4	188.4	123.8	129.8	129.8	131.3	126.9	128.1	128.4
Other goods and services	130.1	131.2	136.0	136.0	136.5	142.4	129.3	131.5	135.1	134.3	133.6	140.4
COMMODITY AND SERVICE GROUP												
Commodities	144.4	145.7	145.7	142.5	142.9	142.9	139.9	141.7	141.4	138.0	139.4	140.7
Commodities less food and beverages	147.4	148.7	148.5	144.6	144.5	144.4	140.0	142.1	141.9	136.8	138.1	139.6
Services	158.3	162.1	162.9	153.2	156.4	158.3	146.2	151.6	153.3	151.1	154.8	156.2
	South											
EXPENDITURE CATEGORY												
All items	146.2	148.2	150.9	148.7	151.6	153.4	145.9	148.5	149.2	144.8	147.2	149.4
Food and beverages	138.2	140.2	141.2	139.4	141.7	141.1	138.7	141.6	141.2	141.9	143.9	144.0
Housing	152.3	154.9	158.6	156.4	160.5	162.5	151.9	155.3	154.7	147.5	150.9	153.5
Apparel and upkeep	121.1	121.9	124.4	119.9	120.6	122.6	115.3	115.1	118.3	109.5	108.6	111.8
Transportation	158.1	158.9	160.6	158.3	160.3	162.3	156.6	158.6	160.2	157.7	159.1	160.6
Medical care	135.0	138.3	141.6	138.8	141.6	145.9	142.1	145.6	148.8	148.1	149.9	156.3
Entertainment	124.9	125.3	127.1	130.7	132.2	133.4	132.1	132.1	134.8	133.5	138.6	138.8
Other goods and services	133.1	135.3	139.2	134.1	134.6	139.5	131.5	132.7	138.5	134.1	134.8	139.5
COMMODITY AND SERVICE GROUP												
Commodities	142.1	143.5	145.0	143.2	144.7	145.7	141.3	143.1	143.6	142.1	143.2	144.1
Commodities less food and beverages	143.8	144.9	146.6	144.8	146.0	147.7	142.4	143.8	144.6	142.2	143.0	144.2
Services	152.1	154.9	159.3	157.0	161.9	164.9	153.1	156.9	157.9	149.0	153.1	157.4
	West											
EXPENDITURE CATEGORY												
All items	147.5	152.4	156.3	149.1	151.2	155.0	143.9	146.4	149.2	146.9	147.7	152.1
Food and beverages	138.3	140.3	140.3	142.6	144.6	144.9	137.5	141.2	141.4	143.2	145.2	145.5
Housing	153.2	160.6	167.1	155.1	156.6	162.6	146.7	148.9	153.5	146.1	145.6	153.9
Apparel and upkeep	120.7	121.2	121.8	123.1	124.5	127.6	113.4	114.6	116.5	133.5	134.4	135.9
Transportation	157.4	159.3	161.8	157.5	161.1	163.5	158.7	160.8	162.1	159.3	161.0	162.5
Medical care	141.0	149.2	150.5	141.2	146.1	148.1	141.5	147.0	149.4	146.2	149.9	150.4
Entertainment	127.7	130.2	133.0	128.9	130.1	132.5	130.8	130.8	131.4	143.7	145.4	144.4
Other goods and services	134.8	136.4	140.1	134.7	137.3	141.4	130.2	131.3	136.1	137.8	141.0	145.5
COMMODITY AND SERVICE GROUP												
Commodities	140.5	143.4	145.1	143.4	145.2	147.0	140.2	142.6	144.4	144.7	144.5	146.2
Commodities less food and beverages	141.4	144.7	147.1	143.8	145.5	147.8	141.3	143.2	145.6	145.3	144.2	146.5
Services	156.8	164.3	171.2	156.8	159.4	166.0	149.2	151.7	156.1	150.1	152.5	160.9

25. Consumer Price Index — U.S. city average, and selected areas

[1967 = 100 unless otherwise specified]

Area[1]	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Oct.	May	June	July	Aug.	Sept.	Oct.	Oct.	May	June	July	Aug.	Sept.	Oct.
U.S. city average[2]	253.9	269.0	271.3	274.4	276.5	279.3	279.9	254.1	269.1	271.4	274.6	276.5	279.1	279.7
Anchorage, Alaska (10/67 = 100)	...	244.6	...	246.1	...	250.5	...	...	240.1	...	241.7	...	245.9	...
Atlanta, Ga.	250.2	...	269.2	...	276.1	...	281.5	252.4	...	272.8	...	278.1	...	283.0
Baltimore, Md.	...	269.3	...	272.5	...	279.9	...	...	268.6	...	273.7	...	281.6	...
Boston, Mass.	...	263.6	...	266.3	...	272.8	...	...	263.6	...	266.5	...	273.6	...
Buffalo, N.Y.	239.6	...	257.2	...	260.3	...	262.5	238.2	...	256.1	...	259.4	...	261.2
Chicago, Ill.-Northwestern Ind.	253.7	264.5	269.1	272.7	275.8	276.9	276.1	252.8	263.9	267.9	271.7	274.6	275.8	276.3
Cincinnati, Ohio-Ky.-Ind.	...	271.7	...	273.3	...	275.2	...	...	273.3	...	276.3	...	277.1	...
Cleveland, Ohio	264.6	...	285.3	...	284.4	...	282.8	264.2	...	283.8	...	283.0	...	282.3
Dallas-Ft. Worth, Tex.	264.9	...	286.0	...	288.2	...	292.5	262.9	...	284.0	...	285.1	...	288.8
Denver-Boulder, Colo.	...	288.2	...	294.2	...	298.9	...	...	293.4	...	290.9	...	304.2	...
Detroit, Mich.	264.3	275.2	280.5	283.1	283.5	284.2	281.5	261.4	271.3	275.9	278.9	279.1	280.2	278.2
Honolulu, Hawaii	234.6	...	252.8	...	256.6	...	259.3	233.5	...	253.8	...	256.6	...	259.1
Houston, Tex.	272.3	...	292.9	...	294.7	...	300.0	269.4	...	289.4	...	291.8	...	295.9
Kansas City, Mo.-Kansas	254.8	...	270.5	...	271.3	...	272.6	253.0	...	269.1	...	270.2	...	271.3
Los Angeles-Long Beach, Anaheim, Calif.	252.6	267.3	267.9	272.2	274.8	279.3	281.3	254.9	270.7	271.7	276.3	278.6	282.9	284.9
Miami, Fla. (11/77 = 100)	...	143.2	...	146.1	...	150.2	...	...	144.8	...	143.7	...	151.0	...
Milwaukee, Wis.	...	278.5	...	285.6	...	286.9	...	...	283.5	...	291.2	...	292.1	...
Minneapolis-St. Paul, Minn.-Wis.	255.5	...	276.1	...	286.6	...	291.6	256.6	...	276.6	...	287.0	...	291.6
New York, N.Y.-Northeastern N.J.	243.1	256.7	258.6	262.5	264.8	268.8	268.0	242.6	255.9	257.9	262.3	264.0	267.8	267.0
Northeast, Pa. (Scranton)	...	259.9	...	266.0	...	271.5	...	...	263.3	...	269.0	...	275.0	...
Philadelphia, Pa.-N.J.	247.9	261.9	265.4	267.8	270.5	274.4	274.7	249.5	262.9	265.6	268.5	271.6	274.5	275.2
Pittsburgh, Pa.	256.3	...	271.3	...	277.7	...	277.7	257.6	...	273.0	...	278.1	...	278.4
Portland, Oreg.-Wash.	...	278.5	...	280.8	...	291.1	...	...	276.1	...	279.2	...	288.8	...
St. Louis, Mo.-Ill.	...	268.0	...	269.4	...	273.4	...	...	268.4	...	269.2	...	273.0	...
San Diego, Calif.	...	297.5	...	305.4	...	313.9	...	...	292.5	...	300.5	...	308.0	...
San Francisco-Oakland, Calif.	251.9	...	274.0	...	287.9	...	297.0	252.6	...	274.3	...	287.2	...	295.6
Seattle-Everett, Wash.	...	274.7	...	282.3	...	288.6	...	...	271.5	...	277.8	...	284.3	...
Washington, D.C.-Md.-Va.	...	264.7	...	267.1	...	271.8	...	...	267.7	...	271.4	...	275.7	...

[1] The areas listed include not only the central city but the entire portion of the Standard Metropolitan Statistical Area, as defined for the 1970 Census of Population, except that the Standard Consolidated Area is used for New York and Chicago.

[2] Average of 85 cities.

26. Producer Price Indexes, by stage of processing

[1967 = 100]

Commodity grouping	Annual average 1980	1980		1981										
		Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July [1]	Aug.	Sept.	Oct.	Nov.
FINISHED GOODS														
Finished goods	247.0	256.2	257.2	260.9	263.3	266.0	268.5	269.6	270.5	r271.8	271.2	271.1	274.0	274.5
Finished consumer goods	248.9	257.9	258.9	262.5	265.0	268.2	270.6	271.5	272.3	r273.5	272.6	272.6	274.7	274.9
Finished consumer foods	238.5	248.9	249.3	251.0	251.3	252.6	251.9	252.8	253.8	r257.6	255.5	255.5	253.7	252.7
Crude	237.2	250.5	254.8	257.9	265.6	279.7	279.3	263.1	258.9	r262.7	256.5	253.0	253.3	259.5
Processed	237.8	246.7	246.7	248.4	247.9	248.1	247.4	249.8	251.3	r255.0	253.4	253.7	251.7	250.0
Nondurable goods less foods	283.9	283.9	286.2	302.7	308.4	316.0	320.4	321.0	322.0	r322.5	321.8	323.5	323.8	325.0
Durable goods	206.2	213.1	213.5	214.9	215.1	214.0	216.6	218.1	218.2	r218.1	218.1	215.6	224.3	224.3
Consumer nondurable goods less food and energy	191.2	196.9	197.6	201.9	203.5	204.8	207.3	207.7	208.4	r209.5	209.9	211.0	212.2	213.3
Capital equipment	239.8	250.2	250.9	254.6	256.7	258.1	260.8	262.5	263.8	r265.4	265.9	265.6	271.4	272.9
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	280.3	289.1	291.9	296.1	298.3	302.0	305.8	306.7	307.2	r308.5	309.9	309.6	309.3	309.0
Materials and components for manufacturing	265.7	273.9	275.7	279.6	280.3	281.6	284.1	285.1	285.8	r287.9	289.6	290.2	290.3	289.6
Materials for food manufacturing	264.4	290.0	279.6	280.7	273.2	267.5	263.1	259.0	262.4	r260.5	261.7	254.7	252.7	249.2
Materials for nondurable manufacturing	259.5	266.7	268.5	274.0	276.5	279.4	284.3	287.0	287.7	r289.2	290.7	291.2	290.8	289.7
Materials for durable manufacturing	301.0	303.8	304.3	306.9	305.4	306.9	310.6	311.2	310.7	314.4	316.1	317.4	317.1	315.1
Components for manufacturing	231.8	238.3	246.3	250.3	253.0	254.2	255.4	256.3	257.3	259.5	261.5	263.4	264.7	266.3
Materials and components for construction	268.3	274.0	276.6	279.2	280.3	282.7	286.0	288.5	289.6	r290.4	290.6	289.9	289.8	289.9
Processed fuels and lubricants	503.0	521.3	539.4	551.9	569.8	588.3	608.5	608.7	605.7	r602.0	606.7	600.1	595.1	594.2
Manufacturing industries	425.7	445.2	457.9	469.5	482.8	503.9	509.0	510.7	505.4	r500.3	507.4	499.3	495.6	495.4
Nonmanufacturing industries	570.9	589.3	611.4	624.7	646.7	681.6	696.2	695.2	694.3	r692.0	594.3	689.3	683.1	681.5
Containers	254.5	259.5	260.6	264.6	268.2	270.9	274.3	276.4	277.2	r278.8	280.3	280.8	281.1	280.7
Supplies	244.5	255.2	255.0	257.8	257.8	258.9	262.4	264.0	264.6	r266.0	266.1	266.1	267.1	267.4
Manufacturing industries	231.9	238.7	239.5	242.5	244.8	246.8	250.6	252.3	253.4	r255.0	256.0	256.7	258.9	259.5
Nonmanufacturing industries	251.1	263.8	263.0	265.7	264.6	265.2	268.7	270.2	270.5	r272.0	271.5	271.1	271.5	271.7
Feeds	229.0	259.2	251.5	252.0	237.5	231.7	239.2	242.9	235.4	232.8	228.9	221.7	216.3	212.0
Other supplies	253.6	261.3	262.4	265.6	268.3	270.6	272.9	273.8	276.3	r278.7	279.2	280.6	282.5	283.9
CRUDE MATERIALS														
Crude materials for further processing	304.6	324.6	323.5	328.0	336.5	334.2	336.3	334.4	335.4	r337.3	333.2	327.7	320.3	314.1
Foodstuffs and feedstuffs	259.2	277.3	271.6	270.7	267.1	262.1	263.5	260.6	264.3	r267.2	261.8	253.4	245.6	238.3
Nonfood materials	401.0	424.9	433.8	450.1	484.9	488.4	482.1	492.4	487.4	r487.2	485.9	486.8	480.5	476.9
Nonfood materials except fuel	346.1	363.9	373.3	391.0	427.9	430.9	432.5	428.3	418.1	r413.1	414.2	410.7	405.5	398.5
Manufacturing industries	357.4	376.1	386.5	405.1	445.5	448.6	450.2	445.5	434.2	r428.7	429.7	425.8	420.0	412.2
Construction	237.6	246.5	247.4	254.8	257.2	259.2	261.5	261.7	262.6	r262.6	265.2	265.7	266.7	266.7
Crude fuel	615.0	664.9	670.2	677.4	697.7	703.6	716.6	738.4	759.2	r781.2	788.6	790.6	779.7	792.6
Manufacturing industries	690.5	755.8	762.9	771.9	798.1	805.8	821.9	850.6	877.2	r902.6	885.4	913.8	899.1	915.8
Nonmanufacturing industries	567.0	605.2	608.9	614.9	630.6	635.0	645.8	662.2	678.5	r698.1	680.3	706.3	688.4	708.4
SPECIAL GROUPINGS														
Finished goods excluding foods	247.8	257.0	258.2	262.4	265.5	268.7	272.1	273.3	274.1	r274.7	274.5	274.4	278.7	279.7
Finished consumer goods excluding foods	250.8	259.5	260.9	265.1	268.5	272.5	276.1	277.0	277.7	r277.9	277.5	277.4	281.3	282.0
Finished consumer goods less energy	218.0	225.5	226.0	233.8	229.6	230.2	231.8	232.8	233.4	r235.0	234.5	234.2	236.8	237.0
Intermediate materials less foods and feeds	282.3	289.3	293.5	298.0	301.0	305.4	309.5	310.7	311.2	r312.7	314.3	314.5	314.5	314.3
Intermediate materials less energy	265.3	273.3	274.9	278.3	279.1	280.5	283.7	284.7	285.5	287.2	288.4	288.7	288.9	288.6
Intermediate foods and feeds	252.6	285.7	270.0	270.9	261.3	255.6	254.9	253.1	253.2	r251.1	250.7	243.7	240.6	236.9
Crude materials less agricultural products	446.4	473.8	482.8	504.0	547.6	551.8	556.0	557.5	551.3	r550.6	549.9	552.4	544.3	540.9
Crude materials less energy	256.1	271.7	267.5	266.0	262.6	259.6	261.1	257.9	259.7	261.8	258.1	250.5	243.6	235.9

[1] Data for July 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

r = revised.

27. Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1980	1980		1981										
			Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July[1]	Aug.	Sept.	Oct.	Nov.
	All commodities	268.8	279.1	280.8	284.8	287.6	290.3	293.4	294.1	294.8	[1]296.2	296.2	285.5	286.0	285.5
	All commodities (1957-59 = 100)	285.2	296.1	297.9	302.2	305.1	308.0	311.3	312.0	312.8	[1]314.3	314.3	313.5	314.1	313.5
	Farm products and processed foods and feeds	244.7	260.5	257.0	257.9	255.1	253.5	253.8	252.9	254.3	[1]256.8	253.9	250.0	246.1	242.7
	Industrial commodities	274.8	283.4	286.6	291.5	295.7	299.6	303.5	304.7	305.1	[1]306.2	307.0	307.2	308.8	309.1
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	249.4	264.9	265.3	264.5	262.4	260.7	253.3	250.6	260.7	[1]263.3	257.8	251.0	243.3	237.4
01-1	Fresh and dried fruits and vegetables	238.6	246.6	245.1	258.7	271.5	292.8	286.1	275.3	263.3	[1]265.6	257.3	251.9	247.9	253.2
01-2	Grains	239.0	270.9	265.2	277.7	267.5	261.8	264.7	257.7	257.1	257.4	242.7	227.0	227.6	226.5
01-3	Livestock	252.7	254.8	251.4	244.3	244.6	239.3	246.5	251.8	263.0	266.5	252.0	257.3	244.4	231.1
01-4	Live poultry	202.1	221.0	218.9	213.1	220.8	213.5	195.4	207.2	210.0	215.3	210.3	196.7	185.7	175.0
01-5	Plant and animal fibers	271.1	287.2	294.1	284.1	268.4	270.1	274.2	258.3	258.6	251.3	232.5	206.5	211.7	198.5
01-6	Fluid milk	271.2	284.7	290.5	288.4	289.5	289.5	287.2	283.6	285.0	[1]284.3	285.0	287.3	294.3	288.2
01-7	Eggs	171.0	194.0	217.5	185.7	184.8	180.4	196.2	165.0	174.6	185.1	180.7	193.2	193.8	209.7
01-8	Hay, hayseeds, and oilseeds	247.1	298.3	310.2	311.8	295.0	280.5	296.3	290.0	285.3	[1]290.0	284.3	267.2	233.4	221.1
01-9	Other farm products	299.0	296.6	296.0	296.1	295.1	295.9	295.9	259.7	242.7	250.2	263.9	268.9	267.8	275.8
02	Processed foods and feeds	241.2	257.2	251.5	253.3	250.2	248.5	247.6	248.2	249.9	[1]252.2	250.7	248.4	246.6	244.7
02-1	Cereal and bakery products	236.0	245.3	248.7	251.5	252.1	252.2	253.9	256.3	256.4	[1]258.3	256.6	258.0	256.6	257.5
02-2	Meats, poultry, and fish	243.1	250.9	248.1	248.1	243.6	242.0	239.1	245.2	248.6	[1]257.1	254.2	253.3	246.6	240.0
02-3	Dairy products	230.6	240.2	242.3	244.7	245.0	245.1	245.4	244.6	245.2	[1]245.1	245.6	246.0	247.4	246.9
02-4	Processed fruits and vegetables	228.7	234.7	236.6	238.4	243.7	255.2	258.0	259.4	262.5	[1]265.9	267.6	270.3	271.3	270.1
02-5	Sugar and confectionery	322.5	409.0	339.8	344.6	323.7	302.0	284.5	262.8	274.8	[1]266.0	269.1	246.8	250.0	249.0
02-6	Beverages and beverage materials	233.0	240.6	240.5	243.0	244.8	245.4	246.0	247.6	248.1	[1]240.0	246.3	245.6	248.3	250.8
02-7	Fats and oils	226.8	238.0	234.1	230.2	228.2	229.8	232.4	228.2	227.3	[1]234.8	228.4	224.6	223.6	221.7
02-8	Miscellaneous processed foods	227.2	235.0	240.5	244.2	248.0	249.2	249.9	251.1	251.5	252.2	252.0	253.0	249.8	250.1
02-9	Manufactured animal feeds	226.8	254.5	247.1	248.9	235.9	231.1	237.7	241.0	234.3	232.2	228.8	223.2	218.4	214.6
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	183.5	189.6	190.4	193.1	193.9	195.2	197.6	199.2	200.1	[1]201.3	201.4	202.5	203.0	203.2
03-1	Synthetic fibers (12/75 = 100)	134.7	140.7	140.8	146.5	147.1	146.9	151.5	156.4	157.9	[1]159.7	152.0	162.3	163.5	162.5
03-2	Processed yarns and threads (12/75 = 100)	122.5	125.8	128.2	129.8	130.3	134.6	135.0	138.5	139.3	[1]140.3	139.3	141.8	142.0	140.3
03-3	Gray fabrics (12/75 = 100)	138.1	145.0	144.0	143.6	144.0	144.7	146.6	145.8	147.4	[1]148.2	148.2	148.1	147.8	147.9
03-4	Finished fabrics (12/75 = 100)	115.7	119.1	120.1	122.2	122.9	123.2	124.9	125.7	125.6	[1]126.0	125.9	126.2	126.1	126.5
03-81	Apparel	172.4	176.8	177.5	179.9	180.7	181.4	184.3	185.2	186.2	[1]187.2	186.5	187.2	187.9	188.7
03-82	Textile housefurnishings	206.9	213.8	214.3	219.8	221.3	221.3	222.1	224.0	223.9	[1]227.1	231.6	236.6	237.4	237.9
04	Hides, skins, leather, and related products	248.9	255.4	256.9	258.2	257.7	261.2	263.5	263.7	261.6	[1]261.1	261.7	263.0	262.7	261.7
04-1	Hides and skins	370.9	409.1	392.8	377.5	367.4	([2])	([2])	([2])	([2])	([2])	([2])	([2])	([2])	([2])
04-2	Leather	310.6	317.3	332.4	332.6	310.0	322.5	337.8	330.0	321.0	[1]319.0	312.2	311.7	312.1	311.3
04-3	Footwear	233.1	237.5	236.9	238.4	240.7	240.4	241.1	241.4	241.5	[1]242.4	242.3	242.0	241.6	241.1
04-4	Other leather and related products	218.3	222.6	225.3	230.1	236.9	238.4	238.5	244.2	244.3	[1]242.9	247.8	250.1	250.1	250.5
05	Fuels and related products and power	574.0	600.2	615.7	634.6	667.5	686.5	707.2	709.0	707.6	[1]704.9	704.1	703.2	697.2	697.5
05-1	Coal	467.3	475.4	475.3	477.8	480.8	481.1	486.1	487.3	491.7	[1]505.5	507.3	510.6	511.1	513.1
05-2	Coke	430.6	430.6	430.1	430.1	430.1	430.1	430.1	467.9	469.7	[1]469.7	470.3	470.3	470.3	470.3
05-3	Gas fuels[3]	760.7	825.5	844.3	857.1	881.6	888.9	907.8	933.9	954.6	[1]969.4	952.4	979.7	964.7	981.4
05-4	Electric power	321.6	333.8	337.6	341.4	346.2	351.2	355.5	360.4	366.6	[1]374.6	383.6	382.0	375.9	377.6
05-61	Crude petroleum[4]	556.4	600.6	632.8	704.4	842.7	842.8	842.5	839.9	815.9	[1]798.9	797.0	797.0	788.4	786.0
05-7	Petroleum products, refined[5]	674.7	697.6	717.0	736.9	789.6	825.5	840.9	835.3	828.1	[1]816.3	813.4	805.7	802.0	797.9
06	Chemicals and allied products	260.3	266.7	268.1	274.3	277.6	280.4	286.0	288.6	290.5	[1]291.3	293.2	293.3	292.8	292.5
06-1	Industrial chemicals[6]	324.0	332.7	334.6	344.5	352.1	354.5	362.4	368.5	369.7	370.4	371.9	372.0	369.4	365.6
06-21	Prepared paint	235.3	241.4	241.4	242.9	246.6	246.6	248.1	250.0	250.0	[1]250.7	251.0	251.0	251.0	254.8
06-22	Paint materials	273.9	279.8	281.0	284.9	287.0	290.5	295.4	300.3	300.8	[1]304.5	308.4	307.8	308.0	307.4
06-3	Drugs and pharmaceuticals	174.5	181.1	182.6	184.7	187.3	189.3	191.0	192.4	193.2	[1]195.5	195.6	197.1	198.1	198.1
06-4	Fats and oils, inedible	298.0	308.2	317.1	310.7	289.7	285.7	312.7	312.1	303.1	290.9	305.6	285.6	277.7	282.5
06-5	Agricultural chemicals and chemical products	257.1	261.1	263.3	267.6	271.6	275.8	277.8	279.1	288.9	288.9	293.8	292.3	292.3	295.4
06-6	Plastic resins and materials	279.2	276.2	274.1	214.7	276.1	279.4	285.1	287.9	290.0	285.9	285.6	298.5	297.6	290.9
06-7	Other chemicals and allied products	224.5	232.4	234.1	244.4	245.1	248.3	256.3	254.8	256.3	254.8	256.7	257.0	258.0	260.9
07	Rubber and plastic products	217.4	223.4	223.3	224.6	226.4	228.4	230.0	231.8	233.4	[1]232.1	234.4	236.0	237.7	238.7
07-1	Rubber and rubber products	237.5	245.0	244.9	246.2	248.5	252.1	253.0	254.4	256.8	[1]254.7	258.4	261.3	264.3	266.2
07-11	Crude rubber	264.3	271.0	268.5	279.1	281.9	281.2	279.8	283.2	285.2	[1]284.2	282.0	280.6	280.5	278.9
07-12	Tires and tubes	236.9	245.2	245.2	240.9	243.5	248.6	250.7	251.2	251.2	[1]246.8	251.0	256.5	257.7	257.5
07-13	Miscellaneous rubber products	226.6	233.3	234.0	238.6	240.4	243.5	243.8	245.7	250.8	[1]251.4	256.4	257.1	263.4	269.5
07-2	Plastic products (6/78 = 100)	121.1	124.0	123.9	125.0	125.5	126.0	128.2	128.6	129.1	[1]128.7	129.3	129.6	130.0	130.1
08	Lumber and wood products	288.9	293.4	299.4	296.5	294.7	294.4	289.4	288.4	288.1	[1]286.5	284.3	280.1	284.4	283.0
08-1	Lumber	325.8	324.9	333.0	331.3	326.9	326.2	333.6	336.3	335.8	[1]332.4	329.2	319.7	312.0	308.8
08-2	Millwork	260.4	270.0	273.3	273.6	273.8	275.7	276.5	274.8	272.2	273.6	272.4	271.3	271.2	272.0
08-3	Plywood	246.5	256.6	263.5	251.1	251.2	248.8	256.0	248.3	251.5	[1]247.8	245.9	241.2	234.4	233.0
08-4	Other wood products	230.1	236.6	236.2	238.5	238.1	236.9	238.3	238.2	238.8	[1]240.7	236.9	240.6	240.0	239.7

See footnotes at end of table.

27. Continued—Producer Price indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1980	1980		1981										
			Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July [1]	Aug.	Sept	Oct.	Nov.
	INDUSTRIAL COMMODITIES—Continued														
09	Pulp, paper, and allied products	249.2	255.0	256.7	264.4	267.2	r269.0	271.4	272.1	272.9	r274.9	275.7	276.9	279.1	280.2
09-1	Pulp, paper, and products, excluding building paper and board	250.6	256.2	257.9	260.9	264.5	266.8	268.6	269.9	271.2	r272.3	274.3	275.5	276.5	276.3
09-11	Woodpulp	380.3	390.2	390.2	390.2	390.2	390.2	394.1	394.2	394.2	r394.2	396.6	396.6	404.7	417.0
09-12	Wastepaper	208.7	192.3	191.5	191.5	186.1	185.1	184.2	182.7	182.9	182.1	182.1	178.5	165.1	144.5
09-13	Paper	256.8	264.1	269.4	271.7	272.9	273.8	275.2	275.9	278.5	r279.7	283.8	287.1	288.6	287.1
09-14	Paperboard	234.6	241.7	239.6	250.2	252.8	255.1	255.7	258.8	259.2	r259.4	261.2	262.5	262.6	261.6
09-15	Converted paper and paperboard products	238.5	243.5	244.7	246.9	252.1	255.3	257.3	258.8	259.9	r261.2	262.5	263.0	263.9	263.9
09-2	Building paper and board	206.2	216.5	219.7	219.7	225.7	227.9	232.5	237.3	237.4	r235.5	233.8	233.7	232.5	231.5
10	Metals and metal products	286.4	291.1	290.6	294.0	294.0	296.4	298.8	299.1	298.4	r302.0	304.3	305.1	305.5	303.9
10-1	Iron and steel	305.2	312.7	316.4	323.0	323.2	328.2	331.0	330.4	330.1	r338.8	339.7	339.7	341.5	339.8
10-13	Steel mill products	302.7	309.4	313.7	322.6	322.9	328.7	331.8	331.8	332.2	344.9	344.9	345.3	348.7	348.6
10-2	Nonferrous metals	305.0	302.1	293.4	292.1	287.4	286.5	288.4	287.7	284.5	r282.8	287.7	290.0	286.8	281.4
10-3	Metal containers	298.6	303.3	303.3	311.4	313.8	314.1	314.1	314.1	314.1	r315.2	319.4	319.6	319.0	318.2
10-4	Hardware	240.5	249.6	251.7	254.5	258.0	258.6	258.5	259.4	259.7	r263.8	263.2	265.7	267.5	268.9
10-5	Plumbing fixtures and brass fittings	246.7	252.3	254.9	256.7	259.2	259.5	265.3	266.2	268.9	r270.9	271.0	271.4	272.8	273.0
10-6	Heating equipment	206.5	212.0	214.0	216.6	217.6	219.5	219.8	222.3	223.5	r226.4	227.2	227.9	228.4	227.6
10-7	Fabricated structural metal products	270.5	278.0	279.3	283.1	285.4	289.4	293.1	294.0	295.0	r297.9	300.0	300.5	302.2	302.2
10-8	Miscellaneous metal products	250.0	256.9	257.6	260.5	263.1	264.7	267.2	269.7	269.4	r272.0	273.8	274.5	276.2	277.5
11	Machinery and equipment	239.[illegible]	248.3	249.8	253.3	255.3	257.5	259.6	260.7	262.1	r264.8	266.0	267.8	268.8	270.0
11-1	Agricultural machinery and equipment	259.2	271.6	272.9	276.4	278.4	279.8	282.5	285.7	286.8	r288.1	289.3	292.0	292.1	298.7
11-2	Construction machinery and equipment	289.4	300.1	301.4	305.9	310.0	312.8	317.0	318.4	320.1	r323.8	324.9	326.6	329.0	329.6
11-3	Metalworking machinery and equipment	274.4	283.9	285.7	289.7	291.6	294.9	298.7	299.9	301.3	r302.9	303.6	305.3	306.5	307.5
11-4	General purpose machinery and equipment	264.6	274.3	275.6	278.6	280.2	282.3	284.4	285.9	287.0	r290.6	291.7	293.5	294.4	295.6
11-6	Special industry machinery and equipment	275.8	287.7	290.9	295.6	299.2	301.0	303.2	307.2	308.8	311.0	310.5	312.7	314.7	315.2
11-7	Electrical machinery and equipment	201.7	207.5	208.9	211.9	213.7	216.0	217.4	217.5	219.2	r221.1	222.8	224.1	225.0	226.0
11-9	Miscellaneous machinery	229.9	238.5	239.6	243.3	245.2	247.0	248.5	248.8	250.1	r254.0	255.3	257.8	258.3	259.1
12	Furniture and household durables	187.7	191.5	193.1	194.0	195.2	195.8	196.4	197.4	197.3	r199.5	199.5	200.7	201.4	201.6
12-1	Household furniture	204.8	210.9	212.1	212.9	213.8	214.5	216.5	216.4	218.6	r220.0	221.4	223.3	224.1	225.4
12-2	Commercial furniture	236.0	242.2	242.4	246.7	251.6	253.4	254.5	257.7	257.9	r258.7	259.2	261.5	262.5	263.2
12-3	Floor coverings	163.0	165.5	170.7	172.3	171.9	174.1	175.3	179.5	180.7	182.8	182.3	181.5	181.5	180.8
12-4	Household appliances	174.2	178.5	179.5	182.2	183.5	184.2	185.1	185.5	186.1	r188.8	187.7	188.3	189.5	189.7
12-5	Home electronic equipment	91.4	91.2	91.0	91.0	91.3	91.4	90.9	90.8	86.7	r87.4	87.5	87.8	88.3	88.0
12-6	Other household durable goods	278.6	281.2	285.7	278.9	280.8	278.1	275.3	276.7	276.4	r282.1	282.0	285.4	285.3	284.6
13	Nonmetallic mineral products	283.0	288.7	291.2	296.6	297.9	300.9	310.8	312.0	313.6	r314.3	314.0	313.1	313.1	313.5
13-11	Flat glass	196.5	203.1	203.0	203.9	204.3	204.8	210.2	210.2	210.3	r218.3	218.8	218.8	218.5	218.5
13-2	Concrete ingredients	274.0	279.1	279.7	290.0	291.4	292.6	297.4	297.5	297.5	r297.7	298.4	298.4	298.3	298.3
13-3	Concrete products	273.9	277.7	277.6	286.1	286.6	286.9	289.9	291.2	293.5	r293.4	293.0	292.9	293.3	293.2
13-4	Structural clay products excluding refractories	231.5	233.5	233.6	239.5	239.8	244.6	246.0	250.1	250.7	r250.9	250.4	254.8	255.6	255.9
13-5	Refractories	264.6	273.2	273.2	282.6	293.5	296.1	296.4	304.0	307.1	r307.1	308.0	308.0	308.8	309.8
13-6	Asphalt roofing	396.8	397.1	394.6	394.8	389.5	390.5	415.9	407.4	428.5	r421.9	419.2	400.0	401.3	406.9
13-7	Gypsum products	256.3	253.3	252.7	259.6	257.3	257.6	256.8	261.1	260.7	259.7	255.3	252.9	252.4	251.3
13-8	Glass containers	292.7	306.2	311.4	311.4	311.4	311.4	326.7	335.3	335.3	r335.5	334.8	334.8	334.8	334.8
13-9	Other nonmetallic minerals	394.6	403.3	418.9	418.7	424.7	441.7	479.1	477.6	476.8	r476.2	475.2	474.2	473.2	473.5
14	Transportation equipment (12/68 = 100)	207.0	217.8	224.3	227.4	229.1	228.1	231.9	233.6	234.3	r235.0	235.8	231.7	244.4	246.2
14-1	Motor vehicles and equipment	208.8	218.6	226.2	228.9	230.9	229.5	233.9	236.0	236.7	r237.4	238.1	232.6	247.5	248.6
14-4	Railroad equipment	313.1	323.6	323.9	332.5	332.5	333.9	335.7	331.2	331.4	r338.1	345.0	345.0	345.0	347.5
15	Miscellaneous products	258.8	263.6	265.3	264.3	264.9	264.0	266.0	266.9	266.3	r263.2	262.6	266.7	268.0	267.2
15-1	Toys, sporting goods, small arms, ammunition	198.6	202.8	205.7	208.4	210.5	211.1	211.3	211.4	211.2	r213.2	214.0	215.1	213.7	213.4
15-2	Tobacco products	245.7	254.4	254.8	254.8	256.1	256.3	268.7	268.7	268.7	r268.8	268.6	274.2	278.0	278.0
15-3	Notions	217.2	224.1	225.0	227.2	247.3	247.3	248.4	267.8	268.0	267.5	267.7	267.8	267.3	269.7
15-4	Photographic equipment and supplies	202.9	206.7	206.6	207.4	209.6	211.2	212.4	212.5	212.5	r211.4	207.4	209.0	209.1	209.1
15-5	Mobile homes (12/74 = 100)	150.2	152.7	153.0	153.0	153.1	155.0	(2)	(2)	(2)	r158.1	157.7	158.1	158.6	158.8
15-9	Other miscellaneous products	363.4	367.0	370.5	363.3	358.1	351.3	349.0	349.4	346.9	r333.1	333.9	343.4	346.7	343.4

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[1] Data for July 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

[3] Prices for natural gas are lagged 1 month.

[4] Includes only domestic production.

[5] Most prices for refined petroleum products are lagged 1 month.

[6] Some prices for industrial chemicals are lagged 1 month.

r = revised

28. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1980	1980		1981										
		Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July[1]	Aug.	Sept.	Oct.	Nov.
All commodities — less farm products	269.6	279.4	281.2	285.4	288.8	291.9	295.0	296.1	296.7	r298.0	298.5	298.3	299.4	290.3
All foods	244.7	259.7	254.3	255.8	253.7	253.4	251.4	250.3	252.2	r255.2	253.7	251.7	249.4	247.8
Processed foods	246.6	261.9	255.5	257.0	253.9	252.3	250.3	250.5	253.1	r256.0	254.9	252.8	250.6	248.2
Industrial commodities less fuels	243.5	250.3	252.3	255.4	257.2	258.6	261.8	262.9	263.5	r265.0	266.0	266.3	268.6	268.9
Selected textile mill products (Dec. 1975 = 100)	124.3	128.1	129.3	131.8	132.5	132.2	134.5	135.7	135.9	r136.8	137.2	138.2	138.5	138.6
Hosiery	123.2	126.7	126.4	129.5	130.3	130.5	134.2	134.6	135.7	r135.8	135.3	135.5	136.5	136.5
Underwear and nightwear	185.4	190.3	190.6	199.2	200.9	202.0	202.1	202.3	203.5	r204.7	205.0	205.0	205.0	206.0
Chemicals and allied products, including synthetic rubber and manmade fibers and yarns	250.7	257.0	258.2	264.8	268.3	271.0	276.1	279.0	281.2	r282.3	283.9	284.4	284.2	283.8
Pharmaceutical preparations	167.1	173.7	174.6	177.1	179.7	182.1	184.0	185.7	186.6	r189.0	189.1	190.8	192.7	192.4
Lumber and wood products, excluding millwork and other wood products	304.0	306.5	314.2	309.2	306.0	304.8	312.3	311.5	312.2	r308.7	305.9	297.9	290.3	287.7
Special metals and metal products	258.5	265.7	268.6	271.8	272.7	273.5	276.8	277.9	277.9	r280.2	281.8	280.1	286.6	286.4
Fabricated metal products	258.2	265.2	266.3	269.9	272.5	274.7	277.0	278.5	279.0	r281.7	283.4	284.2	285.6	286.2
Copper and copper products	222.0	215.7	210.8	207.4	205.0	204.8	207.7	206.6	203.7	r202.5	206.3	205.4	203.8	199.3
Machinery and motive products	230.4	240.2	244.1	247.4	249.4	250.2	253.1	254.4	255.6	257.4	258.4	257.6	264.0	265.5
Machinery and equipment, except electrical	263.0	275.1	276.7	277.3	279.7	281.9	284.3	285.9	287.3	r290.4	291.3	293.4	294.4	295.8
Agricultural machinery, including tractors	267.3	280.9	281.4	285.0	287.3	288.3	289.6	293.7	294.8	r295.6	296.9	300.5	300.4	309.1
Metalworking machinery	298.4	311.2	314.1	318.9	320.5	323.5	325.9	327.1	328.3	r330.1	330.8	333.7	335.6	338.1
Numerically controlled machine tools (Dec. 1971 = 100)	225.6	232.1	230.6	234.6	235.0	235.7	235.7	237.3	241.4	r241.7	242.1	242.1	242.1	242.5
Total tractors	287.3	290.9	301.2	305.8	311.1	311.8	316.8	322.0	322.5	r325.5	327.3	330.5	332.9	340.4
Agricultural machinery and equipment less parts	261.2	273.7	274.3	278.0	280.2	281.5	283.2	286.7	287.9	r288.6	290.0	293.0	293.1	300.6
Farm and garden tractors less parts	268.8	282.4	282.4	284.4	287.2	287.6	289.3	297.7	298.0	r298.0	300.6	305.0	305.0	316.5
Agricultural machinery excluding tractors less parts	266.5	279.9	280.9	285.7	287.7	289.1	290.2	290.8	292.5	r293.9	294.1	297.1	297.0	303.3
Industrial valves	287.8	296.0	297.8	300.7	305.5	310.1	314.0	314.3	315.3	r317.5	316.4	319.3	319.0	320.0
Industrial fittings	291.8	298.6	298.6	298.6	296.0	298.9	302.7	303.0	303.0	r303.0	303.0	304.3	304.1	304.1
Abrasive grinding wheels	([2])	273.0	273.8	([2])	([2])	([2])	([2])	([2])	([2])	([2])	([2])	([2])	([2])	([2])
Construction materials	266.4	271.9	274.1	276.7	277.2	279.0	283.9	284.2	285.0	r285.7	285.6	284.4	284.5	284.1

[1] Data for July 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

r = revised.

29. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1980	1980		1981										
		Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July[1]	Aug.	Sept.	Oct.	Nov.
Total durable goods	251.5	258.6	261.0	262.7	263.8	264.9	267.8	268.6	269.1	r270.8	271.8	271.7	274.9	275.2
Total nondurable goods	282.4	295.2	296.3	302.6	306.8	310.9	314.2	314.8	315.7	r316.8	315.9	314.6	312.7	311.5
Total manufactures	261.5	270.5	272.0	277.3	279.3	282.3	285.3	286.2	286.9	288.0	288.4	288.1	289.7	289.6
Durable	250.8	257.9	260.4	262.3	263.4	264.4	267.2	268.2	268.9	270.6	271.6	271.6	274.9	275.5
Nondurable	273.0	284.0	284.3	293.5	296.4	301.7	304.9	305.7	306.4	r306.9	306.6	305.9	305.4	304.6
Total raw or slightly processed goods	305.7	322.9	326.2	322.9	330.3	331.2	334.6	334.2	335.4	r337.9	335.6	332.7	326.2	323.2
Durable	278.2	285.6	284.0	275.9	275.5	281.7	286.0	280.4	272.4	r271.2	276.6	271.1	264.3	253.8
Nondurable	306.7	324.6	328.2	325.3	333.3	333.8	337.1	337.1	338.9	r341.8	338.9	336.2	329.7	327.3

[1] Data for July 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

30. Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1980	1980		1981										
			Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July[1]	Aug.	Sept.	Oct.	Nov.
	MINING														
1011	Iron ores (12/75 = 100)	152.9	155.8	155.8	155.8	168.1	168.1	168.1	168.1	168.1	168.1	168.1	168.1	168.1	168.1
1092	Mercury ores (12/75 = 100)	331.2	343.7	325.0	297.9	324.5	335.4	354.1	347.9	352.0	358.3	365.4	364.5	354.1	354.1
1211	Bituminous coal and lignite	466.7	474.2	473.9	476.1	478.1	478.5	483.5	484.5	488.4	r502.1	503.8	506.3	506.6	508.2
1311	Crude petroleum and natural gas	643.8	704.6	731.7	786.5	897.9	901.7	908.6	919.7	713.7	r911.5	901.4	914.6	901.0	907.4
1442	Construction sand and gravel	252.7	263.2	264.3	270.1	272.3	275.2	278.0	278.4	278.4	r278.4	278.3	279.4	279.6	279.6
1455	Kaolin and ball clay (6/76 = 100)	136.0	132.1	133.7	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	143.4	143.4
	MANUFACTURING														
2011	Meatpacking plants	244.0	251.4	249.0	244.7	237.2	236.1	237.8	243.6	245.9	252.6	250.7	252.9	244.3	236.9
2013	Sausages and other prepared meats	220.1	249.5	247.4	235.3	232.9	230.4	227.5	230.4	238.1	r246.0	252.7	253.7	252.0	248.6
2016	Poultry dressing plants	191.9	205.9	201.8	201.9	208.3	203.9	186.7	196.2	198.3	203.6	201.2	188.8	175.5	172.8
2021	Creamery butter	258.5	273.3	274.8	273.6	273.5	273.6	273.4	273.4	273.5	273.8	273.7	275.0	279.2	279.5

See footnotes at end of table.

30. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1980	1980		1981										
			Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July [1]	Aug.	Sept.	Oct.	Nov.
	MANUFACTURING—Continued														
2022	Cheese, natural and processed (12/72 = 100)	204.4	214.9	216.1	215.9	215.6	215.7	216.2	216.2	216.1	[1]213.8	216.0	217.0	215.6	215.9
2024	Ice cream and frozen desserts (12/72 = 100)	193.3	199.8	207.5	210.1	210.6	210.6	211.4	212.4	212.4	212.7	212.7	212.7	212.5	212.5
2033	Canned fruits and vegetables	221.4	231.1	232.0	233.3	237.4	241.5	244.0	245.9	248.9	[1]251.6	253.8	255.6	256.1	255.6
2034	Dehydrated food products (12/73 = 100)	160.2	168.6	170.4	174.1	171.3	172.9	174.2	175.3	175.0	180.5	178.7	183.4	182.3	181.6
2041	Flour mills (12/71 = 100)	189.1	205.1	199.5	203.8	198.4	195.1	201.5	199.4	199.3	196.5	191.0	194.8	190.6	191.5
2044	Rice milling	243.4	265.8	287.2	289.6	289.6	298.0	300.9	300.3	300.3	297.4	284.3	268.2	247.3	235.4
2048	Prepared foods, n.e.c. (12/75 = 100)	124.2	133.3	133.9	132.6	129.3	126.6	128.5	129.8	127.5	125.9	124.9	120.0	117.5	116.4
2061	Raw cane sugar	414.1	563.8	402.9	418.0	367.1	318.8	275.7	224.8	263.3	272.2	254.6	212.3	219.9	224.3
2063	Beet sugar	358.0	512.2	423.3	414.5	398.1	370.7	350.5	334.4	339.7	[1]274.1	299.3	271.0	272.2	262.1
2067	Chewing gum	290.7	322.9	322.9	323.0	323.0	323.1	323.1	303.1	303.1	[1]303.1	303.2	303.2	303.2	303.2
2074	Cottonseed oil mills	192.9	231.8	228.0	221.2	193.7	204.4	218.4	216.6	212.3	212.0	206.0	182.3	172.0	167.2
2075	Soybean oil mills	244.3	290.5	270.5	272.0	252.5	253.2	259.1	258.1	248.4	[1]253.7	245.6	234.6	230.1	221.1
2077	Animal and marine fats and oils	290.2	317.2	311.8	310.8	287.2	284.2	301.7	304.3	291.3	288.8	294.1	281.4	274.1	272.3
2083	Malt	249.9	267.4	267.4	286.1	286.1	286.1	286.1	286.1	286.1	286.1	286.1	275.4	275.4	275.4
2085	Distilled liquor, except brandy (12/75 = 100)	123.0	128.5	129.2	129.2	133.9	133.9	133.9	134.3	134.6	134.6	135.5	135.5	135.5	137.9
2091	Canned and cured seafoods (12/73 = 100)	174.0	183.1	183.4	187.3	187.1	187.6	187.7	187.3	187.5	187.4	188.5	188.8	188.2	188.3
2092	Fresh or frozen packaged fish	366.9	353.3	353.9	374.9	366.7	385.2	393.5	378.2	375.5	[1]367.6	348.6	355.0	358.4	362.3
2095	Roasted coffee (12/72 = 100)	269.3	252.5	248.5	238.2	238.3	238.3	238.5	238.6	238.6	[1]236.4	236.0	235.6	238.6	239.4
2098	Macaroni and spaghetti	233.8	243.6	243.6	243.6	243.6	243.6	243.6	246.6	246.6	259.5	259.5	259.5	259.5	259.5
2111	Cigarettes	254.6	263.5	263.6	263.6	264.1	264.2	278.3	278.3	278.3	278.3	278.3	284.2	288.4	283.4
2121	Cigars	158.6	164.0	165.1	165.1	165.3	167.0	168.5	168.5	168.5	[1]169.7	166.8	171.6	171.6	171.6
2131	Chewing and smoking tobacco	279.8	295.0	298.8	298.7	320.7	320.7	320.8	320.8	320.8	[1]321.0	321.1	325.2	327.6	327.6
2211	Weaving mills, cotton (12/72 = 100)	215.8	224.2	225.0	227.9	230.9	232.3	235.3	233.5	234.3	[1]234.7	236.9	235.5	236.1	236.3
2221	Weaving mills, synthetic (12/77 = 100)	124.8	133.0	132.5	131.9	132.3	133.3	134.9	135.7	137.1	[1]138.0	137.5	138.4	139.1	139.2
2251	Women's hosiery, except socks (12/75 = 100)	106.3	109.0	108.6	109.1	109.2	108.9	114.1	114.2	115.6	[1]115.5	115.0	115.1	115.2	115.2
2254	Knit underwear mills	190.1	194.7	195.0	205.6	208.7	209.7	209.8	210.0	210.0	[1]210.7	210.7	210.8	210.8	212.7
2257	Circular knit fabric mills (6/76 = 100)	104.6	107.1	107.5	109.3	109.6	109.1	110.8	110.5	110.4	[1]111.0	110.5	111.0	112.3	112.1
2261	Finishing plants, cotton (6/76 = 100)	135.1	139.3	140.2	142.4	144.5	144.6	146.9	147.0	146.2	[1]146.3	146.1	145.3	144.9	143.4
2262	Finishing plants, synthetics, silk (6/76 = 100)	113.6	117.9	120.5	121.7	123.1	124.3	125.2	126.6	126.6	[1]127.1	127.7	129.0	129.0	129.1
2272	Tufted carpets and rugs	138.1	140.0	145.7	148.1	147.8	150.2	151.5	154.5	155.6	[1]158.3	158.7	157.9	157.9	156.4
2281	Yarn mills, except wool (12/71 = 100)	203.5	209.9	215.1	216.9	218.1	220.7	220.9	224.1	225.8	225.1	225.3	223.9	222.3	220.1
2282	Throwing and winding mills (6/76 = 100)	115.5	118.4	120.1	123.2	123.2	131.3	131.5	139.1	139.3	[1]142.7	139.5	146.7	148.0	145.5
2284	Thread mills (6/76 = 100)	139.1	143.9	143.9	144.1	144.3	148.4	150.8	150.9	151.1	151.1	151.1	154.8	157.0	156.9
2298	Cordage and twine (12/77 = 100)	123.6	129.2	129.3	129.3	129.3	130.9	132.7	134.3	134.3	134.3	134.3	139.3	139.3	139.3
2311	Men's and boys' suits and coats	212.6	216.3	216.1	218.2	219.7	220.1	220.3	220.4	224.6	[1]225.9	224.1	226.1	227.0	227.1
2321	Men's and boys' shirts and nightwear	204.4	208.6	209.5	206.3	207.3	207.1	207.6	207.1	207.5	[1]210.5	208.7	209.6	210.2	210.4
2322	Men's and boys' underwear	208.0	212.8	212.9	224.9	229.1	231.0	231.0	231.0	230.7	[1]230.8	230.7	230.7	230.8	232.9
2323	Men's and boys' neckwear (12/75 = 100)	112.6	112.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	113.9	113.9	113.9	113.9	113.9
2327	Men's and boys' separate trousers	175.3	180.2	180.3	185.3	185.3	185.3	186.0	186.1	186.1	[1]186.4	186.4	186.4	186.6	186.6
2328	Men's and boys' work clothing	240.5	244.3	244.4	242.2	242.2	242.3	247.0	248.2	248.3	[1]250.8	251.3	251.4	252.4	252.5
2331	Women's and misses' blouses and waists (6/78 = 100)	110.3	114.0	115.4	116.3	116.3	116.4	118.3	118.4	118.5	[1]121.0	119.8	120.1	123.6	123.8
2335	Women's and misses' dresses (12/77 = 100)	114.7	116.3	116.3	116.5	116.9	118.5	118.4	122.3	122.5	[1]123.0	121.5	122.5	122.5	123.6
2341	Women's and children's underwear (12/72 = 100)	154.4	157.1	158.1	165.5	167.5	168.8	169.0	169.2	170.5	[1]170.6	171.2	171.2	171.2	172.2
2342	Brassieres and allied garments (12/75 = 100)	126.5	129.1	129.1	131.7	132.8	134.9	135.0	135.0	136.9	[1]138.8	139.2	139.2	139.2	139.3
2361	Children's dresses and blouses (12/77 = 100)	109.9	115.1	117.4	118.1	118.9	119.2	120.7	120.5	120.5	[1]121.6	120.5	120.5	120.9	121.3
2381	Fabric dress and work gloves	268.6	272.1	272.1	284.9	289.1	289.1	289.1	292.1	292.1	289.2	289.2	289.2	289.2	289.2
2394	Canvas and related products (12/77 = 100)	123.8	125.1	126.1	126.8	126.8	127.8	129.3	130.0	130.1	[1]130.1	133.7	135.2	138.1	138.1
2396	Automotive and apparel trimmings (12/77 = 100)	122.4	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
2421	Sawmills and planing mills (12/71 = 100)	227.7	226.8	233.5	232.3	229.6	228.6	233.3	234.8	234.8	[1]233.5	231.0	224.9	219.7	217.7
2436	Softwood veneer and plywood (12/75 = 100)	144.6	152.3	158.2	149.8	149.3	147.2	152.6	145.7	148.1	[1]143.8	139.9	135.7	129.4	128.6
2439	Structural wood members, n.e.c. (12/75 = 100)	155.6	157.0	157.1	157.1	157.0	157.1	158.3	158.2	158.2	[1]157.6	157.1	156.2	154.6	154.7
2448	Wood pallets and skids (12/75 = 100)	160.1	154.7	154.1	153.8	152.8	152.7	153.1	153.1	153.0	[1]153.1	152.8	152.7	152.0	150.7
2451	Mobile homes (12/74 = 100)	150.3	152.7	153.1	153.1	153.2	155.0	155.8	155.9	156.1	[1]158.1	157.7	158.1	159.1	159.0
2492	Particleboard (12/75 = 100)	161.5	163.6	165.9	163.9	170.3	172.3	180.9	184.5	182.3	[1]179.6	172.3	169.3	166.8	165.7
2511	Wood household furniture (12/71 = 100)	183.8	189.1	190.0	210.1	192.1	193.3	195.4	196.2	197.5	[1]198.6	199.1	200.8	201.6	200.9
2512	Upholstered household furniture (12/71 = 100)	163.6	168.6	170.5	169.9	170.1	170.1	171.8	169.7	173.9	[1]175.1	176.4	177.7	178.3	182.3
2515	Mattresses and bedsprings	179.1	186.5	186.5	186.3	188.3	189.5	190.5	190.4	190.5	[1]191.3	198.7	199.4	199.4	201.8
2521	Wood office furniture	235.2	239.7	240.9	244.1	250.4	253.5	254.5	255.4	254.6	[1]254.7	255.7	258.1	258.1	258.0
2611	Pulp mills (12/73 = 100)	240.0	246.8	246.8	246.9	246.9	246.9	251.2	251.3	251.3	[1]251.3	253.5	253.5	257.2	265.5
2621	Paper mills, except building (12/74 = 100)	145.5	149.2	150.7	152.0	152.6	153.3	153.9	154.3	155.7	[1]157.0	158.3	159.6	159.8	159.6
2631	Paperboard mills (12/74 = 100)	139.0	143.2	142.4	148.2	149.2	150.8	151.0	152.1	152.3	[1]151.7	152.6	153.6	153.7	153.8
2647	Sanitary paper products	322.0	334.7	338.2	338.3	342.5	343.0	343.2	344.3	344.4	[1]344.2	345.3	345.3	345.3	345.3
2654	Sanitary food containers	216.0	222.3	225.3	232.0	235.2	237.9	239.2	239.2	242.2	[1]246.0	254.2	254.5	254.8	254.7
2655	Fiber cans, drums, and similar products (12/75 = 100)	150.6	155.5	155.0	157.7	160.6	160.7	160.8	160.9	160.9	163.2	163.2	163.2	167.8	167.8
2812	Alkalies and chlorine (12/73 = 100)	247.5	265.1	262.3	277.9	299.2	295.6	294.4	302.2	309.3	[1]306.2	309.1	313.1	314.5	317.0
2821	Plastics materials and resins (6/76 = 100)	143.0	141.5	140.9	142.4	143.5	144.8	148.1	149.7	150.7	155.0	154.6	156.9	155.5	152.3
2822	Synthetic rubber	255.8	260.4	262.5	275.9	280.7	283.9	288.1	293.3	296.3	[1]297.3	296.1	296.3	299.9	301.1
2824	Organic fiber, noncellulosic	132.5	138.7	138.9	144.0	144.7	147.4	149.9	156.2	156.8	[1]159.2	160.5	161.6	163.6	162.5
2873	Nitrogenous fertilizers (12/75 = 100)	124.4	130.0	131.8	135.0	138.1	141.7	147.1	148.5	143.4	[1]143.5	144.5	142.7	143.1	144.4
2874	Phosphatic fertilizers	237.3	239.6	245.4	247.9	248.2	253.5	251.6	251.5	250.9	[1]249.4	261.0	258.8	259.0	258.9
2875	Fertilizers, mixing only	246.9	252.9	252.2	255.8	266.8	270.0	271.1	273.6	273.1	[1]275.3	273.1	272.5	271.2	271.6
2892	Explosives	269.7	272.9	282.8	288.8	295.4	303.9	324.8	314.5	312.6	315.7	316.7	316.4	318.3	316.4
2911	Petroleum refining (6/76 = 100)	248.6	256.3	261.4	268.3	279.5	299.0	306.0	304.1	302.6	[1]299.1	297.5	295.8	294.5	293.2
2951	Paving mixtures and blocks (12/75 = 100)	171.4	176.2	181.5	183.1	185.4	189.1	198.1	198.8	198.4	[1]197.1	196.2	195.8	196.1	196.4
2952	Asphalt felts and coatings (12/75 = 100)	173.4	173.5	172.5	172.4	170.0	169.7	180.4	176.3	185.7	[1]182.8	181.7	173.7	174.2	177.6
3011	Tires and inner tubes (12/73 = 100)	203.1	209.9	210.1	207.0	209.3	213.8	215.5	216.2	216.2	[1]213.1	216.2	220.5	221.3	221.2

30. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1980	1980		1981										
			Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July[1]	Aug.	Sept.	Oct.	Nov.
3021	Rubber and plastic footwear (12/71 = 100)	177.9	182.4	182.3	182.8	183.4	183.6	183.6	184.0	184.1	[1]185.0	185.3	185.2	185.0	185.0
3031	Reclaimed rubber (12/73 = 100)	184.7	184.1	186.7	190.4	190.4	187.6	187.7	187.7	187.7	[1]192.9	198.1	198.1	198.1	198.1
3079	Miscellaneous plastic products (6/78 = 100)	121.7	124.6	124.5	125.4	125.4	126.3	128.7	129.1	129.6	[1]129.2	129.7	130.0	130.5	130.5
3111	Leather tanning and finishing (12/77 = 100)	146.6	149.3	156.6	157.0	145.5	151.4	158.6	154.7	150.7	[1]151.3	147.8	147.6	147.5	146.9
3142	House slippers (12/75 = 100)	149.1	158.2	154.9	([2])	([2])	([2])	([2])	([2])	([2])	([2])	([2])	([2])	([2])	([2])
3143	Men's footwear, except athletic (12/75 = 100)	159.8	162.4	162.4	164.8	166.5	167.6	168.7	168.9	169.6	[1]170.7	170.4	169.8	169.6	170.6
3144	Women's footwear, except athletic	213.5	217.1	217.1	217.8	220.2	218.7	218.7	219.3	218.5	218.9	219.2	217.8	217.0	214.5
3171	Women's handbags and purses (12/75 = 100)	137.9	140.9	140.9	149.5	149.5	149.7	149.7	158.4	158.4	158.4	158.4	158.4	158.4	158.4
3211	Flat glass (12/71 = 100)	161.3	166.4	166.3	167.1	167.5	168.1	174.5	174.5	174.6	[1]180.0	180.2	180.2	180.1	180.1
3221	Glass containers	292.6	306.1	311.4	311.4	311.4	311.4	326.6	335.2	335.2	[1]335.4	334.7	334.7	334.7	334.7
3241	Cement, hydraulic	310.8	310.5	310.5	324.3	324.3	[1]324.4	332.4	332.3	331.0	[1]331.6	329.5	328.9	327.2	327.2
3251	Brick and structural clay tile	277.3	282.9	282.9	286.6	286.1	295.3	296.0	297.4	298.5	[1]298.9	299.9	300.9	300.8	301.4
3253	Ceramic wall and floor tile (12/75 = 100)	122.5	120.1	120.1	127.1	127.1	127.1	129.6	132.1	132.1	[1]132.1	129.6	137.7	137.7	137.7
3255	Clay refractories	273.6	280.7	280.7	291.5	305.2	308.1	308.6	311.0	312.2	[1]312.3	314.0	314.2	315.7	317.0
3259	Structural clay products, n.e.c.	202.7	205.0	205.1	209.5	212.8	213.0	212.7	223.9	223.9	[1]223.9	224.4	227.9	232.2	232.2
3261	Vitreous plumbing fixtures	234.8	242.6	245.0	244.7	248.9	249.4	252.0	252.5	255.8	258.7	259.5	258.9	258.9	259.3
3262	Vitreous china food utensils	317.3	327.4	327.4	327.4	327.4	328.0	328.2	336.6	336.6	336.6	336.6	336.8	336.8	344.7
3263	Fine earthenware food utensils	295.5	297.9	297.9	298.6	298.6	307.9	308.2	309.6	309.6	[1]309.6	309.1	313.3	313.3	314.4
3269	Pottery products, n.e.c. (12/75 = 100)	152.6	155.5	155.5	155.5	155.5	158.5	158.6	160.6	160.7	[1]160.7	160.6	161.7	161.7	163.6
3271	Concrete block and brick	257.3	259.4	259.4	264.1	265.0	263.2	267.4	271.2	271.2	[1]271.2	274.0	274.2	274.0	274.5
3273	Ready-mixed concrete	279.9	282.8	282.9	294.8	295.4	296.0	298.5	299.4	301.7	[1]300.7	299.9	299.5	299.7	299.2
3274	Lime (12/75 = 100)	157.7	160.8	161.8	165.7	171.7	172.6	172.4	172.6	173.0	[1]173.1	174.2	173.9	173.9	173.8
3275	Gypsum products	256.7	253.6	253.1	259.9	257.6	257.9	257.1	261.4	260.9	261.8	258.9	257.0	251.5	252.5
3291	Abrasive products (12/71 = 100)	212.6	220.2	220.6	222.8	221.7	223.1	232.7	233.2	234.1	[1]235.0	234.9	235.6	237.5	239.6
3297	Nonclay refractories (12/74 = 100)	161.1	167.5	167.6	172.4	177.5	178.9	178.9	186.6	189.7	189.7	189.8	189.8	189.8	190.2
3312	Blast furnaces and steel mills	310.5	316.6	320.7	328.7	328.9	334.0	336.7	337.3	338.2	[1]350.1	349.5	350.3	353.1	352.9
3313	Electrometallurgical products (12/75 = 100)	117.7	117.3	117.3	119.9	120.0	120.0	120.8	120.6	120.7	121.2	121.5	121.4	125.4	125.4
3316	Cold finishing of steel shapes	284.0	288.8	293.3	302.8	303.1	306.1	308.2	308.2	309.5	[1]325.0	325.7	326.2	326.4	326.4
3317	Steel pipes and tubes	290.9	302.4	308.4	315.5	316.3	325.1	333.1	334.1	336.3	348.2	350.7	350.6	362.0	362.3
3321	Gray iron foundries (12/68 = 100)	282.5	290.1	290.7	295.2	296.1	295.6	297.0	298.4	298.4	[1]298.8	299.4	301.9	304.6	303.9
3333	Primary zinc	270.5	282.0	288.7	300.3	300.0	299.7	311.9	332.7	335.1	[1]335.4	349.5	351.5	332.9	337.5
3334	Primary aluminum	297.9	328.5	328.0	331.7	332.3	332.2	332.8	334.2	332.5	[1]334.2	336.5	336.4	335.8	332.5
3351	Copper rolling and drawing	227.5	222.9	222.8	218.7	215.3	211.8	213.1	212.6	210.6	[1]209.4	210.9	213.7	212.9	209.4
3353	Aluminum sheet plate and foil (12/75 = 100)	158.2	163.3	165.1	169.3	170.7	172.1	173.8	174.4	176.1	[1]177.3	178.2	178.7	180.7	179.9
3354	Aluminum extruded products (12/75 = 100)	167.7	176.3	176.4	176.8	177.1	177.3	180.6	180.7	180.8	[1]181.2	181.3	181.2	181.3	181.4
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	146.2	151.2	151.1	155.3	157.1	157.2	157.3	157.4	157.3	[1]157.2	157.6	158.1	163.3	166.2
3411	Metal cans	291.6	297.2	297.3	302.1	303.0	304.7	304.7	304.7	304.7	[1]305.5	306.9	307.4	307.2	306.6
3425	Hand saws and saw blades (12/72 = 100)	182.1	187.2	190.5	195.4	196.3	198.0	198.1	200.2	200.2	[1]204.1	203.8	204.2	204.5	204.6
3431	Metal sanitary ware	248.3	252.2	253.8	256.0	256.4	258.5	262.8	264.8	265.2	[1]269.2	267.1	267.5	267.7	270.6
3465	Automotive stampings (12/75 = 100)	136.9	140.9	141.2	143.0	143.9	144.2	145.0	145.0	145.2	[1]146.2	146.8	147.2	147.7	149.7
3482	Small arms ammunition (12/75 = 100)	145.6	146.3	160.9	157.9	157.8	157.2	157.8	157.8	157.8	[1]157.8	165.3	165.3	165.3	165.3
3493	Steel springs, except wire	230.3	233.3	234.3	238.4	239.2	239.5	241.2	241.7	241.9	[1]243.7	244.3	249.5	249.6	253.8
3494	Valves and pipe fittings (12/71 = 100)	230.0	236.9	238.3	240.2	242.1	244.8	247.6	247.9	248.5	[1]250.0	249.5	251.2	251.4	251.9
3498	Fabricated pipe and fittings	315.5	329.9	329.9	335.7	335.7	338.5	358.8	359.9	361.6	[1]364.6	371.3	374.7	379.1	378.8
3519	Internal combustion engines, n.e.c.	275.4	289.1	289.9	298.2	299.4	302.6	306.0	306.2	307.2	[1]312.0	313.6	320.9	321.6	322.4
3531	Construction machinery (12/76 = 100)	141.1	146.6	147.5	150.0	151.4	152.6	154.4	155.3	156.9	159.0	159.5	160.0	161.5	161.6
3532	Mining machinery (12/72 = 100)	258.5	268.0	270.0	272.5	273.5	276.2	279.5	280.0	280.8	[1]282.7	283.5	286.0	288.7	290.3
3533	Oilfield machinery and equipment	338.1	358.4	360.9	367.0	374.2	378.2	382.2	384.6	390.3	[1]401.3	403.1	408.7	413.3	418.3
3534	Elevators and moving stairways	239.3	248.8	249.5	250.3	250.3	250.3	251.2	251.2	251.2	[1]252.1	252.9	254.6	257.1	259.9
3542	Machine tools, metal forming types (12/71 = 100)	279.5	287.4	292.0	297.5	298.0	301.9	303.0	304.5	305.7	[1]307.6	307.7	312.0	312.3	312.3
3546	Power driven hand tools (12/76 = 100)	132.2	136.7	137.9	142.6	144.9	145.2	146.4	147.0	147.1	[1]148.2	148.5	148.6	148.8	148.7
3552	Textile machinery (12/69 = 100)	216.6	224.5	226.0	235.7	235.0	240.0	240.4	241.2	244.4	[1]246.2	245.3	247.0	248.1	247.9
3553	Woodworking machinery (12/72 = 100)	212.5	217.7	221.5	222.5	223.1	224.7	225.5	219.1	219.7	[1]224.0	224.2	225.3	226.9	229.0
3576	Scales and balances, excluding laboratory	215.0	226.9	217.9	220.5	221.1	224.2	230.2	230.2	230.3	[1]226.6	226.8	226.1	226.1	226.1
3592	Carburetors, pistons, rings, valves (6/76 = 100)	156.6	165.2	167.6	168.9	170.9	171.5	172.0	172.0	176.5	[1]180.8	181.1	181.9	185.2	187.0
3612	Transformers	184.9	193.0	193.3	194.9	197.1	204.3	206.0	207.8	209.6	[1]210.7	215.3	215.9	216.2	221.5
3623	Welding apparatus, electric (12/72 = 100)	209.9	214.9	215.8	218.9	220.9	222.1	224.3	225.9	227.2	[1]228.3	228.8	230.8	231.8	232.4
3631	Household cooking equipment (12/75 = 100)	133.1	135.8	137.5	140.1	141.0	141.1	140.5	140.7	141.0	[1]140.5	141.1	141.2	141.6	142.0
3632	Household refrigerators, freezers (6/76 = 100)	121.4	125.1	125.1	127.5	127.5	127.6	129.4	129.5	130.8	[1]135.5	134.1	135.0	136.4	136.4
3633	Household laundry equipment (12/73 = 100)	162.0	166.6	167.4	169.8	170.2	170.9	173.5	173.9	173.6	174.1	174.1	176.0	176.8	178.5
3635	Household vacuum cleaners	154.4	158.8	159.1	159.1	156.3	158.5	158.4	158.5	158.6	[1]158.6	152.2	152.2	154.5	154.2
3636	Sewing machines (12/75 = 100)	129.1	130.3	130.3	130.3	130.3	131.9	131.8	153.8	153.8	[1]153.8	153.1	153.1	155.4	155.4
3641	Electric lamps	260.3	270.2	266.2	265.8	271.2	272.6	275.5	275.1	276.5	[1]275.2	280.1	283.2	285.9	286.6
3644	Noncurrent-carrying wiring devices (12/72 = 100)	219.7	223.7	229.2	233.1	236.3	240.6	242.6	242.8	251.5	[1]253.3	256.2	261.0	261.2	264.6
3646	Commercial lighting fixtures (12/75 = 100)	139.3	143.1	144.7	145.1	148.0	151.4	156.1	156.2	156.2	[1]154.4	155.8	157.2	156.8	157.3
3648	Lighting equipment, n.e.c. (12/75 = 100)	139.9	144.7	145.0	146.3	146.8	152.7	153.2	153.3	153.7	153.8	161.3	161.5	161.4	162.0
3671	Electron tubes receiving type	251.8	264.8	272.7	284.3	284.4	285.0	285.0	285.1	312.5	[1]327.4	327.5	327.5	327.6	327.8
3674	Semiconductors and related devices	90.7	91.2	91.6	91.1	90.8	91.3	91.2	90.6	90.3	[1]89.2	89.6	89.5	89.2	91.0
3675	Electronic capacitors (12/75 = 100)	162.7	170.2	170.3	170.3	171.1	173.2	168.7	168.5	171.2	[1]171.4	168.0	168.9	172.4	169.2
3676	Electronic resistors (12/75 = 100)	134.2	137.8	137.8	139.0	139.9	139.9	140.0	140.8	141.2	[1]142.1	142.2	142.6	142.6	142.8
3678	Electronic connectors (12/75 = 100)	148.1	149.7	149.7	152.2	153.5	154.5	154.4	153.7	154.3	[1]155.0	155.1	155.3	156.3	155.8
3692	Primary batteries, dry and wet	176.5	177.0	176.9	179.0	183.3	184.2	182.6	181.0	181.0	181.6	182.7	183.4	182.7	182.7
3711	Motor vehicles and car bodies (12/75 = 100)	136.7	144.6	144.0	145.3	145.7	144.2	148.4	149.6	150.3	[1]150.3	149.7	143.2	158.3	158.5
3942	Dolls (12/75 = 100)	127.4	128.3	128.3	130.7	132.3	132.4	132.4	130.9	130.9	[1]130.9	130.6	130.6	130.6	130.6
3944	Games, toys, and children's vehicles	205.2	207.0	207.1	213.9	220.2	221.2	221.2	221.8	221.9	[1]222.0	219.9	220.1	220.1	220.5
3955	Carbon paper and inked ribbons (12/75 = 100)	132.8	135.0	135.0	133.0	136.4	136.4	136.9	136.9	140.4	140.4	140.6	140.6	140.6	140.6
3995	Burial caskets (6/76 = 100)	131.2	132.9	135.0	135.0	135.0	138.0	138.1	138.3	138.3	138.3	140.6	143.4	143.4	143.4
3996	Hard surface floor coverings (12/75 = 100)	143.7	146.6	146.6	148.6	148.6	148.7	151.5	151.5	151.5	153.3	153.6	153.7	153.7	153.7

[1] Data for July 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

PRODUCTIVITY DATA

PRODUCTIVITY DATA are compiled by the Bureau of Labor Statistics from establishment data and from estimates of compensation and output supplied by the U.S. Department of Commerce and the Federal Reserve Board.

Definitions

Output is the constant dollar gross domestic product produced in a given period. Indexes of **output per hour of labor input,** or labor productivity, measure the value of goods and services produced per hour of labor. **Compensation per hour** includes wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. The data also include an estimate of wages, salaries, and supplementary payments for the self-employed, except for nonfinancial corporations, in which there are no self-employed. **Real compensation per hour** is compensation per hour adjusted by the Consumer Price Index for All Urban Consumers.

Unit labor cost measures the labor compensation cost required to produce one unit of output and is derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from the current dollar gross domestic product and dividing by output. In these tables, **unit nonlabor costs** contain all the components of unit nonlabor payments except unit profits. **Unit profits** include corporate profits and inventory valuation adjustments per unit of output.

The **implicit price deflator** is derived by dividing the current dollar estimate of gross product by the constant dollar estimate, making the deflator, in effect, a price index for gross product of the sector reported.

The use of the term "man hours" to identify the labor component of productivity and costs, in tables 31 through 34, has been discontinued. **Hours of all persons** is now used to describe the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all-employee hour** is now used to describe labor productivity in nonfinancial corporations where there are no self-employed.

Notes on the data

In the private business sector and the nonfarm business sector, the basis for the output measure employed in the computation of output per hour is Gross Domestic Product rather than Gross National Product. Computation of hours includes estimates of nonfarm and farm proprietor hours.

Output data are supplied by the Bureau of Economic Analysis, U.S. Department of Commerce, and the Federal Reserve Board. Quarterly manufacturing output indexes are adjusted by the Bureau of Labor Statistics to annual estimates of output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are from the Bureau of Economic Analysis and the Bureau of Labor Statistics.

Beginning with the September 1976 issue of the *Review*, tables 31–34 were revised to reflect changeover to the new series—private business sector and nonfarm business sector—which differ from the previously published total private economy and nonfarm sector in that output imputed for owner-occupied dwellings and the household and institutions sectors, as well as the statistical discrepancy, are omitted. For a detailed explanation, see J. R. Norsworthy and L. J. Fulco, "New sector definitions for productivity series," *Monthly Labor Review*, October 1976, pages 40–42.

31. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950–80

[1977 = 100]

Item	1950	1955	1960	1965	1970	1973	1974	1975	1976	1977	1978	1979	1980
Private business sector:													
Output per hour of all persons	50.3	58.2	65.1	78.2	86.1	94.8	92.7	94.8	97.9	100.0	99.8	99.5	99.3
Compensation per hour	20.0	26.3	33.9	41.7	58.2	71.3	78.0	85.5	92.9	100.0	108.4	119.3	131.5
Real compensation per hour	50.4	59.6	69.4	80.0	90.8	97.3	95.9	96.3	98.8	100.0	100.7	99.6	96.7
Unit labor cost	39.8	45.2	52.1	53.3	67.6	75.2	84.2	90.2	94.8	100.0	108.6	119.9	132.4
Unit nonlabor payments	43.5	47.8	50.8	57.8	63.4	75.6	78.9	90.7	94.4	100.0	105.1	110.9	118.3
Implicit price deflator	41.0	46.1	51.7	54.8	66.2	75.3	82.4	90.4	94.7	100.0	107.4	116.9	127.6
Nonfarm business sector:													
Output per hour of all persons	56.2	62.7	68.2	80.4	86.7	95.3	93.1	95.0	98.1	100.0	99.8	99.1	98.8
Compensation per hour	21.8	28.3	35.6	42.8	58.6	71.7	78.4	86.0	93.0	100.0	108.5	119.0	130.8
Real compensation per hour	55.0	63.9	73.0	82.2	91.5	97.7	96.4	96.8	99.0	100.0	100.7	99.3	96.2
Unit labor cost	38.8	45.1	52.3	53.2	67.6	75.2	84.3	90.5	94.8	100.0	108.7	120.0	132.4
Unit nonlabor payments	42.8	47.9	50.5	58.2	64.0	71.9	76.1	88.9	94.0	100.0	103.6	108.5	117.6
Implicit price deflator	40.2	46.0	51.7	54.9	66.4	74.1	81.6	89.9	94.5	100.0	107.0	116.2	127.4
Nonfinancial corporations:													
Output per hour of all employees	(1)	(1)	66.3	79.9	85.4	94.5	91.3	94.4	97.4	100.0	100.4	100.4	101.0
Compensation per hour	(1)	(1)	36.3	43.0	58.3	70.8	77.6	85.5	92.5	100.0	108.2	118.7	130.7
Real compensation per hour	(1)	(1)	74.2	82.6	91.0	96.5	95.4	96.3	98.5	100.0	100.5	99.1	96.2
Unit labor cost	(1)	(1)	54.7	53.8	68.3	74.9	85.1	90.6	95.0	100.0	107.8	118.2	129.4
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	70.7	75.7	90.9	95.0	100.0	103.8	108.3	117.3
Implicit price deflator	(1)	(1)	54.7	56.2	66.5	73.4	81.8	90.7	95.0	100.0	106.4	114.8	125.2
Manufacturing:													
Output per hour of all persons	49.5	56.5	60.1	74.6	79.2	93.1	90.9	93.5	97.7	100.0	100.9	102.0	101.7
Compensation per hour	21.5	28.8	36.7	42.9	57.6	69.1	76.4	85.5	92.4	100.0	108.2	118.8	131.6
Real compensation per hour	54.1	65.2	75.1	82.3	89.9	94.2	93.9	96.3	98.3	100.0	100.5	99.2	96.7
Unit labor cost	43.4	51.0	61.1	57.4	72.7	74.2	84.1	91.4	94.6	100.0	107.3	116.5	129.4
Unit nonlabor payments	55.1	59.4	62.0	70.3	66.0	71.6	70.4	88.5	95.1	100.0	104.7	105.7	108.7
Implicit price deflator	46.8	53.4	61.3	61.2	70.7	73.4	80.1	90.6	94.7	100.0	106.5	113.4	123.4

[1] Not available.

32. Annual changes in productivity, hourly compensation, unit costs, and prices, 1970–80

Item	Year											Annual rate of change	
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1950-80	1960-80
Private business sector:													
Output per hour of all persons	0.9	3.6	3.5	2.7	-2.3	2.3	3.3	2.1	-0.2	-0.3	-0.2	2.5	2.2
Compensation per hour	7.4	6.6	6.5	8.0	9.4	9.6	8.6	7.7	8.4	10.1	10.2	6.0	7.1
Real compensation per hour	1.4	2.2	3.1	1.7	-1.4	0.4	2.7	1.2	0.7	-1.1	-3.0	2.4	1.9
Unit labor cost	6.4	2.9	2.9	5.2	11.9	7.2	5.1	5.5	8.6	10.4	10.4	3.5	4.8
Unit nonlabor payments	0.7	7.6	4.5	5.9	4.4	15.0	4.1	5.9	5.1	5.5	6.6	3.2	4.4
Implicit price deflator	4.5	4.4	3.4	5.4	9.4	9.7	4.7	5.6	7.4	8.8	9.2	3.4	4.7
Nonfarm business sector:													
Output per hour of all persons	0.3	3.3	3.7	2.5	-2.4	2.1	3.2	2.0	-0.2	-0.7	-0.3	2.1	1.9
Compensation per hour	7.0	6.6	6.7	7.6	9.4	9.6	8.1	7.6	8.5	9.7	9.9	5.7	6.8
Real compensation per hour	1.0	2.2	3.3	1.3	-1.4	0.4	2.2	1.0	0.7	-1.4	-3.2	2.1	1.6
Unit labor cost	6.6	3.1	2.8	4.9	12.1	7.4	4.7	5.5	8.7	10.4	10.3	3.5	4.8
Unit nonlabor payments	1.1	7.4	3.2	1.3	5.9	16.7	5.7	6.4	3.6	4.8	8.4	3.1	4.2
Implicit price deflator	4.8	4.5	3.0	3.7	10.1	10.3	5.1	5.8	7.0	8.6	9.7	3.4	4.6
Nonfinancial corporations:													
Output per hour of all employees	0.4	4.8	3.0	2.6	-3.4	3.4	3.2	2.7	0.4	-0.0	0.6	(1)	2.1
Compensation per hour	6.8	6.5	5.8	7.7	9.7	10.1	8.2	8.1	8.2	9.7	10.1	(1)	6.7
Real compensation per hour	0.8	2.1	2.5	1.4	-1.1	0.9	2.3	1.5	0.5	-1.4	-3.0	(1)	1.5
Unit labor cost	6.3	1.6	2.8	4.9	13.6	6.5	4.9	5.3	7.8	9.7	9.5	(1)	4.6
Unit nonlabor payments	0.5	7.4	2.7	1.5	7.1	20.1	4.6	5.2	3.6	4.4	8.3	(1)	3.8
Implicit price deflator	4.4	3.5	2.8	3.8	11.4	10.9	4.8	5.2	6.4	7.9	9.1	(1)	4.3
Manufacturing:													
Output per hour of all persons	-0.2	6.1	5.0	5.4	-2.4	2.9	4.4	2.4	0.9	1.1	^{r}-0.3	2.6	2.7
Compensation per hour	6.8	6.1	5.4	7.2	10.6	11.9	8.0	8.3	8.2	9.8	10.7	5.6	6.7
Real compensation per hour	0.8	1.8	2.0	0.9	-0.3	2.5	2.1	1.7	0.5	-1.3	-2.5	2.0	1.5
Unit labor cost	7.0	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.3	8.6	11.0	2.9	3.8
Unit nonlabor payments	-2.5	11.2	0.8	-3.3	-1.8	25.9	7.4	5.2	4.7	0.9	2.9	2.1	2.7
Implicit price deflator	4.3	3.1	0.5	0.3	9.0	13.1	4.6	5.6	6.5	6.4	8.8	2.7	3.5

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[1] Not available.

r = revised.

33. Quarterly indexes of productivity, hourly compensation, unit costs, and prices, seasonally adjusted

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1979				1980				1981		
	1979	1980	I	II	III	IV	I	II	III	IV	I	II	III
Private business sector:													
Output per hour of all persons	99.5	99.3	99.7	99.7	99.4	99.1	99.5	99.1	99.4	99.1	100.3	101.1	^{r}100.9
Compensation per hour	119.3	131.5	115.0	118.1	120.7	123.2	126.4	130.1	133.1	135.9	139.7	143.2	146.4
Real compensation per hour	99.6	96.7	100.6	100.3	99.2	98.0	96.7	96.5	96.9	96.0	96.1	96.8	^{r}96.2
Unit labor cost	119.9	132.4	115.4	118.5	121.4	124.3	127.0	131.3	133.9	137.0	139.4	141.6	^{r}145.1
Unit nonlabor payments	110.9	118.3	109.6	110.4	111.5	112.2	115.2	116.0	119.7	122.7	127.6	129.3	^{r}132.2
Implicit price deflator	116.9	127.6	113.4	115.8	118.1	120.2	123.0	126.1	129.1	132.2	135.4	137.5	^{r}140.8
Nonfarm business sector:													
Output per hour of all persons	99.1	98.8	99.5	99.1	98.9	98.8	98.9	98.2	99.0	99.0	100.0	100.4	^{r}99.9
Compensation per hour	119.0	130.8	114.9	117.7	120.2	123.0	126.0	129.4	132.3	135.4	139.1	142.4	145.6
Real compensation per hour	99.3	96.2	100.4	100.0	98.8	97.8	96.4	96.0	96.3	95.6	95.7	96.3	95.7
Unit labor cost	120.0	132.4	115.4	118.7	121.5	124.4	127.4	131.8	133.6	136.8	139.1	141.9	^{r}145.7
Unit nonlabor payments	108.5	117.6	107.1	107.7	109.2	110.1	113.9	115.1	119.2	122.0	127.8	128.7	^{r}131.9
Implicit price deflator	116.2	127.4	112.6	115.1	117.4	119.7	122.9	126.3	128.8	131.9	135.3	^{r}137.5	141.1
Nonfinancial corporations:													
Output per hour of all employees	100.4	101.0	100.6	100.7	100.5	99.9	100.2	100.1	101.8	101.8	103.3	103.9	^{p}103.7
Compensation per hour	118.7	130.7	114.5	117.6	120.1	122.7	125.7	129.3	132.5	135.5	139.2	142.3	^{p}145.4
Real compensation per hour	99.1	96.2	100.1	99.9	98.7	97.5	96.2	95.9	96.5	95.7	95.7	96.2	^{p}95.6
Total unit costs	116.8	129.7	112.2	115.3	118.2	121.3	124.2	129.2	131.1	134.1	136.0	138.7	^{p}142.2
Unit labor cost	118.2	129.4	113.8	116.8	119.5	122.8	125.4	129.1	130.2	133.1	134.7	137.0	^{p}140.2
Unit nonlabor costs	112.7	130.2	107.8	111.2	114.6	117.2	120.9	129.3	133.8	136.9	139.5	143.6	^{p}147.9
Unit profits	99.0	90.2	105.6	100.7	97.5	92.2	95.5	83.4	89.1	92.4	106.8	^{r}102.8	^{p}105.1
Implicit price deflator	114.8	125.2	111.5	113.7	115.9	118.1	121.0	124.1	126.4	129.5	132.7	134.7	^{p}138.0
Manufacturing:													
Output per hour of all persons	102.0	101.7	101.5	102.3	102.0	102.1	102.0	100.7	100.7	103.2	104.1	105.1	105.5
Compensation per hour	118.8	131.6	114.5	118.6	119.8	122.3	125.4	130.0	133.9	137.3	140.9	144.6	^{r}147.7
Real compensation per hour	99.2	96.7	100.2	100.7	98.5	97.2	95.9	96.4	97.5	97.0	96.9	97.8	^{r}97.1
Unit labor cost	116.5	129.4	112.9	115.9	117.5	119.8	122.9	129.1	133.0	133.0	135.4	137.5	^{r}140.1

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[1] Not available.

r = revised.

34. Percent change from preceding quarter and year in productivity, hourly compensation, unit costs, and prices, seasonally adjusted at annual rate

[1977=100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	I 1980 to II 1980	II 1980 to III 1980	III 1980 to IV 1980	IV 1980 to I 1981	I 1981 to II 1981	II 1981 to III 1981	II 1979 to II 1980	III 1979 to III 1980	IV 1979 to IV 1980	I 1980 to I 1981	II 1980 to II 1981	III 1980 to III 1981
Private business sector:												
Output per hour of all persons	−1.8	1.3	−1.1	4.6	3.5	[r]−1.0	−0.6	0.0	0.0	0.7	2.1	[r]1.5
Compensation per hour	12.3	9.5	8.6	11.8	10.4	[r]9.2	10.1	10.3	10.3	10.5	10.1	10.0
Real compensation per hour	−0.7	1.6	−3.8	0.4	3.2	−2.4	−3.8	−2.3	−2.0	−0.7	0.3	−0.7
Unit labor costs	14.4	8.1	9.8	6.9	6.6	[r]10.3	10.8	10.3	10.3	9.7	7.8	[r]8.4
Unit nonlabor payments	2.6	13.7	10.2	17.2	5.3	[r]9.3	5.1	7.4	9.3	10.8	11.5	[r]10.4
Implicit price deflator	10.5	9.8	9.9	10.0	6.2	[r]10.0	9.0	9.4	10.0	10.1	9.0	9.0
Nonfarm business sector:												
Output per hour of all persons	−2.9	3.6	−0.2	4.3	1.4	[r]−1.6	−1.0	0.1	0.1	1.1	2.2	0.9
Compensation per hour	11.3	9.0	9.8	11.6	9.6	[r]9.3	9.9	10.1	10.1	10.4	10.0	10.1
Real compensation per hour	−1.6	1.2	−2.7	[r]0.2	2.4	[r]−2.3	−4.0	−2.5	−2.2	−0.8	0.2	−0.6
Unit labor costs	14.6	5.3	10.1	7.0	8.1	[r]11.1	11.0	9.9	9.9	9.2	7.6	[r]9.1
Unit nonlabor payments	4.2	15.0	9.9	20.3	3.0	[r]10.3	6.9	9.1	10.8	12.2	11.8	[r]10.7
Implicit price deflator	11.3	8.2	10.0	11.0	6.5	[r]10.9	9.7	9.6	10.2	10.1	8.9	9.6
Nonfinancial corporations:												
Output per hour of all employees	−0.5	6.7	0.0	6.3	2.2	[r]−0.6	−0.5	1.3	1.9	3.1	3.8	[p]1.9
Compensation per hour	12.0	10.2	9.4	11.4	9.3	[p]9.0	9.9	10.3	10.4	10.8	10.1	[p]9.8
Real compensation per hour	−1.0	2.2	−3.1	0.0	2.1	[p]−2.6	−3.9	−2.2	−1.9	−0.5	0.3	[p]−0.9
Total unit costs	17.0	6.2	9.4	5.6	8.4	[p]10.4	12.0	11.0	10.5	9.5	7.4	[p]8.4
Unit labor costs	12.6	3.2	9.4	4.8	7.0	[p]9.6	10.5	8.9	8.4	7.4	6.1	[p]7.7
Unit nonlabor costs	30.6	14.7	9.5	7.9	12.3	[p]12.3	16.3	16.8	16.8	15.4	11.1	[p]10.5
Unit profits	−41.9	30.3	15.7	77.9	−13.9	[p]8.9	−17.2	−8.6	0.3	11.8	23.3	[p]17.9
Implicit price deflator	10.5	7.9	9.9	10.4	6.2	[p]10.2	9.1	9.1	9.6	9.7	8.6	[p]9.2
Manufacturing:												
Output per hour of all persons	−4.9	0.0	10.4	3.3	4.1	[r]1.3	−1.6	−1.3	1.1	2.1	4.4	[r]4.7
Compensation per hour	15.5	12.7	10.5	11.1	10.8	[r]9.0	9.6	11.7	12.2	12.4	11.3	[r]10.3
Real compensation per hour	2.1	4.5	−2.2	−0.3	3.5	[r]−2.7	−4.3	−1.0	−0.3	1.0	1.4	[r]−0.4
Unit labor costs	21.4	[r]12.7	0.1	7.5	6.4	[r]7.6	11.3	13.2	11.0	10.2	6.6	[r]5.3

[1] Not available.

r = revised.

LABOR-MANAGEMENT DATA

MAJOR COLLECTIVE BARGAINING DATA are obtained from contracts on file at the Bureau of Labor Statistics, direct contact with the parties, and from secondary sources. Additional detail is published in *Current Wage Developments*, a monthly periodical of the Bureau. Data on work stoppages are based on confidential responses to questionnaires mailed by the Bureau of Labor Statistics to parties involved in work stoppages. Stoppages initially come to the attention of the Bureau from reports of Federal and State mediation agencies, newspapers, and union and industry publications.

Definitions

Data on wage changes apply to private nonfarm industry agreements covering 1,000 workers or more. Data on wage and benefit changes *combined* apply only to those agreements covering 5,000 workers or more. **First-year wage settlements** refer to pay changes going into effect within the first 12 months after the effective date of the agreement. **Changes over the life of the agreement** refer to total agreed upon settlements (exclusive of potential cost-of-living escalator adjustments) expressed at an average annual rate. **Wage-rate changes** are expressed as a percent of straight-time hourly earnings, while **wage and benefit changes** are expressed as a percent of total compensation.

Effective wage-rate adjustments going into effect in major bargaining units measure changes actually placed into effect during the reference period, whether the result of a newly negotiated increase, a deferred increase negotiated in an earlier year, or as a result of a cost-of-living escalator adjustment. Average adjustments are affected by workers receiving no adjustment, as well as by those receiving increases or decreases.

Work stoppages include all known strikes or lockouts involving six workers or more and lasting a full shift or longer. Data cover all workers idle one shift or more in establishments directly involved in a stoppage. They do not measure the indirect or secondary effect on other establishments whose employees are idle owing to material or service shortages.

35. Wage and benefit settlements in major collective bargaining units, 1976 to date

[In percent]

Measures and industry	Annual average					Quarterly average								
	1976	1977	1978	1979	1980	1979		1980				1981 p		
						III	IV	I	II	III	IV	I	II	III
Wage and benefit settlements, all industries:														
First-year settlements	8.5	9.6	8.3	9.0	10.4	9.0	8.5	8.8	10.2	11.4	8.5	10.3	11.9	12.8
Annual rate over life of contract	6.6	6.2	6.3	6.6	7.1	6.1	6.0	6.7	7.4	7.2	6.1	7.6	10.9	9.3
Wage rate settlements, all industries:														
First-year settlements	8.4	7.8	7.6	7.4	9.5	6.8	6.3	8.2	9.1	10.5	8.3	9.2	11.9	12.1
Annual rate over life of contract	6.4	5.8	6.4	6.0	7.1	5.1	5.3	6.5	7.3	7.4	6.5	7.8	9.7	9.4
Manufacturing:														
First-year settlements	8.9	8.4	8.3	6.9	7.4	6.3	5.6	7.2	6.7	8.4	7.8	9.4	8.0	9.8
Annual rate over life of contract	6.0	5.5	6.6	5.4	5.4	4.7	4.2	5.7	5.1	5.6	5.8	7.0	6.5	7.6
Nonmanufacturing (excluding construction):														
First-year settlements	8.6	8.0	8.0	7.6	9.5	9.4	7.8	9.4	10.3	9.5	8.2	8.6	11.8	10.4
Annual rate over life of contract	7.2	5.9	6.5	6.2	6.6	6.5	7.4	7.6	8.5	5.9	6.8	7.8	9.1	8.5
Construction:														
First-year settlements	6.1	6.3	6.5	8.8	13.6	9.7	7.5	10.8	12.2	15.4	14.3	11.4	13.2	17.6
Annual rate over life of contract	6.2	6.3	6.2	8.3	11.5	8.5	7.6	9.1	10.4	13.0	12.0	10.3	11.1	12.8

36. Effective wage adjustments in major collective bargaining units, 1976 to date

[In percent]

Measures and industry	Average annual changes					Average quarterly changes								
	1976	1977	1978	1979	1980	1979		1980				1981^{p}		
						III	IV	I	II	III	IV	I	II	III
Total effective wage rate adjustment, all industries	8.1	8.0	8.2	9.1	9.9	3.3	1.6	1.6	3.3	3.5	1.3	1.2	2.8	3.0
Change resulting from —														
Current settlement	3.2	3.0	2.0	3.0	3.6	1.0	.5	.4	1.0	1.7	.5	.1	1.0	.5
Prior settlement	3.2	3.2	3.7	3.0	3.5	1.0	.4	.5	1.4	1.2	.3	.6	1.3	1.5
Cost-of-living adjustment clause	1.6	1.7	2.4	3.1	2.8	1.2	.7	.7	.8	.7	.6	.6	.6	1.0
Manufacturing	8.5	8.4	8.6	9.6	10.2	3.2	2.4	2.0	3.4	2.9	1.7	1.5	1.8	2.6
Nonmanufacturing	7.7	7.6	7.9	8.8	9.7	3.4	1.0	1.3	3.2	4.0	1.1	1.0	3.6	3.3

NOTE: Because of rounding and compounding, the sums of individual items may not equal totals.

37. Work stoppages, 1947 to date

Month and year	Number of stoppages		Workers involved		Days idle	
	Beginning in month or year	In effect during month	Beginning in month or year (thousands)	In effect during month (thousands)	Number (thousands)	Percent of estimated working time
1947	3,693	....	2,170	....	34,600	.30
1948	3,419	....	1,960	....	34,100	.28
1949	3,606	....	3,030	....	50,500	.44
1950	4,843	....	2,410	....	38,800	.33
1951	4,737	....	2,220	....	22,900	.18
1952	5,117	....	3,540	....	59,100	.48
1953	5,091	....	2,400	....	28,300	.22
1954	3,468	....	1,530	....	22,600	.18
1955	4,320	....	2,650	....	28,200	.22
1956	3,825	....	1,900	....	33,100	.24
1957	3,673	....	1,390	....	16,500	.12
1958	3,694	....	2,060	....	23,900	.18
1959	3,708	....	1,880	....	69,000	.50
1960	3,333	....	1,320	....	19,100	.14
1961	3,367	....	1,450	....	16,300	.11
1962	3,614	....	1,230	....	18,600	.13
1963	3,362	....	941	....	16,100	.11
1964	3,655	....	1,640	....	22,900	.15
1965	3,963	....	1,550	....	23,300	.15
1966	4,405	....	1,960	....	25,400	.15
1967	4,595	....	2,870	....	42,100	.25
1968	5,045	....	2,649	....	49,018	.28
1969	5,700	....	2,481	....	42,869	.24
1970	5,716	....	3,305	....	66,414	.37
1971	5,138	....	3,280	....	47,589	.26
1972	5,010	....	1,714	....	27,066	.15
1973	5,353	....	2,251	....	27,948	.14
1974	6,074	....	2,778	....	47,991	.24
1975	5,031	....	1,746	....	31,237	.16
1976	5,648	....	2,420	....	37,859	.19
1977	5,506	....	2,040	....	35,822	.17
1978	4,230	....	1,623	....	36,922	.17
1979	4,827	....	1,727	....	34,754	.15
1980: October	349	722	90	224	2,530	.12
November	205	532	53	126	1,440	.09
December	90	380	19	77	1,228	.06
1981^{p}: January	253	297	50	68	614	.03
February	347	517	90	136	647	.04
March	314	545	271	336	1,419	.07
April	371	560	101	273	5,117	.25
May	473	688	152	383	5,857	.31
June	421	682	186	499	3,891	.19
July	391	659	127	190	2,015	.10
August	310	596	72	148	1,775	.09
September	358	565	47	109	1,468	.07
October	231	517	25	83	1,182	.06

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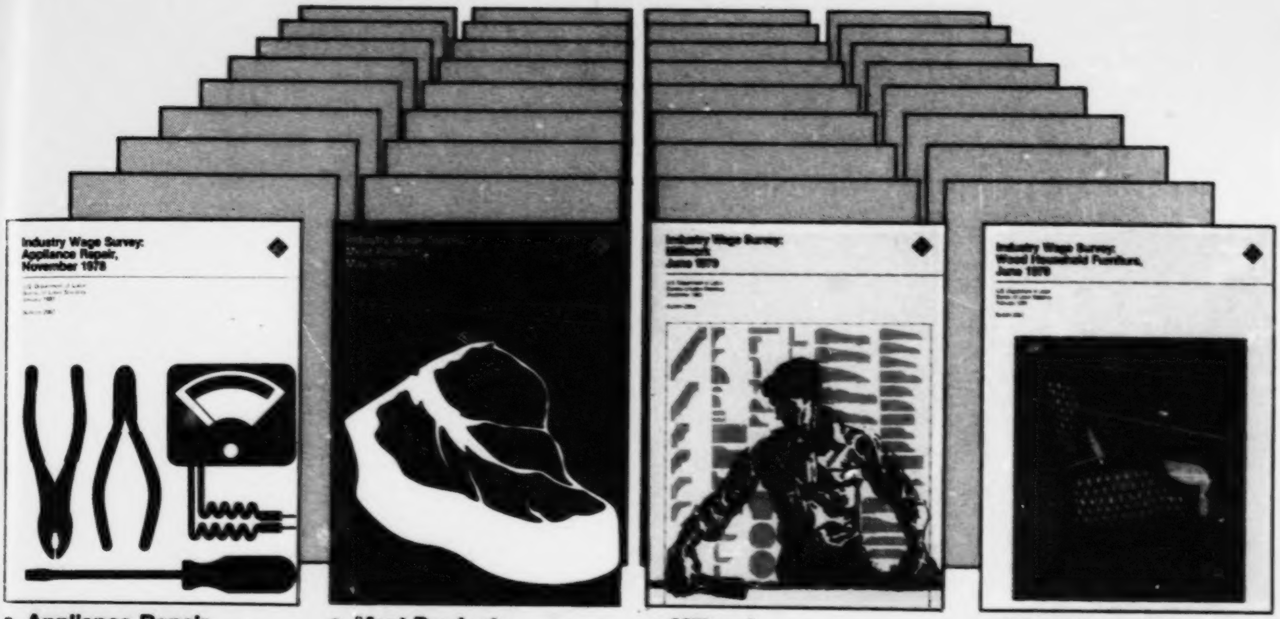
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U.S. Department of Labor
Bureau of Labor Statistics
February 1982

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Articles on jobless youth a
immigration policy

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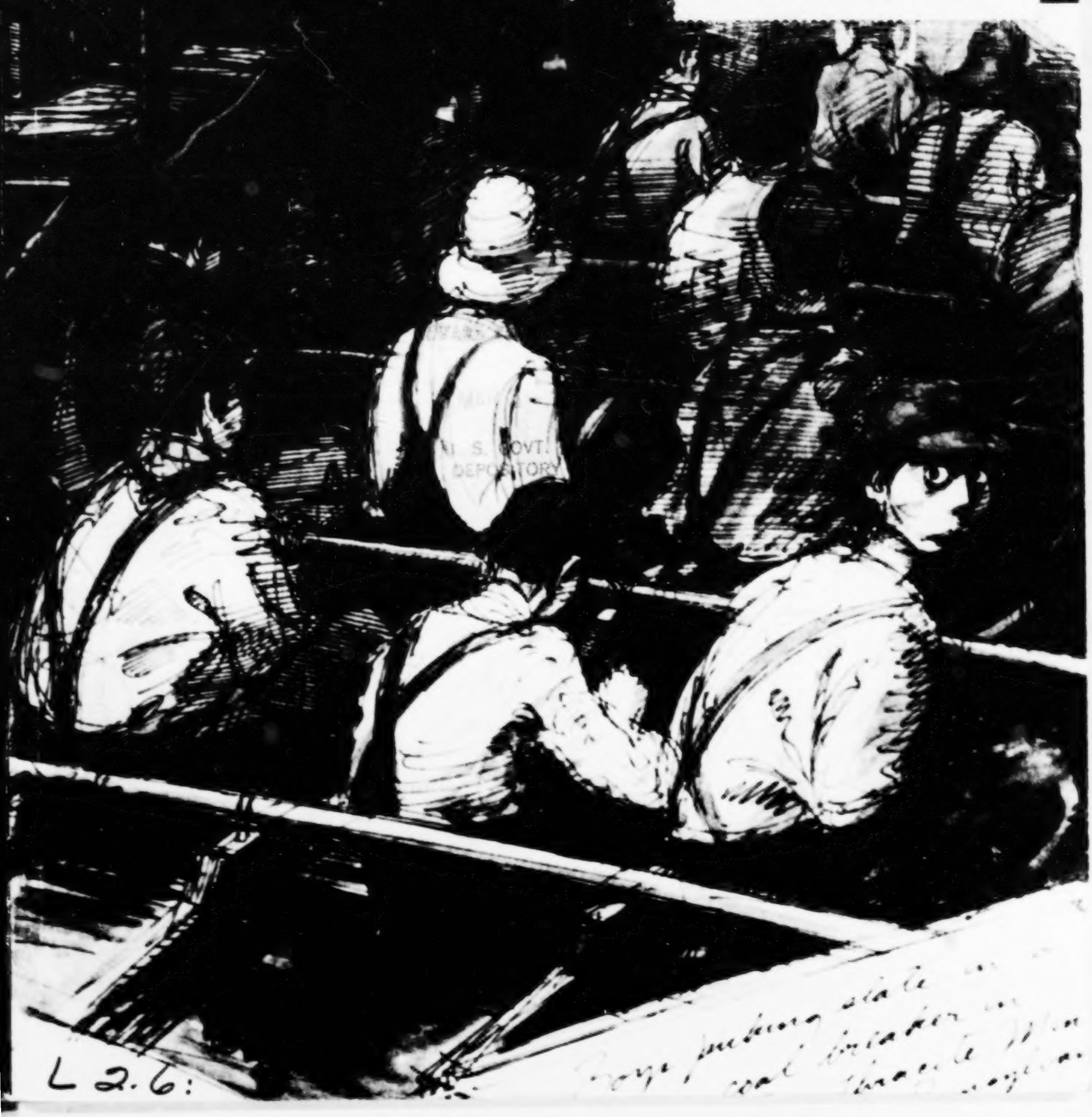
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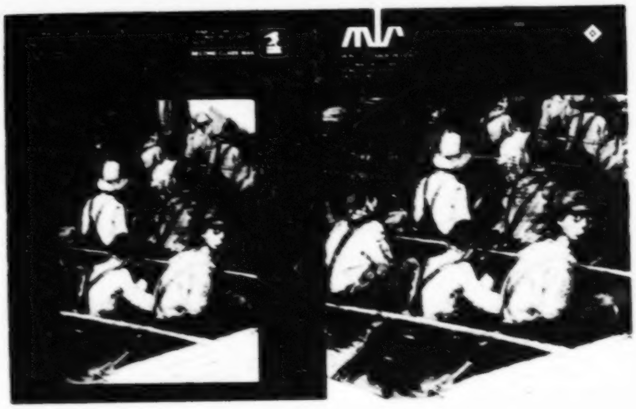

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MONTHLY LABOR REVIEW

FEBRUARY 1982
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Labor Month In Review

STATE OF THE ART. Annual meetings of the American Economic Association often are occasions for self-examination. Two University of Wisconsin economists contributed to that tradition at the recent Washington, D.C., meeting of the Association with critical looks at the state of the art of economics.

Jack Barbash, John P. Bascom Professor of Economics and Industrial Relations (emeritus), warned that academic economics is turning into a guild because its craft or professional side is promoted at the expense of its practical or problem-solving side. Here are excerpts from his paper, "The Guilds of Academe or Brother, Can You Paradigm?"

What makes academic economics a guild form is the primacy of producer values over consumer values—research over teaching, theory over application, fidelity "to guild rules [over] quick adaptation to popular demand." It is not that the practical uses of economics are ignored by the guild; it is that guild priorities are shaped by inner-directed craft interests which overshadow, perhaps even overwhelm, the externally oriented uses of economics in the real world.

There is a respectable body of commentary, ironically by guild members of impeccable standing, which assails guild economics on two fundamental grounds: (1) irrelevance to the real world and (2) hyperrefinement of methodology. These are classic guild pathologies. Innovation and problem-solving in the real world of economics seem to be mainly the work of businessmen, popularizers and politicians who are typically objects of fear and loathing within guild circles and whose approaches to problem-solving are put down by guildpersons as "adversary bargaining" or "political dialogue."

The guild principle has actually served academic economics well. Economics is probably the most demanding of the social sciences and has attracted many of the first-rate minds in the country. The guild rigor has made economics the "hardest" of the social sciences.

Problem-solving, on the other hand, has not, I think, been well served by guild values in academic economics. Not a single vital issue of our time—poverty, labor unrest, unemployment, urban deterioration, discrimination, economic development (perhaps inflation is a perverse exception)—has been brought to public awareness through the scholarship of mainstream economics. Once, however, partisans, politicians and popularizers bring the issue out into the open, academic economists do not shrink from processing it for its value to the guild paradigm.

The loss of relevance and accessibility in economics carries large implications for the politics of a democracy. It means that large masses of citizens are rendered powerless to cope with problems in the household and the public economies except through mediation by a meritocracy. No evil intentions are implied. But guild narcissism relegates civic education to an inferior position in its scheme of values. The complexity of large-scale society makes economics difficult enough. But guild obscurantism makes the discipline even more complex and abstruse to the layman than it needs to be.

John M. Culbertson, professor of economics, suggested that economics may be failing because it has never made the transition to the thought-world of modern science. Here are excerpts from his paper, "Economics and the Scientific Method."

Over the past two centuries, one field of thought after another has basically recreated itself by adopting the scientific method and discarding its earlier methods and its earlier doctrines, which were revealed by the new intellectual standards as myths, wishful beliefs, prejudices, superstitions. Where does economics fit into this picture?

The factions into which economists are divided and their versions of economics obviously derive from political or ideological preconceptions. Indeed, the major versions of economics all seem to tell different versions of the same basic story, which is the elemental story of prophetic myth: Everything would be just fine, just as it should be, if only. . .—here one fills in one's version of the required simple, symbolic action, the panacea, laissez faire, deregulation, supply side, or public ownership of the means of production, the required slogan, Keynesian Revolution, monetarism, radical economics. Can this be science?

In the prevailing economics, one hears a great deal of "relations," but, strangely, virtually nothing of the distinction between causal relations and what once were "spurious correlation." One hears much of "significance," but this proves to be "statistical significance"—a statistical significance properly contingent on conditions that usually prove not to be met. One hears little of knowledge, much of theories, models, hypotheses, conjectures, propensities, principles. One sees endless speculations relating to hypothetical cases, but virtually no reference to the actual structures and processes by which events are governed in actual economies.

The present condition of economics can be interpreted as implying the existence of a great challenge to economists. Economics now could be something very different from what it is. Economics could be providing the means to deal realistically with societal economic problems, rather than providing a stream of ideological nostrums and fashionable gimmicks, to mislead economic policy. □

Tracking youth joblessness: persistent or fleeting?

High turnover, seasonality, and work-school transitions are some reasons for high unemployment among young people; a recent longitudinal study suggests that recurrent and extensive joblessness among a relatively few persons may also be an important aspect of the labor market

NORMAN BOWERS

Many studies have focused on differences between youth and adults in job and labor force turnover in attempts to account for the fact that youth unemployment is always higher than that of adults. However, some recent research suggests that the observed age-related differences in the incidence of joblessness are misleading indicators of the dynamics of youth unemployment. While frequent turnover is admittedly a feature of the youth labor market, the core of joblessness may in fact be accounted for by a relatively small number of persons who search for jobs for very long periods.[1]

A new study of matched data from the Current Population Survey examines the unemployment experience of selected individuals in the course of a year, and over 2 consecutive years. The findings suggest that:

- Prolonged joblessness is somewhat concentrated among a relatively small group of workers but is also strongly affected by the business cycle.
- A clear association exists between the extent of past joblessness and the likelihood of subsequent unemployment.
- Two or more spells of joblessness in one year do not necessarily presage similar unemployment the next year.
- Recurrent unemployment is no respecter of age, striking all labor force groups.

The analysis exploits the short-run longitudinal capabilities of the Current Population Survey, which permit construction of a 2-year retrospective labor force history of persons in the sample. This previously untapped data set allows some examination of the following important questions: Is the experience of extensive unemployment in one year associated with extensive unemployment in the following year? How important are repeat spells of unemployment? And, are persons with multiple spells of unemployment in one year more likely than others to experience spells in the subsequent year?

Of course, 2 years is a relatively short time in terms of labor force history, and no definitive analysis of what has been called the "scarring effect" of persistent youth joblessness is possible.[2] Still, the questions that can be addressed are of interest in their own right.

Data sets and limitations

The Current Population Survey (CPS), which provides the underlying data base for the following analysis, is a monthly survey of a rotating panel of approximately 60,000 households (strictly speaking, addresses).[3] Each month, Census Bureau enumerators visit the households in the sample and ask a series of structured questions about the labor force status of each member 16 years of age and over during the reference week. The CPS com-

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prises eight independent panel or rotation groups. Each household is interviewed for 4 consecutive months, dropped from the sample for 8 months, and reinterviewed for 4 final months. Therefore, it is possible that as many as one-half of the households visited in March of one year will be interviewed again the following March, and that responses for this subset of the CPS sample may be matched for purposes of longitudinal study.[4]

To examine work and unemployment experience, two separate matches were made from CPS data for March 1975–76, and for March 1978–79. These reference dates were chosen for two basic reasons: First, every March, a series of supplemental questions about the previous year's work experience is asked of CPS respondents. Included is such information as weeks worked, weeks unemployed, spells of unemployment, and number of employers worked for during the previous year. Thus, for those persons in our matched samples, we have 2 years of labor force history; that is, the work experience data in the matched files refer to 1974–75 and 1977–78. This allows some examination of the concentration and persistence of unemployment, the effects of repeated jobless spells, and so forth. Second, the data from these two time periods might shed some light on the effect of the business cycle on work experience; the March 1975–76 match covers a rather deep recessionary period, while the March 1978–79 match covers 2 years of recovery and expansion.

Several important restrictions on the use of these data and the sample should be noted at the outset. The major data problem is that the work experience questions are asked retrospectively, and the responses are thus subject to recall biases. Respondents may not accurately remember what they and the other members of their households were doing a year earlier. For example, individuals may not recall a brief period during which they were not available for work, and may instead report one long spell of unemployment. The results of Census Bureau tests with the usual monthly CPS questions suggest that recall bias is very important, and generally results in higher estimates of employment and lower estimates of unemployment.[5]

In addition to the data limitations, there are problems with the matched sample, in particular those involving differing probabilities of reinterview and response variability. Basically, the biases in the matched data fall under the heading of sample selectivity:[6] All movers, nonrespondents, those who died, and persons who change answers to questions on which the match is keyed (such as race or sex) are lost to the sample. (In contrast to most longitudinal files, the CPS is not designed to follow respondents who move.) This problem goes beyond the simple loss of a match because the reason for a non-match may, in some way, be correlated with an individual's labor force activity. For example, persons who change addresses or are otherwise not matched may have different patterns of labor force activity than others. In other words, it is possible that there is some interaction between labor market activity and the likelihood of being in the matched file.

Thus, our matched sample is not a random sample of the population, and common forms of statistical analysis are not necessarily appropriate without adjustment for the selectivity problem. For example, persons who change addresses are disproportionately "lost" from the sample, while those less likely to move—older people and whites—are overrepresented in both of the matched data sets. More importantly, only about 50 percent of youth age 18 to 24 who were potential matches were retained. More than 60 percent of 16- and 17-year-olds made the match, but that is still somewhat below the proportion of adults matched. In addition, persons in the actual match are less likely than those in the full set of potential matches to have been currently unemployed, and slightly more likely to have been currently employed (especially in March 1975–76). If current labor force status is associated with past status, or is a determinant of future work experience, the matched data will necessarily reflect that bias.

A related sample problem involves rotation group bias. Persons in rotation groups 1 through 4 in March 1975 and March 1978 were eligible for inclusion in each match.[7] The data for whites age 18 and over indicate that these persons are underrepresented in the first rotation group relative to each of the other rotation groups. On the other hand, there is some evidence of an overrepresentation of blacks age 16 to 17 in the first rotation group. (Interpreting the data for the other age groups for blacks in the sample is difficult, as the rotation group proportions fluctuate considerably.) Of course, individuals do not necessarily enter the survey in the first rotation group, because the rotation group identifier refers to the address of the household and not to the person(s) occupying the address. And, the matched sample may be weighted toward later rotation panels if persons in later rotation groups are more likely to be matched because they are less "mobile"—the sample selectivity problem.

The phenomenon of rotation group bias in panel surveys can often involve more than just differential reinterview probabilities. Specifically, it may also include a conditioning effect—that is, the answers to survey questions are affected by the number of times the respondent has been interviewed. However, the degree to which the information from the CPS work experience questionnaire might be influenced by respondent conditioning is not known.

Lastly, there is the problem of weighting the data. Because the weights used to inflate the raw sample counts from each monthly CPS are based on answers received that month, the March weights for the match periods 1975–76 and 1978–79 need not be the same. As there is currently no reliable theoretical or statistical foundation for handling this problem, the unweighted matched samples are used for analysis. Therefore, any results based on these data pertain, strictly speaking, only to those persons in the sample, and generalized conclusions should be significantly tempered.[8]

A theoretical overview

The unemployment rate may be disaggregated into its frequency and extent components. Much previous research has indicated that youth-adult differences are primarily the result of a higher incidence of unemployment among youth, rather than longer spells.[9]

Table 1 provides further evidence of this relationship. The incidence of unemployment shown is simply the number of persons who experienced unemployment at any time over the period divided by the number of persons with any labor force experience during the period. Both the incidence over a single year and that for the 2-year period covered by the matched data have been calculated.[10] (Excluded from the unemployment figures are all persons who worked at least 50 weeks during the year, but also experienced a 1- to 2-week temporary layoff. This exclusion should not greatly affect the estimates for youth because so few are full-year workers. The calculations for adults 25 years of age and older will be biased downward slightly because a number do experience such brief layoffs.) Table 1 also shows the probability that those in the sample who reported unemployment in 1974 or 1977 also experienced some joblessness during the subsequent year (1975 or 1978). This probability is a rough indicator of the "persistence" of unemployment. The closer the probability is to 1, the less "turnover" there is among those who experience unemployment. Last, we show the average number of weeks of joblessness experienced over the entire 2-year period covered by each match. This number was estimated by dividing the total number of weeks of unemployment over the match period by the number of persons who had some unemployment at any time during that 2 years.

Not surprisingly, the results are similar to the findings of other researchers. The likelihood of joblessness declines with increasing age, while average total time unemployed increases with age. Blacks have a higher incidence of joblessness, and usually spend more time unemployed than whites. Youth whose major activity was attending school show both a lower incidence and spend significantly less total time unemployed than other youth.[11]

The probability that persons who had some unemployment in 1974 or 1977 also experienced unemployment during the following year varied among demographic groups. Youth age 18 to 24 were generally more likely than others to have some joblessness in both years, but these differences were not always large. Overall, the results suggest that neither the persistence hypothesis—that the same persons unemployed one year are also unemployed the next year—nor the turnover hypothesis—that different persons are unemployed each year—completely fits the facts.

Information on weeks of employment is shown in table 2. Reported weeks worked vary significantly by age, race, sex, and major activity.[12] And, except for those whose major activity was school, the average number of weeks worked varies in the opposite manner from that of the experience of unemployment.[13] Lastly, the probability that persons who worked during 1974 or 1977 also worked during the following year varied significantly among groups. For example, young blacks were much less likely than their white counterparts to have worked in consecutive years.

Recently, some researchers have suggested that youth-adult experiences cannot be fully explained by these simple average differences in the likelihood and amount of unemployment and the "normal turnover" that such movement is supposed to represent.[14] Specifically, it has been suggested that the "youth job problem" is really one of a small minority of persons who are without jobs for extended periods, rather than the outcome of high job turnover, seasonality, and the transition between school and work. Do the CPS match data lend any evidence for this hypothesis?

Recurrent unemployment

Repeat spells. It is certainly true that analysis of "average durations" and "average flow probabilities" may mask differences in the experience of unemployment within demographic groups. For example, while the probability of unemployment may satisfactorily account for most youth-adult differences, the bulk of youth joblessness may be highly concentrated by race, sex, or major activity or the same persons may experience many (short) spells of unemployment over time. (Of course, such concentration may also occur within other labor force groups.) Thus, an important question is: Do the same persons experience multiple spells of unemployment from year to year, or is there little relationship between past and subsequent spell frequencies?

Data on the prevalence of repeated jobless spells are available from the CPS matched file. But the information is subject to one additional important limitation. In the March work-experience supplement to the CPS, one of the questions is: "Were the (number of) weeks (person's name) was looking for work (or on layoff) all in one stretch?" The responses are coded as 1 spell, 2 spells, or 3 or more spells. *However, this question is asked only of* *those persons who also worked at any time during the previous year.* Thus, spell information is obtained only for a subset of those who experienced some unemployment. Because demographic groups differ significantly in the likelihood of having worked during the year, the data may be biased in terms of assessing the issue of recurrent spells of unemployment. Consider, for example, the data set for the 1977–78 match. In 1977, blacks, women, and persons whose major activity was school were less likely to have worked than other groups. However, a number of such individuals were reported as having looked for work for varying lengths of time, and were thus unemployed labor force participants. (The results from the 1974–75 match, although not shown here, were very much the same. The major difference was that, regardless of their experience in 1974, there was a somewhat greater likelihood that persons reported one or more spells in 1975 than was true of the 1977–78 match. This is clearly a cyclical phenomenon.)

There are a number of ways to examine the importance of multiple periods of unemployment.[15] For example, one might calculate the average number of spells per person, and compare that across demographic

Table 1. The incidence and duration of unemployment by age, race, sex, and school status, 1974–75 and 1977–78

Age, race, sex, and school status	Unemployment, 1974-75					Unemployment, 1977-78				
	Incidence, 1974[1]	Incidence, 1975	Incidence, 1974-75[2]	Probability in both 1974 and 1975	Duration, 1974-75 (in weeks)[3]	Incidence, 1977[1]	Incidence, 1978	Incidence, 1977-78[2]	Probability in both 1977 and 1978	Duration, 1977-78 (in weeks)[3]
Total										
16 to 17 years	27.6	32.6	40.3	0.350	14.0	24.1	27.0	34.6	0.350	13.9
18 to 19 years	29.6	31.7	43.5	.417	16.8	29.8	26.9	40.1	.401	15.8
20 to 24 years	24.0	27.6	36.6	.450	19.5	26.9	21.0	35.8	.338	18.3
25 to 54 years	11.1	14.1	19.3	.431	20.6	12.5	10.1	17.2	.355	19.0
55 years and over	8.3	10.0	13.7	.333	22.9	8.1	6.4	11.1	.278	23.1
White										
16 to 17 years	26.1	31.0	38.9	.352	14.1	22.8	24.5	32.8	.335	13.4
18 to 19 years	28.2	29.4	41.9	.381	15.5	27.0	24.3	37.5	.370	14.3
20 to 24 years	22.7	26.2	36.0	.434	18.7	25.2	19.2	33.6	.324	16.7
25 to 54 years	10.3	13.4	18.2	.435	19.6	11.5	9.8	16.0	.355	18.1
55 years and over	7.9	9.7	13.2	.342	21.5	7.7	6.0	10.4	.282	23.1
Black and other										
16 to 17 years	40.4	46.0	51.8	.341	13.7	34.8	50.0	48.1	.434	14.6
18 to 19 years	40.7	50.4	55.6	.563	22.9	51.0	45.3	56.9	.527	22.2
20 to 24 years	34.0	38.3	48.9	.531	23.8	38.4	32.6	49.4	.400	25.1
25 to 54 years	18.2	20.2	28.9	.411	22.5	20.4	15.1	26.5	.359	23.2
55 years and over	10.6	12.8	18.5	.275	21.9	12.6	11.1	18.1	.259	21.5
Men										
16 to 17 years	28.5	32.5	41.1	.359	15.3	24.9	28.1	36.0	.354	16.0
18 to 19 years	29.8	34.1	44.8	.485	19.0	29.3	27.3	39.0	.480	18.5
20 to 24 years	24.9	30.2	40.0	.530	21.4	29.2	21.5	38.2	.359	20.1
25 to 54 years	10.1	12.9	17.7	.493	21.7	10.8	9.2	15.2	.414	20.6
55 years and over	7.7	10.5	13.4	.347	23.5	8.3	7.0	11.5	.317	23.4
Women										
16 to 17 years	26.6	32.6	39.6	.339	12.6	23.2	25.9	33.1	.346	11.4
18 to 19 years	29.4	29.1	42.2	.340	14.3	30.4	26.5	41.2	.326	13.4
20 to 24 years	23.0	24.7	35.1	.358	17.2	24.4	20.4	33.3	.312	16.2
25 to 54 years	12.5	15.8	21.2	.365	18.4	14.5	11.3	19.5	.300	17.5
55 years and over	8.9	10.3	14.2	.316	22.9	7.9	5.7	10.6	.218	22.1
Major activity: School										
16 to 17 years	28.1	32.1	39.6	.346	13.8	23.0	25.9	33.6	.310	12.8
18 to 19 years	24.6	29.7	39.0	.352	12.3	23.1	25.6	35.6	.331	13.0
20 to 24 years	18.9	28.8	36.1	.338	11.5	24.0	20.9	32.6	.333	13.1
Major activity: Other										
16 to 17 years	25.7	35.3	44.7	.370	15.0	29.9	33.8	41.0	.517	19.2
18 to 19 years	34.1	33.6	47.9	.460	20.5	36.4	28.1	44.8	.445	18.1
20 to 24 years	25.2	27.3	37.9	.469	21.2	27.7	21.0	36.8	.339	19.2

[1] The incidence of unemployment in a single year is the number of persons who experienced some unemployment divided by the number with some labor force experience.

[2] The incidence of unemployment over the full 2-year period refers to the number of persons who were unemployed at least once divided by the number of persons who were in the labor force at least once during the 2 years.

[3] The average duration was calculated as total weeks unemployed during the 2-year period divided by the number of persons who experienced unemployment at least once. Total weeks unemployed was derived by multiplying the number of persons unemployed by the mid-point of the following duration intervals: 1 to 4 weeks; 5 to 14 weeks; 15 to 26 weeks; 27 to 39 weeks; and 40 to 52 weeks.

NOTE: Excludes those persons who worked at least 50 weeks during the year and experienced a temporary layoff of 1 to 2 weeks.

Table 2. Duration of employment by age, race, sex, and school status, 1974–75 and 1977–78

[In weeks]

Age, race, sex, and school status	1974-75				1977-78			
	Average duration of employment, 1974	Average duration of employment, 1975	Average duration of employment, 1974-75	Probability of some employment in both 1974 and 1975	Average duration of employment, 1977	Average duration of employment, 1978	Average duration of employment, 1977-78	Probability of some employment in both 1977 and 1978
Total								
16 to 17 years	24.0	25.4	39.8	0.832	21.8	25.9	38.9	0.862
18 to 19 years	27.8	30.1	51.0	.870	27.9	30.7	52.6	.913
20 to 24 years	35.5	36.1	65.5	.889	35.7	36.8	67.5	.926
25 to 54 years	41.9	41.6	78.9	.938	41.5	41.9	79.5	.954
55 years and over	40.6	40.4	72.9	.832	39.6	40.2	72.1	.852
White								
16 to 17 years	24.9	25.9	41.4	.850	22.4	26.3	40.4	.884
18 to 19 years	28.3	30.4	52.4	.868	28.7	31.3	54.6	.926
20 to 24 years	35.7	36.2	66.0	.895	36.4	37.2	68.8	.933
25 to 54 years	41.9	41.7	79.2	.939	41.6	42.0	79.7	.956
55 years and over	40.6	40.5	72.9	.830	39.7	39.3	72.5	.854
Black and other								
16 to 17 years	15.9	20.4	26.6	.667	15.6	21.2	26.4	.648
18 to 19 years	23.3	26.7	39.8	.718	21.4	25.8	38.2	.808
20 to 24 years	34.4	35.3	61.6	.846	31.1	34.0	58.7	.895
25 to 54 years	41.5	40.5	76.6	.923	40.6	41.5	77.6	.943
55 years and over	40.3	39.5	72.9	.859	38.8	37.9	68.1	.821
Men								
16 to 17 years	23.6	25.8	40.6	.845	21.9	26.6	40.1	.859
18 to 19 years	28.9	30.5	53.3	.894	28.5	30.4	53.7	.938
20 to 24 years	36.5	36.7	69.0	.924	37.1	38.4	72.5	.965
25 to 54 years	44.3	43.8	86.7	.981	44.0	44.3	87.3	.988
55 years and over	41.4	40.6	75.0	.856	40.4	40.9	74.4	.865
Women								
16 to 17 years	24.5	24.9	39.0	.817	21.6	25.1	37.7	.866
18 to 19 years	26.5	29.6	48.5	.843	27.3	31.0	51.5	.889
20 to 24 years	34.5	35.4	61.9	.851	34.3	35.1	62.5	.889
25 to 54 years	38.7	38.5	69.2	.880	38.2	38.9	70.4	.911
55 years and over	39.4	40.0	69.8	.798	38.4	39.3	68.8	.832
Major activity: School								
16 to 17 years	23.4	24.6	38.1	.825	21.3	25.1	37.5	.856
18 to 19 years	23.2	23.9	40.3	.844	23.3	25.6	42.5	.883
20 to 24 years	24.0	25.0	42.6	.819	24.8	25.4	44.6	.891
Major activity: Other								
16 to 17 years	26.6	29.6	48.8	.862	24.5	30.6	47.7	.895
18 to 19 years	31.9	35.8	61.3	.894	34.4	35.2	63.2	.943
20 to 24 years	38.2	38.5	71.0	.905	37.6	38.9	71.9	.934

groups; or, one might estimate the proportion of the unemployed who had more than one spell over a given period. The approach taken here is a bit different, in that it attempts to determine whether individuals who report multiple spells in one period are more likely than those with one or no reported spells to experience multiple spells in the next period.

The information needed to address this question is presented in tables 3 and 4. These tables show the number of persons in the sample by the number of jobless spells reported in 1977 and the corresponding probability of having no spells reported, one spell, two spells, or more than two spells during 1978.[16] For example, table 3 shows that among 16- to 17-year-olds who had one spell in 1977, 20 percent had one spell in 1978. It is important to note that persons shown in the "no spells reported" category include both those who had no unemployment, and those with some unemployment but no work experience. Depending on the labor force group, the "no work-unemployment" group constituted 2 to 9 percent of the total "no spells reported" category.

The data in table 3 suggest several interesting phenomena. First, for all persons there is a somewhat higher probability that those who had multiple spells in 1977 experienced at least one spell in 1978. Second, the likelihood of experiencing two or more spells in 1978 tends to be an increasing function of the number of spells in 1977 (except among all 18- to 19-year-olds). Unfortunately, the reasons for the transitions from employment into unemployment cannot be determined. And, in order to identify any causal relation between multiple spells in one period and the experience of multiple spells in the subsequent period, we would require more information to ensure that the results are not simply due to heterogeneity in the probability of recurrent spells among individuals. Of equal importance is the fact that there is far from a perfect correlation between reported spells in 1977 and the likelihood of spell recurrence in 1978, and, as previously indicated, 2 years of data may be insufficient to truly assess the issue of spell recurrence. It may be noted that youth age 16 to 24 who had two or more spells in 1977 were somewhat more likely than their adult counterparts to report two or more spells in 1978; this was especially true for persons age 20 to 24.

Men with multiple jobless spells in 1977 were more likely than women to have multiple spells in 1978, and this difference in probabilities tends to increase with age. However, regardless of sex and age, the probability of two or more spells in 1978 is positively related to the number of spells in 1977.[17]

Table 4 shows the experience of persons 16 to 24 years of age by their major activity classification in March 1978. Persons 16 to 19 whose major activity was school were less likely to report having any spells in 1978 (recall that this does not necessarily mean they had no unemployment), regardless of the number of spells in 1977. There is no clear difference in this probability among 20- to 24-year-olds. Individuals age 16 to 19 whose major activity was other than school and who experienced two or more jobless spells in 1977 were just slightly more prone to report multiple spells again in 1978 compared to the school group. However, this difference was not very large.

The data in tables 3 and 4 do indicate some correlation between repeat spells in 1977 and spells in 1978, but the significance of this relationship is unclear. Differences in the probability of recurrent spells between youth and adults are not large, but the fact that one must have had some work experience in 1977 in order to be asked about jobless spells may introduce a significant bias to this comparison. Thus, while there is some support for the hypothesis that "past turnover is associated with subsequent turnover," the phenomenon does not appear to be pervasive, or to differ greatly among labor force groups.[18]

The concentration of unemployment. Perhaps recurrent, multiple spells of unemployment mask the fundamental nature of youth and other groups' joblessness. Instead, it may be that unemployment is truly concentrated

Table 3. The probability of experiencing recurring spells of unemployment by age and sex, 1977–78

[Numbers in thousands]

Age and spells of unemployment in 1977	Total					Men					Women				
	Number in sample	Probability of experiencing:				Number in sample	Probability of experiencing:				Number in sample	Probability of experiencing:			
		No spells, 1978	One spell, 1978	Two spells, 1978	Three or more spells, 1978		No spells, 1978	One spell, 1978	Two spells, 1978	Three or more spells, 1978		No spells, 1978	One spell, 1978	Two spells, 1978	Three or more spells, 1978
16 to 17 years:															
No spells reported	1,869	0.855	0.098	0.025	0.022	910	0.854	0.091	0.029	0.026	959	0.856	0.104	0.022	0.018
One spell	140	.671	.200	.071	.057	71	.662	.197	.085	.056	69	.681	.203	.058	.058
Two spells	33	.666	.152	.121	.061	24	.667	.167	.125	.042	9	.667	.111	.111	.111
Three or more spells	31	.645	.194	.129	.032	22	.545	.227	.182	.045	9	.889	.111	.000	.000
18 to 19 years:															
No spells reported	1,160	.834	.107	.038	.022	544	.827	.105	.037	.031	616	.839	.109	.039	.013
One spell	193	.684	.212	.021	.083	81	.556	.309	.037	.099	112	.777	.143	.009	.071
Two spells	67	.552	.179	.134	.134	40	.500	.175	.175	.150	27	.630	.185	.074	.111
Three or more spells	56	.661	.268	.000	.071	39	.667	.256	.000	.077	17	.647	.294	.000	.059
20 to 24 years:															
No spells reported	2,552	.876	.092	.018	.015	1,136	.862	.104	.018	.017	1,416	.887	.082	.018	.013
One spell	423	.757	.175	.035	.033	229	.742	.179	.039	.039	194	.773	.170	.031	.026
Two spells	131	.603	.183	.130	.084	87	.575	.207	.126	.092	44	.659	.136	.136	.068
Three or more spells	116	.586	.181	.095	.138	77	.481	.234	.104	.182	39	.795	.077	.077	.051
25 to 54 years:															
No spells reported	17,161	.952	.035	.007	.007	7,958	.951	.034	.008	.007	9,203	.952	.036	.006	.006
One spell	1,164	.717	.194	.054	.034	562	.660	.217	.068	.055	602	.771	.173	.042	.015
Two spells	284	.585	.246	.088	.081	171	.503	.304	.106	.088	113	.708	.159	.062	.071
Three or more spells	236	.593	.203	.072	.131	138	.522	.225	.080	.174	98	.694	.173	.061	.071
55 years and over:															
No spells reported	11,404	.986	.009	.002	.002	4,945	.981	.013	.002	.004	6,459	.990	.007	.002	.001
One spell	227	.797	.126	.048	.026	147	.755	.156	.061	.027	80	.875	.075	.025	.025
Two spells	53	.566	.283	.132	.019	32	.594	.250	.156	.000	21	.524	.333	.095	.048
Three or more spells	48	.583	.167	.063	.188	31	.516	.161	.097	.226	17	.706	.176	.000	.118

Table 4. The probability of experiencing recurring spells of unemployment by age and school status, 1977–1978

[Numbers in thousands]

Age and spells of unemployment in 1977	Major activity: School					Major activity: Other				
	Number in sample	Probability of experiencing:				Number in sample	Probability of experiencing:			
		No spells, 1978	One spell, 1978	Two spells, 1978	Three or more spells, 1978		No spells, 1978	One spell, 1978	Two spells, 1978	Three or more spells, 1978
16 to 17 years:										
No spells reported	1,642	0.859	0.099	0.023	0.019	227	0.828	0.088	0.044	0.040
One spell	110	.736	.173	.064	.027	30	.433	.300	.100	.167
Two spells	25	.680	.160	.120	.040	8	.625	.125	.125	.125
Three or more spells	24	.708	.125	.125	.042	7	.429	.429	.143	.000
18 to 19 years:										
No spells reported	646	.828	.115	.042	.015	514	.850	.097	.033	.029
One spell	83	.745	.229	.000	.024	110	.636	.200	.036	.127
Two spells	20	.650	.150	.100	.100	47	.510	.191	.149	.149
Three or more spells	15	.733	.267	.000	.000	41	.634	.268	.000	.098
20 to 24 years:										
No spells reported	438	.872	.103	.018	.007	2,086	.875	.091	.017	.017
One spell	62	.774	.194	.016	.016	381	.753	.172	.039	.036
Two spells	12	.667	.167	.083	.083	119	.597	.185	.134	.084
Three or more spells	5	.200	.200	.400	.200	111	.603	.180	.081	.135

among persons who suffer very long single spells of unemployment, while most others are unemployed only infrequently or not unemployed at all. To address this question, it is necessary to examine the extent to which the total number of weeks unemployed during a given period is "concentrated" among a small number of people.[19]

Little information is available on this issue, primarily because of the difficulties in obtaining unemployment (and employment) spell histories. The usual approach has been to use data from the March CPS work-experience supplement to measure the extent of unemployment over the previous year. From these data it is possible to calculate the number of weeks of joblessness by duration category as a percent of total reported weeks unemployed for any given labor force group. For example, in 1975, only 4.4 percent of all persons with some labor force experience were unemployed for more than 26 weeks, but this group accounted for almost 52 percent of total weeks unemployed.[20]

The same kind of information by age, sex, race, and major activity is shown in tables 5, 6, and 7 for the years 1974–75, and 1977–78. Again, the data are from the matched CPS files. The calculations are based on the mid-range of the unemployment duration categories. This is a rather simplistic assumption, but it should not affect the relative value of the estimates because it is used consistently. The analysis excludes essentially year-round workers with 1 to 2 weeks unemployment due to temporary layoff, but all other persons who looked for work are included.

As previous research has indicated, the aggregate probability of leaving unemployment tends to decline with time unemployed. The result is an apparent concentration of unemployment in longer duration categories simply because the likelihood of escape from joblessness is lower the longer a spell has lasted. Even if each individual's escape rate were constant over time unemployed, a relatively large share of unemployment would be accounted for by individuals with lower escape probabilities. The data should be interpreted with this in mind.

As expected, the yearly data in table 5 provide clear evidence of over-the-year unemployment concentration, but the degree of concentration varies somewhat by age, sex, and economic conditions. In 1974, the 8.6 percent of the labor force of young men age 16 to 17 who were unemployed more than 14 weeks accounted for 69.3 percent of total weeks unemployed. (The labor force percentages are not shown here, but are available upon request.) Among women of the same age, the numbers were 4.1 and 53.6 percent, respectively. The brief bouts that youth have with unemployment would appear to contribute less to overall unemployment; among 16- to 17-year-old males in 1974, 14.6 percent were jobless less than 5 weeks and accounted for just 12.8 percent of all weeks unemployed. There is a pronounced cyclical pattern to these data. In 1975, both the proportion of the labor force and the percent of total weeks unemployed indicate a sizable shift toward extensive individual total weeks of unemployment. The 1977 and 1978 distributions tend to fall between those for 1974 and 1975.[21]

Table 6 shows similar information by race. With the exception of 16- to 17-year-olds in 1974, both the percent of total weeks unemployed over 14 weeks and the proportion of the labor force jobless for that length of time are higher for black workers. And, once again, cyclical factors clearly operate to lengthen total time out of work: In 1975, fully 23 percent of the labor force of blacks age 18 to 19 were unemployed more than 14 weeks, accounting for 82.7 pecent of total weeks unemployed. For white workers, the figures were 10.5 and 76.7 percent, respectively.

The distributions vary only slightly by major activity (table 7), except among those age 16 to 17, for whom no pattern is apparent. For those 18 to 19 whose major activity was not school, unemployment was more concentrated in long total durations relative to the major activity school group, irrespective of aggregate economic conditions. With the exception of 1977, this was also true among 20- to 24-year-olds.

The data tell a consistent story. Weeks unemployed over the course of a year are highly concentrated and very sensitive to the business cycle. Although the degree of concentration among adults is somewhat more skewed toward longer total time unemployed than among youth, the difference is not very large. However, relating this concentration to the issue of "turnover" depends, in part, on whether lengthy unemployment occurs in one spell or is spread over many spells. Our data show that some persons are unemployed a lot, but this does not necessarily mean that these individuals spend a long time finding a particular job. The observed inequality in the distribution of unemployment could also result if all unemployment were generated by high turnover. Any determination of the importance of turnover requires estimating (simulating) how unequal unemployment would be in a simple economy with high turnover and comparing the results to the observed concentrations.[22]

The following tabulation tries to put this issue into some perspective. The first eight lines indicate the proportion of persons unemployed 15 weeks or longer—generally considered the floor for long-term unemployment—in the indicated year and who also worked, by the number of spells of unemployment reported. (Only data for 1974 and 1977 are shown here, but the results for 1975 and 1978 were similar.) For example, among 16- to 17-year-olds in 1977, 44.4 percent of those with unemployment over 14 weeks reported it all in one spell. (The last two lines of the tabulation show the percentage of people unemployed over 14 weeks who did not work at any time during the indicated year and for whom there is thus no spell information available.)

	Age			
	16 to 17	*18 to 19*	*20 to 24*	*25 and over*
1974:				
Persons with work experience	100.0	100.0	100.0	100.0
1 spell	51.4	40.6	48.2	48.6
2 spells	32.4	36.1	23.7	23.6
3 or more spells	16.2	33.3	28.1	27.7
1977:				
Persons with work experience	100.0	100.0	100.0	100.0
1 spell	44.4	38.6	54.6	62.5
2 spells	28.9	30.1	24.6	19.1
3 or more spells	26.7	31.3	20.8	18.4
Persons with no work experience:				
1974	22.9	12.7	10.1	21.4
1977	26.2	17.0	12.5	13.2

Table 5. Percent distribution of unemployment by duration, sex, and age, selected years, 1974–78

Year and duration of unemployment	Total					Men					Women				
	16 to 17 years	18 to 19 years	20 to 24 years	25 to 54 years	55 years and over	16 to 17 years	18 to 19 years	20 to 24 years	25 to 54 years	55 years and over	16 to 17 years	18 to 19 years	20 to 24 years	25 to 54 years	55 years and over
1974															
1 to 4 weeks	15.2	9.2	7.2	4.8	3.1	12.8	6.8	6.5	3.3	2.4	18.8	12.7	8.2	6.5	3.6
5 to 14 weeks	28.7	27.4	26.6	26.7	18.9	29.4	29.1	28.6	27.0	17.9	27.8	25.1	24.3	26.4	17.9
15 to 26 weeks	19.3	24.6	30.9	30.1	24.7	27.7	22.9	29.0	32.5	27.5	24.0	27.0	33.2	27.2	18.0
27 to 39 weeks	16.8	24.5	21.6	21.0	24.7	17.4	25.6	24.8	20.3	24.3	16.1	22.9	17.8	21.9	22.1
40 to 52 weeks	19.9	14.5	13.6	17.3	34.4	24.2	15.6	11.1	16.8	27.9	13.5	12.8	16.5	18.0	38.5
1975															
1 to 4 weeks	7.1	4.8	3.3	2.6	1.9	5.1	3.4	2.2	1.8	1.4	9.7	7.0	5.0	3.6	2.6
5 to 14 weeks	17.3	20.3	14.7	17.6	11.3	19.3	20.4	14.6	18.1	12.3	14.6	20.2	15.0	17.0	9.6
15 to 26 weeks	23.7	22.9	25.8	27.2	27.3	24.5	23.3	27.2	31.2	30.8	22.7	22.3	23.7	22.6	22.0
27 to 39 weeks	20.6	20.6	20.6	20.7	22.2	21.3	23.3	22.2	20.1	17.8	19.7	16.3	18.2	19.4	28.8
40 to 52 weeks	31.3	31.4	35.5	31.9	37.4	29.7	29.6	33.8	28.9	37.8	33.3	34.1	38.1	35.3	36.8
1977															
1 to 4 weeks	11.2	8.4	4.9	3.8	1.8	8.5	6.7	3.5	2.7	1.9	15.9	10.4	6.9	5.1	1.7
5 to 14 weeks	27.7	25.9	23.7	22.1	15.2	25.0	24.3	22.9	21.3	14.5	32.3	27.7	25.0	23.0	16.3
15 to 26 weeks	15.4	25.3	31.1	32.5	23.1	18.4	26.2	32.2	37.1	22.6	10.4	24.3	29.2	27.6	23.8
27 to 39 weeks	19.7	20.4	10.1	22.8	26.0	23.0	21.1	18.1	21.3	26.2	14.0	19.5	18.0	24.4	25.6
40 to 52 weeks	26.0	20.0	22.2	18.8	33.9	25.2	21.6	23.2	17.7	34.7	27.3	18.2	20.8	20.0	32.7
1978															
1 to 4 weeks	8.1	6.1	4.3	3.6	1.9	6.6	4.5	3.5	2.6	1.8	10.6	8.6	5.2	4.7	2.1
5 to 14 weeks	21.4	26.4	18.6	24.2	22.2	15.4	23.4	16.8	26.2	22.6	31.0	30.6	20.8	22.1	20.7
15 to 26 weeks	26.1	27.6	34.4	30.9	22.8	26.8	29.5	33.8	35.3	23.5	25.1	25.2	35.1	26.2	20.7
27 to 39 weeks	18.1	15.8	20.4	19.9	21.5	18.9	15.0	25.9	15.2	19.4	16.8	16.9	13.3	24.8	24.6
40 to 52 weeks	26.2	24.0	22.4	21.5	31.7	32.2	27.8	19.9	20.7	31.0	16.4	18.8	25.5	22.3	31.8

Table 6. Percent distribution of unemployment by duration, race, and age, selected years, 1974–78

Year and duration of unemployment	White					Black and other				
	16 to 17 years	18 to 19 years	20 to 24 years	25 to 54 years	55 years and over	16 to 17 years	18 to 19 years	20 to 24 years	25 to 54 years	55 years and over
1974										
1 to 4 weeks	15.0	10.0	7.3	4.8	2.8	16.4	5.9	7.0	4.7	3.9
5 to 14 weeks	26.4	29.2	27.2	27.9	19.0	43.4	19.7	24.0	21.4	10.7
15 to 26 weeks	19.6	27.9	30.7	29.6	22.2	17.6	11.4	31.9	32.7	31.7
27 to 39 weeks	18.0	21.3	22.1	22.3	22.6	9.4	36.6	19.2	14.9	27.8
40 to 52 weeks	20.9	11.5	12.7	15.5	33.5	13.1	25.6	17.9	26.3	25.9
1975										
1 to 4 weeks	7.0	5.3	3.6	2.8	1.8	7.0	3.6	2.1	1.6	2.3
5 to 14 weeks	17.5	22.8	15.9	18.5	11.3	18.1	13.7	10.1	13.4	10.7
15 to 26 weeks	24.9	25.9	27.3	27.6	26.9	17.4	14.7	19.9	25.1	30.0
27 to 39 weeks	20.7	21.2	22.2	20.9	21.7	20.0	26.7	14.4	19.9	26.0
40 to 52 weeks	29.9	29.6	30.9	30.2	38.3	39.1	41.3	37.9	39.9	31.1
1977										
1 to 4 weeks	11.8	9.6	5.8	4.0	1.8	8.4	5.1	2.3	3.0	2.2
5 to 14 weeks	20.6	29.1	27.0	24.0	14.3	26.9	18.7	14.4	15.3	21.3
15 to 26 weeks	30.4	23.5	33.4	32.8	22.9	14.4	30.7	24.4	31.3	24.0
27 to 39 weeks	23.5	19.4	17.7	23.5	26.0	17.5	23.2	19.1	20.2	25.7
40 to 52 weeks	22.1	18.5	16.1	15.7	35.0	32.6	24.3	39.9	30.3	26.9
1978										
1 to 4 weeks	8.7	7.2	5.0	4.0	1.9	6.0	3.4	2.3	2.1	2.0
5 to 14 weeks	22.9	29.4	20.4	26.3	22.9	16.0	18.4	13.3	16.1	18.7
15 to 26 weeks	23.9	28.0	36.7	31.9	23.0	34.4	26.5	27.8	26.9	21.4
27 to 39 weeks	20.5	17.7	20.7	19.7	22.7	9.2	10.7	19.6	20.6	15.3
40 to 52 weeks	24.0	17.8	17.2	18.1	29.5	34.3	40.9	37.0	34.3	42.6

The results are interesting, in part because of the differences between years. In 1977, teenagers who worked and who experienced extensive unemployment were more likely than persons over age 20 to have been jobless two or more times; in addition, a larger fraction of teenagers than of others did not work at all and experienced more than 14 weeks of unemployment. On the other hand, the data for 1974 show little difference in spell proportions except for 18- to 19-year-olds. For example, among 16- to 17-year-olds who worked in 1974, 48.6 percent of those with at least 15 total weeks of unemployment had two or more spells compared to 51.3 percent for adults 25 years of age and older. The proportion with no work experience was little different between adults and 16- to 17-year-olds, although a much smaller percentage of those age 18 to 24 reported no work experience. While a sizable proportion of long duration unemployment is accounted for by persons who had no work experience during the year, the data do suggest that it is hazardous to conclude that a large majority of workers with a lot of unemployment incur it in one long spell.

It is very useful to know that, in a single year, joblessness is concentrated among a small proportion of the labor force who are unemployed a lot, although not necessarily in a single spell. However, it is quite another matter to infer that the same individuals experience persistent, lengthy periods of unemployment year after year. In the next section, we use CPS data to gain some additional perspective on this issue.

Table 7. Percent distribution of unemployment by duration, school status, and age, selected years, 1974–78

Year and duration of unemployment	Major activity: School			Major activity: Other		
	16 to 17 years	18 to 19 years	20 to 24 years	16 to 17 years	18 to 19 years	20 to 24 years
1974						
1 to 4 weeks	17.7	18.6	15.6	6.6	5.8	6.3
5 to 14 weeks	27.4	38.8	36.4	33.5	23.2	25.5
15 to 26 weeks	19.7	22.1	22.9	18.1	25.5	31.8
27 to 39 weeks	16.7	10.7	10.5	17.5	29.5	22.9
40 to 52 weeks	18.6	9.9	14.7	24.3	16.1	13.4
1975						
1 to 4 weeks	7.0	8.0	9.2	7.4	3.0	2.5
5 to 14 weeks	16.7	22.9	28.3	20.7	18.9	13.0
15 to 26 weeks	22.9	25.8	36.7	28.2	21.3	24.4
27 to 39 weeks	20.2	19.1	14.1	22.7	21.5	18.6
40 to 52 weeks	33.2	24.2	11.8	21.0	35.4	38.6
1977						
1 to 4 weeks	12.9	13.1	10.1	6.3	6.3	4.3
5 to 14 weeks	30.2	27.7	29.9	20.7	25.1	23.0
15 to 26 weeks	14.8	29.1	16.6	17.3	23.7	32.7
27 to 39 weeks	16.8	19.7	26.7	27.9	20.7	17.1
40 to 52 weeks	25.3	10.3	16.6	27.8	24.3	22.9
1978						
1 to 4 weeks	9.4	8.5	12.1	3.7	4.2	3.4
5 to 14 weeks	21.1	36.2	21.9	22.6	28.4	18.2
15 to 26 weeks	22.5	23.3	28.0	39.4	31.0	35.2
27 to 39 weeks	20.6	14.7	13.9	9.1	16.7	21.2
40 to 52 weeks	26.4	29.6	24.1	25.3	19.6	22.1

Is current status linked with past unemployment?

If the observed concentration of unemployment is more than a statistical anomaly in information for single years, one would expect data from the 2-year CPS matched samples to corroborate the following two hypotheses: First, the more weeks an individual is unemployed in one year, the higher is his or her probability of experiencing some unemployment the subsequent year. Second, a worker with extensive unemployment

Table 8. Weeks of unemployment in 1974 and 1977 and the probability of experiencing unemployment during the subsequent year, by sex, race, and age

Sex, race, age, and weeks of unemployment in 1975 or 1978	Probability of experiencing unemployment in 1975 based on weeks of unemployment in 1974				Probability of experiencing unemployment in 1978 based on weeks of unemployment in 1977			
	Less than 5 weeks	5 to 14 weeks	15 weeks and over	27 weeks and over	Less than 5 weeks	5 to 14 weeks	15 weeks and over	27 weeks and over
Total								
16 to 17 years:								
1 or more weeks	0.316	0.402	0.375	0.500	0.301	0.355	0.459	0.432
15 weeks and over	.103	.182	.146	.250	.081	.118	.230	.216
18 to 19 years:								
1 or more weeks	.349	.455	.481	.621	.320	.395	.530	.522
15 weeks and over	.109	.178	.291	.379	.102	.118	.250	.281
20 to 24 years:								
1 or more weeks	.319	.480	.573	.603	.229	.320	.442	.487
15 weeks and over	.124	.246	.393	.414	.081	.240	.299	.360
25 to 54 years:								
1 or more weeks	.318	.445	.502	.524	.284	.324	.426	.438
15 weeks and over	.136	.251	.361	.382	.081	.102	.270	.309
55 years and over:								
1 or more weeks	.203	.327	.397	.385	.200	.234	.325	.303
15 weeks and over	.125	.202	.319	.295	.051	.102	.198	.187
Men								
16 to 17 years:								
1 or more weeks	.308	.404	.429	.625	.265	.340	.512	.480
15 weeks and over	.128	.191	.250	.375	.074	.108	.279	.280
18 to 19 years:								
1 or more weeks	.464	.508	.478	.652	.397	.500	.518	.539
15 weeks and over	.196	.190	.283	.435	.175	.120	.298	.268
20 to 24 years:								
1 or more weeks	.360	.570	.663	.606	.226	.342	.448	.478
15 weeks and over	.151	.290	.488	.455	.067	.139	.326	.363
25 to 54 years:								
1 or more weeks	.374	.503	.543	.569	.294	.383	.485	.516
15 weeks and over	.180	.277	.412	.431	.084	.113	.314	.387
55 years and over:								
1 or more weeks	.267	.356	.389	.333	.289	.290	.346	.329
15 weeks and over	.167	.220	.298	.262	.053	.120	.223	.224
Women								
16 to 17 years:								
1 or more weeks	.325	.400	.300	.250	.333	.375	.333	.333
15 weeks and over	.078	.167	.000	.000	.107	.087	.111	.250
18 to 19 years:								
1 or more weeks	.260	.368	.485	.500	.282	.289	.500	.500
15 weeks and over	.041	.158	.303	.286	.048	.102	.227	.250
20 to 24 years:								
1 or more weeks	.275	.352	.508	.600	.231	.260	.431	.500
15 weeks and over	.099	.183	.308	.360	.085	.111	.255	.357
25 to 54 years:								
1 or more weeks	.282	.372	.448	.472	.246	.285	.356	.364
15 weeks and over	.109	.218	.294	.326	.074	.081	.218	.226
55 years and over:								
1 or more weeks	.147	.289	.439	.444	.048	.170	.293	.261
15 weeks and over	.088	.178	.351	.333	.048	.075	.159	.152
White								
16 to 17 years:								
1 or more weeks	.311	.393	.395	.545	.282	.351	.440	.433
15 weeks and over	.098	.180	.233	.409	.080	.221	.360	.367
18 to 19 years:								
1 or more weeks	.339	.419	.444	.600	.306	.364	.493	.489
15 weeks and over	.098	.151	.286	.360	.089	.111	.217	.250
20 to 24 years:								
1 or more weeks	.294	.455	.573	.604	.205	.313	.448	.479
15 weeks and over	.101	.221	.363	.396	.076	.128	.299	.352
25 to 54 years:								
1 or more weeks	.330	.446	.504	.515	.254	.341	.428	.448
15 weeks and over	.135	.242	.367	.382	.060	.067	.265	.320
55 years and over:								
1 or more weeks	.189	.354	.400	.397	.180	.229	.339	.306
15 weeks and over	.113	.219	.325	.309	.040	.105	.194	.185

Table 8. Continued—Weeks of unemployment in 1974 and 1977 and the probability of experiencing unemployment during the subsequent year, by sex, race, and age

Sex, race, age, and weeks of unemployment in 1975 or 1978	Probability of experiencing unemployment in 1975 based on weeks of unemployment in 1974				Probability of experiencing unemployment in 1978 based on weeks of unemployment in 1977			
	Less than 5 weeks	5 to 14 weeks	15 weeks and over	27 weeks and over	Less than 5 weeks	5 to 14 weeks	15 weeks and over	27 weeks and over
Black and other								
16 to 17 years:								
1 or more weeks	.348	.438	.000	.000	.421	.375	.545	.429
15 weeks and over	.130	.188	.000	.000	.105	.188	.545	.143
18 to 19 years:								
1 or more weeks	.412	.667	.625	.583	.391	.550	.581	.643
15 weeks and over	.176	.333	.313	.417	.174	.150	.323	.286
20 to 24 years:								
1 or more weeks	.483	.538	.577	.600	.400	.357	.425	.500
15 weeks and over	.241	.385	.538	.500	.200	.190	.301	.375
25 to 54 years:								
1 or more weeks	.258	.440	.494	.559	.311	.290	.420	.405
15 weeks and over	.145	.307	.333	.382	.149	.130	.287	.278
55 years and over:								
1 or more weeks	.272	.000	.381	.300	.333	.261	.231	.071
15 weeks and over	.182	.000	.286	.200	.111	.087	.231	.286

one year is more likely to encounter the same prospect the next year.

Tables 8 and 9 provide information relevant to these hypotheses.[23] They show the probability that persons had at least 1 week or more than 14 weeks of joblessness in 1975 or 1978 by the length of time unemployed during the previous year (1974 or 1977). For example, table 8 shows that, for those age 16 to 17 who were unemployed 1 to 4 weeks in 1974, the probability of having at least 1 week of unemployment in 1975 was .316.

With virtually no exception, persons unemployed longer in one year have a higher probability of having some joblessness during the next year. Moreover, long-term unemployment (a total of 15 weeks or more) during one year is associated with a higher probability of extensive total joblessness during the subsequent year. There appear to be some age-related differences in these probabilities, but they are not so large or persistent that they show up in each data set. However, this unemployment persistence does seem to be slightly greater among those age 18 to 24 than among adults or young teenagers. There is also a cyclical pattern in the unemployment probabilities; that is, regardless of time unemployed during 1974, individuals had a higher probability of 15 weeks or more of joblessness in 1975 than during the recovery-expansion years of 1977–78. Once again, this underscores the critical importance of the business cycle in understanding unemployment duration.

Blacks and whites exhibit the same general pattern as all workers in these age categories. However, except among 16- to 17-year-old employed blacks (for whom

Table 9. Weeks of unemployment in 1974 and 1977 and the probability of experiencing unemployment during the subsequent year, by school status and age

School status, age, and weeks of unemployment in 1975 or 1978	Probability of experiencing unemployment in 1975 based on weeks of unemployment in 1974				Probability of experiencing unemployment in 1978 based on weeks of unemployment in 1977			
	Less than 5 weeks	5 to 14 weeks	15 weeks and over	27 weeks and over	Less than 5 weeks	5 to 14 weeks	15 weeks and over	27 weeks and over
Major activity: School								
16 to 17 years:								
1 or more weeks	0.321	0.404	0.351	0.444	0.295	0.307	0.489	0.320
15 weeks and over	.107	.211	.162	.278	.090	.093	.143	.080
18 to 19 years:								
1 or more weeks	.348	.368	.333	.400	.214	.333	.600	.545
15 weeks and over	.058	.132	.133	.200	.071	.103	.200	.091
20 to 24 years:								
1 or more weeks	.256	.500	.273	.250	.267	.314	.500	.615
15 weeks and over	.051	.083	.000	.000	.022	.143	.273	.308
Major activity: Other								
16 to 17 years:								
1 or more weeks	.267	.400	.455	.667	.330	.555	.684	.667
15 weeks and over	.067	.100	.091	.167	.095	.222	.421	.333
18 to 19 years:								
1 or more weeks	.350	.508	.516	.656	.416	.425	.457	.514
15 weeks and over	.167	.206	.328	.406	.130	.125	.271	.314
20 to 24 years:								
1 or more weeks	.333	.476	.587	.630	.218	.321	.436	.489
15 weeks and over	.145	.272	.425	.444	.109	.137	.308	.367

the very small sample makes data interpretation hazardous), blacks unemployed in 1974 or 1977 were somewhat more likely than whites to experience unemployment in 1975 or 1978. And blacks who were jobless at least 15 weeks in either 1974 or 1977 had a somewhat higher probability than whites of experiencing extensive unemployment during the subsequent year.

Table 9 shows that 18- to 24-year-olds whose major activity was not school, and who had more than 14 weeks of unemployment in 1974 or 1977, were only marginally more likely than their student counterparts to experience long periods of unemployment in the following year. For example, 30.6 percent of those age 20 to 24 whose major activity was other than school and who were unemployed more than 14 weeks in 1977 had long-term unemployment in 1978, compared to 27.3 percent among the school group. However, these differences are related, at least in part, to the business cycle; the differences in probabilities are much greater for 1974–75 than for 1977–78.

The foregoing analysis does suggest that unemployment is concentrated, in the sense that there is an association between past and subsequent unemployment over a 2-year period for the persons in this sample. However, determination of a strict causal relationship, or of influences, other than the business cycle, on the labor supply and demand schedules underlying the association is beyond the scope of this study.[24] Nor have we advanced any hypothesis about what constitutes a substantively significant degree of persistence. These are subjects for further research.[25] □

FOOTNOTES

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[1] A critique of much of the relevant literature is contained in Norman Bowers, "Young and marginal: an overview of youth employment," *Monthly Labor Review*, October 1979, pp. 4-16. A turnover perspective and an implicit critique of that approach can be found in Jacob Mincer and Linda Leighton, "Labor Turnover and Youth Unemployment," and Kim Clark and Lawrence Summers, "The Dynamics of Youth Unemployment," in Richard Freeman and David Wise, eds., *The Youth Unemployment Problem: Its Nature, Causes, and Consequences* (Chicago, University of Chicago Press, 1981). Also see Joseph Antos and Wesley Mellow, "The Youth Labor Market: A Dynamic Overview," BLS Staff Paper 11 (Bureau of Labor Statistics, 1979).

[2] For example, this article will not discuss the potential impact of unemployment on subsequent wages (and growth in wages) or career prospects. See Brian E. Becker and Stephen M. Hills, "Teenage Unemployment: Some Evidence of the Long Run Effects on Wages," *Journal of Human Resources*, Summer 1980, pp. 354–72; David Ellwood, "Teenage Unemployment: Permanent Scars or Temporary Blemishes," in Richard Freeman and David Wise, eds., *The Youth Unemployment Problem: Its Nature, Causes, and Consequences* (Chicago, University of Chicago Press, 1981); and Paul Osterman, *Getting Started: The Youth Labor Market* (Cambridge, Mass., MIT Press, 1980).

[3] See *The Current Population Survey: Design and Methodology*, Technical Paper 40 (Bureau of the Census, 1978).

[4] For a discussion of matched data from the CPS, see *Using the Current Population Survey as a Longitudinal Data Base*, Report 608 (Bureau of Labor Statistics, 1980); Daniel Glazer, "A micro-data approach to the Current Population Survey," *Monthly Labor Review*, February 1979, pp. 46–48; and Terence Kelly, "The Creation of Longitudinal Data from Cross-Section Surveys: An Illustration from the Current Population Survey," *Annals of Economic and Social Measurement*, April 1973, pp. 209–14.

[5] See Robert Aquilino, "Methods Test Phase III: Third Report on the Accuracy of Retrospective Interviewing and Effects of Change in Respondent on Labor Force Data," Memo, Bureau of the Census, Apr. 2, 1971. Also see Dale Morgenstern and Nancy Barrett, "The Retrospective Bias in Unemployment Reporting by Sex, Race and Age," *Journal of the American Statistical Association*, June 1974, pp. 355–57.

[6] See James Heckman, "Sample Selection Bias as a Specification Error," Working Paper No. 172 (Cambridge, Mass., National Bureau of Economic Research, 1977), pp. 1–55; and G. S. Maddala, "Self-Selectivity Problems in Econometric Models," in P. Krishniah, ed., *Applications of Statistics* (Amsterdam, North Holland Publishing Co., 1977). An example of selectivity bias from CPS matched data is included in Francis W. Horvath, "Tracking individual earnings mobility with the Current Population Survey," *Monthly Labor Review*, May 1980, pp. 43–46.

[7] See Barbara Bailar, "The Effects of Rotation Group Bias on Estimates from Panel Surveys," *Journal of the American Statistical Association*, March 1975, pp. 23–30; Barbara Bailar and Camilla Brooks, "An Error Profile: Employment as Measured by the Current Population Survey," report prepared for the Federal Committee on Statistical Methodology, Subcommittee on Nonsampling Errors, 1978; and Philip McCarthy, "Some Sources of Error in Labor Force Estimates from the Current Population Survey," Background Paper 15 (National Commission on Employment and Unemployment Statistics, 1978), pp. 62–76.

[8] The data supporting these assertions are available from the author upon request.

[9] See George Perry, "Unemployment Flows in the U.S. Labor Market," *Brookings Papers on Economic Activity, 2*, 1972, pp. 245–78; Jacob Mincer and Linda Leighton, "Labor Turnover and Youth Unemployment"; and Robert Frank and Richard Freeman, "The Distribution of the Unemployment Burden: Do the Last Hired Leave First?" *Review of Economics and Statistics*, August 1978, pp. 380–91. Note that our concern is with differences across groups. Discussion of the concentration and persistence of unemployment within groups will be analyzed later in the article. The age breaks used for this study were chosen to allow for some examination of differences between adults and various youth groups. For example, those age 16 to 17 tend to be in school; school activity drops off considerably with age. Therefore, one might expect different labor force experience between (say) 16- to 17-year-olds and those age 20 to 24 who are more likely to be in the process of establishing themselves in the full-time labor market. It is also important to understand how age was defined in this paper. From the March 1975-March 1976 matched file, individuals were classified on the basis of their age as of March 1975. From the March 1978-March 1979 file the age classification related to March 1978. Therefore, we are not comparing the behavior of 16- to 17-year-olds in 1974 with the behavior of 16- to 17-year-olds in 1975. Rather, we are following the same individuals over the entire 2-year time span for which data are available from each matched file, but to simplify the tabular presentation, age is taken as fixed as of March 1975 or March 1978.

[10] The incidence of unemployment over the 2-year period is less than twice the average incidence because some people experienced unemployment during both years. There are two possible reasons for this: First, the experience of unemployment in one year increases the probability of having some unemployment the next year. And, second, individuals may have constant (over time) but different probabilities of becoming unemployed, and those with higher probabilities are more likely to be jobless at any time. For a discussion of "sorting" and "tenure dependence," see Stephen W. Salant, "Search Theory and Duration Data: A Theory of Sorts," *Quarterly Journal of Economics*, February 1977, pp. 39–57; A. McGregor, "Unemployment Duration and Re-employment Probability," *Economic Journal*, December 1978, pp. 693–706; and John Barron and Wesley Mellow, "Changes in Labor Force Status Among the Unemployed," *Journal of Human Resources*, Summer 1981, pp. 427–41.

[11] It is important to understand the meaning of the "major activity" classification. The very first item posed to the household respondent for each young person in the CPS sample is: "What was (person's name) doing most of last week, going to school or something else?" This is not the same as asking whether the individuals were enrolled or not enrolled in school. For example, there will be persons who are enrolled in school whose major activity is something else. If this group is "more committed" to the labor force, measures of labor force experience by major activity will tend to show more volatility among the school group. Further, the classification refers to specific months —March 1975 and March 1978—and not, as is true of the employment and unemployment data, to an entire year. Changes in one's major activity could have occurred in the months between March 1975–76 and between March 1978–79. Any differences exhibited between major activity status cannot necessarily be taken as an indication of a causal relation.

[12] There is some evidence from the CPS that the proportion of black male youth with any employment experience in a given year has fallen significantly. No discernible trend is evident for whites. See Norman Bowers, "Young and Marginal," p. 9.

[13] Differences in the unemployment and employment experience of the major activity groups have suggested to some analysts that one's "student status" is an important explanatory variable for many young persons' partial commitment to the job market. Whether school activity is a cause, effect, or involves reciprocal interaction, however, is open to some dispute. Much more about the school-work relation, the role of youth labor in the economy, and changes in that role over time, as well as the functions of the educational system and its connection to the economy would first have to be specified before any causal statement could be made with confidence. See Robert Lerman, "Some Determinants of Youth School Activity," *Journal of Human Resources*, Summer 1972, pp. 366–83; and Paul Osterman, "Understanding Youth Unemployment," *Working Papers for a New Society*, January–February 1978, pp. 58–63.

[14] This view is particularly associated with the work of Kim Clark and Lawrence Summers, "The Dynamics of Youth Unemployment."

[15] An analysis of recurrent spells among three age cohorts in Great Britain may be found in Richard Disney, "Recurrent Spells and the Concentration of Unemployment in Great Britain," *Economic Journal*, March 1979, pp. 109–19.

[16] The small cell sizes in many cases make interpretation of the probability calculations very difficult. Therefore, rather than a finely detailed dissection of the data, focus will be on a few general features.

[17] Black-white differences—not shown here—exhibited no detectable pattern, a fact perhaps affected by the sample selectivity involved; that is, although blacks reported more unemployment than whites, they were less likely to have had any work experience during 1977 and therefore spell information was not collected.

[18] We also examined whether there was an association between the reporting of multiple spells and an individual's industry of longest job during the previous year. Especially among adults, the percent with two or more spells whose industry of longest job was in construction was quite a bit higher than the proportions in other major industries. This association also held—though not as strongly—for those age 20 to 24. Not surprisingly, those teenagers with multiple spells were not disproportionately concentrated in any industry. Note, however, that "industry of longest job" in the past year is not necessarily the only industry in which individuals worked over the year, nor does it necessarily indicate working for the same employer.

[19] See Kim Clark and Lawrence Summers, "The Dynamics." Robert Frank and Richard Freeman, in "The Distribution of the Unemployment Burden," also make the point that spell length may be more important in explaining differences in unemployment within the youth group than differential turnover or spell frequency.

[20] See Norman Bowers, "Probing the issues of unemployment duration," *Monthly Labor Review*, July 1980, p. 30.

[21] Among adults who had some work experience, those whose longest job over a given year was in construction were more likely than others to experience 15 or more weeks of unemployment. This association was much weaker among teenagers. As would also be expected, the proportion of workers with more than 14 weeks of unemployment in a year tended to be greater across all major industry groups in 1975 than in other years. Again, this represents the importance of the business cycle in understanding length of time spent looking for work.

[22] See Robert Lerman, "The Nature of the Youth Employment Problem: A Review Paper," prepared for the Vice President's Task Force on Youth Employment, Nov. 26, 1979, pp. 28–29.

[23] Data in these tables do not necessarily show causality because of the problem of distinguishing heterogeneity and state dependence. One attempt to test for heterogeneity or duration dependence among a sample of unemployed workers is discussed in A. McGregor, "Unemployment Duration," pp. 693–706. One might buttress the results shown in the tables with regression analysis. However, simply correlating current with previous unemployment does not necessarily isolate the impact of previous unemployment if some people—because of institutional and personal characteristics—are more prone to experience unemployment; and, such characteristics need not be observable. In part, this issue revolves around the questions of "adjusting or controlling" for heterogeneity among individuals in the likelihood of experiencing unemployment, and sample selection bias. Of course, a number of ways have been proposed to handle this problem, but their adequacy rests heavily upon the existence of a well-specified theory of unemployment and the "goodness of fit" in transforming the theoretical concepts into their testable empirical counterparts, and, equally important, having a correct theory of censored samples in order to adjust for selectivity bias, assuming that one believes the issue to be important to understanding unemployment. Because of the much fuller treatment that these questions deserve, no attempt was made to go beyond the tabulations shown in the text. For one example of this type of approach, see James J. Heckman and George J. Borjas, "Does Unemployment Cause Further Unemployment? Definitions, Questions and Answers from a Continuous Time Model of Heterogeneity and State Dependence," *Economica*, August 1980, pp. 247–83.

[24] One could undoubtedly list many "factors" which might be associated with extensive joblessness, such as kinds of jobs held, wages, family income, education, and so forth. No attempt has been made here to disaggregate the data into such cells because, especially among youth, the sample sizes are simply too small.

[25] Although not shown here, it should also be noted that there is evidence from the matched files that length of time worked in one year is strongly and positively associated with the probability of working again the following year. There are also some important differences among demographic groups. Black workers, particularly teenagers, are less likely than whites to have had any employment experience at all and less likely to have had subsequent employment regardless of the number of weeks worked the previous year. This is a result both of young blacks' higher probability of experiencing an employment separation and, once separated, the greater difficulty they have in finding a job. There are also differences in "persistence" between the major activity groups: The school group's current working experience is somewhat less related to weeks worked during the past year compared to the other group.

Unemployment insurance laws: changes enacted during 1981

All States tightened work requirements; most adopted a variety of options to the pension offset provision, and a few imposed a 1-week waiting period

DIANA RUNNER

All States enacted legislation last year tightening eligibility for extended unemployment insurance benefits, in accordance with the Federal Budget Reconciliation Act of 1980. "Suitable work" requirements were added, and workers filing an interstate claim no longer are eligible for more than 2 weeks of extended benefits if an extended benefit period is not in effect for the week in the State where the claim is filed.

Sixteen States enacted a compensable waiting week requirement for regular unemployment insurance claims so they can be reimbursed for 50 percent of the Federal share of the first week of extended benefits payable to an individual.[1]

Most States have changed their pension offset provision to reflect the variety of options available under the Federal law. Variations are as follows: 26 States offset a pension only if the pension or retired pay, annuity or similar periodic payment is under a plan maintained (or contributed to) by a base period or chargeable employer;[2] 21 States permit benefits to be reduced on less than a dollar-for-dollar basis by taking into consideration the amount of contributions made by the individual for the pension;[3] 15 States disregard pension payments if the base-period employment did not affect eligibility for or increase the amount of the pension;[4] however, excluded from this exemption are pensions paid under the Social Security Act and the Railroad Retirement Act.

The following is a summary of some significant changes in State unemployment insurance laws during 1981.

Arizona

Benefits. Established a permanent voluntary work-sharing program, if it is agreed to by the employer and union and approved by the State agency.

Coverage. The exclusion from coverage of aliens performing agricultural labor will continue until their status changes under the Federal law.

Disqualification. The disqualification for misconduct was changed from a flat period beginning with the week following the filing of a claim plus 10 weeks with benefits reduced by eight times the weekly benefit amount to a duration disqualification and until the individual earns five times the weekly benefit amount.

Administration. The time period for appealing an appeals board decision to the court of appeals was decreased from 35 to 30 days.

Arkansas

Benefits. The qualifying wages were changed from 30 times the weekly benefit amount earned in two quarters of the base period to 30 times high-quarter wages divided by 26 and earn-

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ings in two quarters. An individual's weekly benefit amount will be computed as 1/52 of his or her total wages for insured work in the two highest quarters of the base period and, beginning January 1, 1984, the computation will be 1/26 of total wages during the high-quarter of the base period. From July 1, 1981, to January 1, 1984, the minimum weekly benefit amount will be increased from $15 to $31 and the maximum weekly benefit amount will be frozen at $136. From January 1, 1984, through June 30, 1984, the maximum weekly benefit amount will be determined as 66-2/3 percent of the State average weekly wage for insured employment during 1982 and the minimum weekly benefit amount will be determined as 15 percent of the statewide average weekly wage during 1982. A temporary requalification requirement was added until December 31, 1983, providing that an individual may not requalify for benefits in a second benefit year unless he or she has wages of at least 30 times the weekly benefit amount and wages in at least two quarters of the base period and, subsequent to filing the claim establishing his or her previous benefit year, has been paid wages equal to 10 (formerly 6) times his weekly benefit amount.

Disqualification. Until December 31, 1983, the maximum potential benefits of an individual who is disqualified because of misconduct in connection with work or for failure to apply for or accept suitable work, will be reduced by an amount equal to eight times the weekly benefit amount, but benefit duration may not be reduced to less than 1 week. Also, until January 1, 1984, an individual who voluntarily left a base-period employer without good cause will have the base-period wages paid by that employer reduced by 25 percent. The weekly benefit amount, maximum benefit amount, and potential duration of benefits will be determined accordingly, but the maximum benefit entitlement may not be reduced to less than the weekly benefit amount. In addition to the 14 weeks of disqualification which apply to an individual who makes a false statement or misrepresentation, a disqualification of 3 weeks (formerly 2) will be imposed for each week of falsification.

Financing. The taxable wage base for 1982 and 1983 was increased from $6,000 to $6,900 and for 1984 and the following years, reduced to $6,000. The level of the stabilization tax will depend on the solvency of the fund and may range from 0.1 to 0.5 percent. The range of rates for positive-balance employers will be 0.7 to 3.3 percent and negative-balance employer rates will be 5.5 percent for 1982 and 6.0 percent for 1983 and subsequent years. The prohibition against charging an employer for benefits paid when the base-period wage credits represent regular part-time employment and the claimant continues in that employment during the period for which benefits are paid was repealed.

Administration. The period in which an overpayment may be recovered or deducted from future benefits was increased from 1 to 2 years. A judicial review of unemployment compensation cases will now be taken to the court of appeals rather than the circuit court.

Colorado

Coverage. An individual in the employ of a corporation of which he or she is the majority or controlling shareholder and an officer is excluded from coverage.

Disqualification. A Head Start program that is not a part of a school administered by a board of education is excluded from the definition of "educational institution" for purposes of applying the between-terms denial because the Head Start employees are not subject to the same employment conditions as other employees of the school. An individual's weekly benefit amount will not be reduced if he or she is receiving military service-connected disability benefits paid by the Veterans' Administration, but will be reduced because of receiving a military disability retirement pension based on the previous work of the individual.

Penalties. The penalty for fraud was amended to require an individual who received benefits through fraudulent misrepresentation to repay 1½ times the benefits received. Formerly, an individual was required to repay only the weekly benefit amount he received.

Financing. Benefits paid that will be charged against the fund and not against an employer's account will also include combined wage claims in which Colorado wages are transferred to another State. Also, benefits may be noncharged if an individual was disqualified for voluntary leaving and misconduct.

Administration. The local Government Advisory Council was abolished.

Connecticut

Disqualification. Conduct constituting larceny in the third degree was added to the definition of misconduct.

Financing. If the administrator finds than an individual's most recent separation from a base-period employer results in disqualification for leaving work to study or voluntary retirement, benefits will not be charged, provided the employer filed a notice for appeal.

Administration. The name of the appeals division was changed from the Unemployment Commission to the Employment Security Appeals Division and the second-stage appeal body was changed from a commission to a board. The Rural Manpower Services Advisory Council was abolished.

Delaware

Benefits. Dismissal payments which the employing unit is not legally required to make and holiday pay were included in the definition of wages. The computation of the weekly benefit amount was changed from 1/26 of total wages during the high quarter to 1/104 of the individual's total wages during the base period. The change in the computation of the maximum weekly benefit amount from 63 to 66-2/3 percent of the State average weekly wage was delayed from 1981 to 1983. The seasonal provisions of the law were deleted.

Financing. The contribution rate was increased from 5 to 7 percent and no employer's basic assessment rate will be less than 6.3 percent (formerly 2.7) unless all previous assessments have been paid.

Florida

Benefits. The maximum weekly benefit amount was increased from $105 to $125.

Disqualification. An individual will be disqualified for any week the unemployment is because of a suspension for misconduct connected with work or is because of a leave of absence, if the leave was voluntarily initiated by the individual.

Administration. The Advisory Council was extended until October 1, 1987, and the members of the council shall be appointed by the Secretary of the Department of Labor and Employment Security (formerly appointed by division).

Georgia

Benefits. The maximum weekly benefit amount was increased from $90 to $115. The seasonal provisions of the law were deleted.

Coverage. The exclusion of services performed by participants in Comprehensive Employment and Training Act/Public Service Employment programs will not apply if the State's unemployment fund is reimbursed for benefits paid from Federal funds provided for that purpose. The exclusion from coverage of aliens performing agricultural labor was extended to January 1, 1982.

Disqualification. The requalifying requirement was amended for purging a disqualification for voluntary leaving and refusal of "suitable work" to require that the wages earned must be in insured work. A duration disqualification for specific misconduct discharges was added, with requalification earnings of eight times the weekly benefit amount in bona fide work. The duration disqualification will apply if the individual was discharged for intentional conduct which resulted in physical assault, bodily injury, or property loss or damage amounting to $2,000, theft, sabotage, embezzlement, or falsification of an employer's records.

Administration. The members of an appeals tribunal were changed from referees to administrative hearing officers and the administration of the first level of appeal was transferred from the Board of Review to the commissioner.

Illinois

Benefits. The minimum base-period qualifying wages were increased from $1,400 to $1,600 and the amount that must be earned outside the high quarter was increased from $385 to $440. The base period was changed from the four calendar quarters ending 4 to 7 months before the beginning of the benefit year to the first four of the last five completed calendar quarters immediately preceding the benefit year.

Disqualification. Good cause for voluntary leaving must be for reasons attributable to the employing unit. However, the voluntary leaving disqualification will not apply if an individual is physically unable to work or leaves work to care for a spouse, child, or parent who is in poor physical health; leaves work to accept other work that he performs for at least 2 weeks or that pays him at least twice his weekly benefit amount; leaves work rather than accept a transfer that would cause another employee to be bumped; leaves work because of sexual harassment by another employee with the employer's knowledge; or leaves work that would be deemed unsuitable. The requirement for purging disqualifications for the three major causes was changed from an alternative of weeks of work and earnings or weeks of otherwise compensable unemployment to a requirement that the individual have earnings in covered employment of not less than his current weekly benefit amount in each of 4 calendar weeks. Also, an individual cannot be disqualified for refusing to apply for or accept work if the position offered by an employing unit is a transfer to other work and the acceptance would separate an individual currently performing the work. The recoupment period following a finding of eligibility during which benefits were erroneously paid was extended from 1 to 3 years.

Financing. The taxable wage base was increased from $6,500 to $7,000. An employer's account will be relieved from charges for voluntary quit if the claimant left work, took another job, held it long enough to earn six times the weekly benefit amount, and then was separated from the new work. Also noncharged are benefits paid if an employer continues to employ the claimant in part-time work to the same extent as in the base period. The contribution rate for employers paying total quarterly wages less than $50,000 was limited to a maximum of 2.7 percent of wages paid; and for any calendar year in which emergency contribution rates are in effect, the maximum contribution rate for employers paying quarterly wages less than $50,000 will be 3.1 percent of insured quarterly wages. The emergency contribution rate for an employer whose regular contribution rate is two-tenths of 1 percent or higher will be the sum of the regular rate plus four-tenths of 1 percent. The rates for the most and least favorable schedules were increased from the current range of 0.1 to 5.0 percent to 0.2 to 5.3 percent.

Administration. The period for appealing either a claims adjudicator or referee decision was extended from 14 to 30 days.

Indiana

Coverage. Individuals performing services in a work-relief or work-training program will be excluded from coverage.

Disqualification. The pension offset provision was amended to add that Old Age, Survivors Insurance benefits will be considered payments under a plan of an employer maintained or contributed to by a chargeable employer. The disqualification for failure to apply for or to accept suitable work under the regular program was changed from the week of failure or refusal and until the individual earned eight times the weekly benefit amount to the week of failure or refusal and until the individual earns wages equal to his or her weekly benefit amount in each of 4 weeks.

Iowa

Financing. A reimbursing employer will not have benefits charged when the reimburser is a base-period employer and continues to provide the same employment to the individual during the benefit year as during the base period. The period of chargeability required to qualify for a computed rate was increased from 2 to 5 years. However, the 2-year chargeability requirement is retained for an employer with a negative percentage of excess whose account has been charged for more than 26 times the maximum weekly benefit amount for an individual with four dependents or more. An additional surcharge of 0.5 percent was added for employers who have a negative balance for two consecutive rate computation dates and a cumulative 0.5-percent surcharge is now added for each successive year of negative balance, but the surcharge may not exceed 3 percent of taxable wages.

Louisiana

Disqualification. The disqualification applied for voluntary leaving and misconduct discharges will be assessed for separations from any base-period or subsequent employer. Also, an individual who has been disqualified for voluntary leaving or misconduct will requalify after he has been paid wages equal to at least 10 times the weekly benefit amount subsequent to a claim for a compensable week for unemployment benefits, rather than subsequent to the week in which the disqualifying act occurred as was previously provided.

Financing. The rated governmental employer provisions providing a special financing option for political subdivisions was deleted. Nonprofit organizations and political subdivisions which make payments in lieu of contributions will not be charged for benefits paid because of prompt payment or administrative error if the claimant was not entitled to the benefits. In addition, the Louisiana law provides for not charging a reimbursing employer for benefits paid to an individual who continues to remain in the employ of a base-period employer with no reduction in the number of hours worked or wages paid.

Maine

Disqualification. Total or partial weekly benefit amounts will be reduced by the amount of holiday pay an individual has or is entitled to receive for that week. For nonfraudulent overpayments, no more than 10 percent can be withheld weekly from a claimant's unemployment benefit amount.

Financing. The contribution rate computation date was changed from December 31 to June 30 of each calendar year and the effective date of the contribution rate from July 1 to January 1 of each calendar year. A successor employer's contribution rate from the date of acquisition to the end of the current rate period will be the rate determined immediately prior to acquisition. A newly computed rate for the successor will be determined by combining the experience of the predecessor and successor as of the regular computation date (formerly, the rate period in which the acquisition took place) for subsequent contribution rate periods.

Administration. An appeal from a determination may be extended an additional 15 days for good cause.

Maryland

Benefits. The maximum weekly benefit amount was increased from $120 to $140 and the step-down provision was changed from three to six lower divisions on the benefit schedule.

Eligibility. A valid circumstance for voluntary leaving is specified as only a substantial cause which is directly attributable to, arising from, or connected with the conditions of employment or actions of the employer, or another cause of necessitous or compelling nature such that the individual had no reasonable alternative other than to leave the employment. Also, an individual who resigns because of poor health or to care for an ailing relative must furnish a written statement by a physician or hospital or other documentary evidence of the health problem. The time limit for recoupment of overpaid benefits will be 3 years from the date benefits were paid, and after 5 years any amount not recouped may be deemed uncollectible.

Financing. The rate for newly covered employers is the higher of 1.0 percent or State's 5-year benefit-cost ratio, or the contribution rate which applies to employers with a benefit ratio of .0000, not to exceed 2.8 percent (formerly 2.7).

Michigan

Benefits. For a temporary period of March 1, 1981, to April 1, 1983, the following changes will apply: the number of "credit weeks" needed to establish a benefit year increased from 14 to 18 and the definition of "credit week" was changed from $25 or more to one in which the claimant earned wages equal to at least 20 times the State's minimum hourly wage. Also, the weekly benefit amount will be computed at 70 percent of an individual's after-tax weekly wage, up to 58 percent of the State's average weekly wage.

Disqualification. The waiver of the work search requirement for claimants enrolled in and attending classes as a full-time student has been suspended until April 3, 1983. A special disqualification provision for voluntary leaving and misconduct discharges has been established to apply after March 1, 1981, and before April 1, 1983, and requires requalifying earnings of the lesser of 7 times the weekly benefit amount or 40 times the State's minimum hourly wage times 7, and the reduction in an individual's total entitlement will not apply during this period.

Administration. The agency may waive recovery of improperly paid benefits if the payment was not the fault of the individual and if repayment would be contrary to equity and good conscience.

Mississippi

Coverage. Employment for governmental entities and nonprofit organizations will not include services performed as part of a work-relief or work-training program assisted or financed in whole or part by any Federal or State agency or political subdivision, unless coverage of such service is required by Federal law. Also, employment for participants in Comprehensive Employment and Training Act/Public Service Employment programs unless coverage is Federally required.

Montana

Administration. The Division of Employment Security and its bureaus were abolished and their functions will continue in the Department of Labor and Industry.

Nevada

Financing. The proportional charging of benefits was changed to provide that an employer who has paid 75 percent of a claimant's base-period wages will be charged (except those for which a reimbursing employer is liable) with all benefits paid, but the agency may not charge benefits paid after a voluntary quit or a misconduct discharge if employer provides appropriate evidence to the agency. The range of rates for the most favorable schedule was changed from the previous 0.6 to 3.0 percent to 0.3 to 3.6 percent and the maximum rate in the least favorable schedule, from 3.5 to 4.1 percent.

New Hampshire

Benefits. The qualifying wages were increased from $600 to $800 in each of two calendar quarters. The minimum weekly benefit amount was increased from $21 to $26 (annual earnings of $1,700) and the maximum weekly benefit amount from $114 to $132 (annual earnings of $16,500).

Coverage. Temporary services performed for a political committee or candidate for election in a primary or general election is excluded from employment except services for the permanent State committee or national committee of any political party.

Disqualification. An individual's benefits will not be reduced if he or she is paid for a State legal holiday or for any full day which management observes as a holiday with a general closing of business, provided the number of paid holidays does not exceed the total number of legal holidays in a year.

Administration. The terms of office for advisory council members were changed from 1 to 3 years. A Board of Review was established for second-stage appeals (formerly, New Hampshire provided for only one administrative appeal which was the first-stage appeals body) with a 15-day appeal period of the first-stage appeals body decision. Also, the judicial review appeal body was changed from the Superior Court of the county where the claim was filed to the State Supreme Court.

Penalties. The penalty for fraudulent misrepresentation was changed from a fine of not less than $20 nor more than $200 or imprisonment of not more than 1 year, or both, to a misdemeanor.

New Mexico

Disqualification. Extends a denial of benefits to any school employee for any week during a period of paid sabbatical leave provided in the individual's contract, and during an established and customary vacation period or holiday recess if the individual performs such services before sabbatical leave, vacation, or holiday recess and there is a reasonable assurance that he or she will perform the services following the sabbatical leave, vacation, or holiday recess. The period of disqualification for failure without good cause to accept work when offered or to apply for available suitable work when directed or referred by the agency was changed from 1 to 13 weeks following the week of failure to a duration disqualification and until the claimant earns at least five times the weekly benefit amount.

New York

Disqualification. The voluntary leaving disqualification will not apply if an individual under a collective bargaining agreement or written employer plan exercises his option to be separated with the employer's consent for a temporary period when there is a temporary layoff because of lack of work. An individual who is otherwise eligible for benefits will not be deemed unavailable solely because he is serving on a grand or petit jury.

North Carolina

Benefits. The qualifying requirements were changed from base-period wages of at least $565.50 and high-quarter wages of not less than $150 to base-period wages of at least six times the State's average weekly insured wage and 1½ times the high-quarter wages and the high-quarter wages must equal 1½ times the State's average weekly insured wage. The weekly benefit amount payable to a partially unemployed individual must equal the difference between the weekly benefit amount and that part of the wages paid in excess of 10 percent (previously one-half of the weekly benefit amount) of the average weekly wage in the high quarter of the base period.

Coverage. Services performed by an individual on a fishing boat are exempted if the individual is working under an arrangement with the boat owner or operator which provides no cash other than a share of the boat's catch or a share of the proceeds from the sale of the catch. However, the exemption applies only if the boat's operating crew is made up of fewer than 10 individuals and the exclusion will not apply if a Federal unemployment tax is assessed on the service.

Disqualification. Benefits are denied between two successive academic years or during a similar period between two regular terms based on services performed for secondary schools on a part-time or substitute basis.

Financing. An employer who employs a claimant part time in the base period and continues to give substantial equal part-time employment is not charged for benefits. A contributing nonprofit employer that elects to change to a reimbursement basis may be relieved of the requirement to pay a quarterly 1.0-percent tax under certain conditions.

North Dakota

Disqualification. The definition of suitable work was changed so that, after an individual has received 18 weeks of benefits, suitable work will be any work that pays wages equal to the maximum weekly benefit amount, provided that consideration is given to the degree of risk involved to the individual's health, safety, morals, physical fitness, and the distance of the work from his residence. The labor dispute disqualification was changed from any week in which the claimant's unemployment is because of a work stoppage to any week in which the unemployment is because of a strike, sympathy strike, or a claimant's work stoppage dispute of any kind. The requalifying requirement after disqualification for voluntary leaving was changed to require claimants to earn wages in employment equal to eight times the weekly benefit amount instead of five times the weekly benefit amount. The voluntary leaving disqualification will not apply if an individual accepted work which could have been refused with good cause and terminated the employment with the same good cause within the first 10 weeks after starting work.

Financing. The computation date for determining the rate of contributions was changed from December 31 to September 30 and the maximum tax rate is limited to 5 percent. Employers ineligible for an experience-rated computation will pay contributions at a rate equal to the average industry tax rate but not less than 1 percent, except for those in industries where the average tax rate exceeds 3 percent, who will pay at the standard rate.

Oklahoma

Disqualification. Educational institutions operated by the Department of Human Services are excluded, if not inconsistent with Federal law, from the nonprofessional between-terms denial. An individual will not be denied benefits for voluntary leaving if the claimant exercises his option of accepting a layoff pursuant to a union contract or an established employer plan. Recovery of nonfraudulent overpayments continues into the next subsequent benefit year that begins within 1 year of the expiration of the current benefit year.

Oregon

Benefits. The qualifying requirement was increased from 18 weeks of work with an average of $20 per week and total base-period wages of $700 to 18 weeks of work and total base-period wages of $1,000. The computation of the maximum weekly benefit amount was changed from 55 to 58 percent of the State average weekly wage beginning October 4, 1981, and will be increased to 60 percent beginning July 4, 1982, and 64 percent beginning July 4, 1983.

Disqualification. Oregon now provides for a denial of benefits to professional and nonprofessional employees of educational service districts between school terms and during customary vacation periods or holiday recesses. An individual's performance of voluntary services for a charitable organization or governmental entity, without pay, will not prevent that individual from being considered unemployed. The requalifying conditions for benefits after a disqualification were modified by adding that an individual must perform service in employment subject to Oregon law or as an employee of an employing unit in Oregon or any other State or Canada or as a Federal employee. The disqualification for voluntary leaving because of marital obligations, to be married, or to accompany a spouse was deleted. Also, Oregon deleted the alternative requirement that a disqualification for voluntary leaving, misconduct, or refusal of work may be satisfied if claimant has in 8 weeks registered for work, been able to and available for work, actively seeking work, and unable to obtain suitable work. An individual disqualified for voluntary leaving, discharge for misconduct, or refusal of suitable work will have his benefit rights reduced by eight times his weekly benefit amount but not less than the weekly benefit amount unless he or she has previously received benefits during the benefit year.

Financing. The minimum tax rate under the most favorable schedule was decreased from 1.2 to 0.9 percent and under the least favorable schedule from 2.6 to 2.2 percent.

Administration. The time limit for appealing a referee decision to the Employment Appeals Board was increased from 10 to 20 days.

South Carolina

Coverage. Services performed by an individual in a work-relief or work-training program are excluded unless the Federal law mandates the coverage.

Benefits. The seasonal employment provisions of the law were repealed.

Administration. The time for reconsideration of an initial determination was increased from 7 to 10 days.

South Dakota

Benefits. The computation of the weekly benefit amount was changed from 1/22 to 1/26 of high-quarter wages and the qualifying requirement was increased from base-period wages in other than high quarter of at least 20 times the weekly benefit amount and high-quarter wages of $600 to base-period wages in other than the high quarter of at least 30 times the weekly benefit amount and high-quarter wages of $728.

Disqualification. The pension offset provision was amended to require an individual's weekly benefit amount to be reduced by the entire prorated amount of any pension, annuity, or retirement payment including disability pension payments based on the individual's previous work. Military service-connected disability payments are exempted from the offset. South Dakota now provides that it is good cause for voluntary leaving if an individual accepted employment while on layoff and subsequently quit to return to work for his regular employer.

Financing. All employer contribution rates were increased by 0.4 percent. However, the rate increase may not be credited to the employer's experience-rating account. The fund balance required for determining the range of rates was changed for the least favorable rate schedule from $5 million to $5.5 million. An employer's experience-rating account may not be charged for benefits paid to individuals based on total base-period wages of less than $100 earned from one employer.

Administration. The Secretary may waive or cancel recovery of an overpayment if the claimant has been duly discharged by a Federal bankruptcy court, the claimant died, or if the overpayment has been outstanding for 10 years or more.

Tennessee

Benefits. The earnings disregarded for computing partial benefits were increased from $20 to $30.

Disqualification. An individual who receives regular wages for a vacation period under terms of a labor-management agreement will have his weekly benefit amount reduced by the amount of the wages received, but only if work will be available for the individual with the employer at the end of the vacation period.

Texas

Disqualification. The disqualifications for voluntary leaving, misconduct, and refusal of suitable work were changed from a variable period of from 1 to 25 weeks (1 to 13 for suitable work) to a duration disqualification and until the individual requalifies by working 6 weeks or earning wages equal to six times the weekly benefit amount. Also, an individual who voluntarily leaves work to move with a spouse from the area where they worked will be disqualified from 6 to 26 weeks. An individual will be disqualified for voluntarily leaving work if he or she left because of a medically verified illness, injury, disability, or pregnancy, even though still available for work. However, an individual will not be disqualified whose work-related reason for separation was urgent, compelling, and of a necessitous nature. Texas repealed the requirement that benefits must be reduced by an amount equal to the number of weeks of postponed benefits for voluntary leaving, discharge for misconduct, or refusal of suitable work. Misconduct is defined to include any action that places others in danger or an intentional violation of employer policy or law, but does not include an act that responds to an unconscionable act of the employer.

Vermont

Benefits. The definition of "wages" was redefined, for purposes of determining whether an individual is partially unemployed, to include that part of one's weekly remuneration which is in excess of $15 for the individual plus $3 for each dependent, rather than the amount in excess of $10, as previously defined.

Disqualification. Any individual who was fired because of inability to perform the job because of a felony or misdemeanor conviction will be disqualified for benefits. Also, Vermont now disqualifies any individual who, during a job interview, made false statements, showed an unreasonable lack of interest, or whose behavior was calculated to preclude an offer of work. However, no individual will suffer more than one disqualification for any one disqualifying act. Holiday pay, backpay awards, and compensation for temporary total disability were included as disqualifying income.

Administration. The name of the State agency was changed from the Department of Employment Security to the Department of Employment and Training.

Virgin Islands

Coverage. Services performed under the Comprehensive Employment and Training Act (CETA) will be excluded unless required by Federal law.

Disqualification. A denial of benefits was extended to nonprofessional school employees during a period between 2 successive academic years and to any school employee for any week during an established or customary vacation period or holiday recess if the individual performs the services in the first of such academic years or terms or immediately before such vacation or holiday recess and there is a reasonable assurance that the individual will perform the services in the second of such academic years or terms and also immediately following a vacation or holiday recess. An individual will be disqualified if he did not make reasonable efforts to seek work on his own initiative. The disqualifications for voluntary leaving, misconduct (including disciplinary suspensions), and refusal of suitable work were changed from a 6-week disqualification or for the period of unemployment immediately following separation, whichever ends sooner, to a duration disqualification which continues until the individual has been employed at least 4 weeks and earns at least four times his weekly benefit amount. Also, the labor dispute disqualification was changed from any week in which an individual's unemployment is caused by a stoppage of work because of a labor dispute to a labor dispute in active progress. The disqualification for fraudulent misrepresentation was changed from the week of determination plus 52 weeks to the week the determination is mailed or delivered plus 51 weeks.

Financing. The taxable wage base was increased from $6,000 to $8,000.

Virginia

Benefits. The maximum weekly benefit amount was increased from $122 to $138 and the minimum from $38 to $44 and an individual's weekly benefit amount will be determined on the wages earned in the highest two quarters (previously one) in the base period. The amount of base-period wages needed to qualify for benefits was increased from $1,368 to $2,200. The 1-week waiting period was repealed.

Coverage. Services performed by an individual as a public service employee under CETA and as a temporary employee of the General Assembly were excluded from coverage. However, Virginia included services performed in agricultural labor by aliens admitted to the United States to perform such labor.

Disqualification. If the Federal Unemployment Tax Act is amended to include nonprofessional employees of institutions of higher education in the between-terms denial provisions of the law, the denial will become simultaneously effective under the Virginia law.

Financing. Benefits paid to claimants during the appeals process in a disputed claim will be charged to the nonprofit organization or governmental entity even though the claimant may be found totally or partially ineligible for benefits. The maximum basic experience rate was increased from 4.5 to 6.2 percent and the rate for newly subject employers was increased from 2.0 to 2.5 percent. The formula for determining experience rating changed from a benefit-wage ratio, which measures the relative experience of employers by the separation of workers which result in benefit payments, to a benefit ratio which is determined as a percentage obtained by dividing the employer's benefit charges for the preceding fiscal year by the total payroll for the same period. An unspecified poll cost charge and a fund-building rate of 0.2 percent will be added if the fund balance factor is 50 percent or less for a year.

Administration. The statutory limitation within which a disqualification for fraudulent misrepresentation may be imposed was changed from 2 to 3 years and the provision deleted which limits the ineligibility of a claimant for benefits for up to 5 years for fraud if the benefits are not repaid. Also, the commission may determine as uncollectible or purge any unpaid benefit overpayment upon the death of the person or upon the individual's discharge in bankruptcy occurring after the determination of overpayment.

Washington

Coverage. Excludes, at the discretion of the employer, services performed by corporate officers.

Disqualification. A disqualification for voluntary leaving will continue if the work obtained to purge the disqualification is a mere sham to qualify for benefits and not bona fide work. In determining whether the work is bona fide, factors to be considered include the duration of work, the extent of direction and control by the employer over the work, and the level of skill required for the work in light of the individual's training and experience.

West Virginia

Benefits. An individual will be considered partially unemployed if he or she has weekly earnings of at least $26 and, if less than $26, a person will be considered totally unemployed. Formerly, an individual was considered partially unemployed if the weekly wages were less than the weekly benefit amount plus $25. A partially unemployed individual must serve a 1-week waiting period.

Disqualification. The disqualification for voluntary leaving was changed from a 6-week disqualification with an equal reduction in maximum benefits to a duration disqualification or until the individual returns to covered employment and has been employed for at least 30 working days. West Virginia added to the disqualification for refusal of suitable work that the total benefit entitlement will be reduced by an amount equal to four times the individual's weekly benefit amount. The definition of gross misconduct was amended to add that it shall include but not be limited to any act of misconduct where the individual has received prior written warnings that termination of employment may result from that act. The disqualification for fraudulent misrepresentation to obtain benefits was changed from a variable 5 to 52 weeks to a flat 52 weeks. Deleted was the requirement that for each week of disqualification for fraudulent misrepresentation, an additional 5-week disqualification would be imposed.

Penalties. The fine for fraud, upon conviction, was increased from not less than $20 or more than $50 to not less than $100 or more than $500 or by imprisonment for not longer than 30 days or both.

Financing. The taxable wage base was increased from $6,000 to $8,000. A newly covered employer's tax rate will be 2.7 percent, except that out-of-State corporations or business entities in the construction trades will pay 7.5 percent. The tax rate of employers who do not have 36 months of chargeability was increased from 1.5 to 2.7 percent. Benefits paid to an individual who voluntarily leaves work without good cause involving fault on the part of the employer will no longer be noncharged. The fund requirement for the most favorable schedule was changed from $110 million to 150 percent of average benefit payments for the 3 preceding calendar years with the rates ranging from 0 to 7.5 percent and the fund requirement for the least favorable schedule from $60 million to 100 percent of average benefit payments for the 3 preceding years with the rates ranging from 1.5 to 7.5 percent. A 1-percent surtax will be added to each employer's rate until the trust fund assets equal or exceed the average benefit payments from the fund for 3 preceding years. Partial benefits paid to an individual will be charged to the account of the last employer for whom he worked 30 working days.

Administration. The first-stage appeals body was changed from an examiner to an administrative law judge.

Wisconsin

Disqualification. The disqualification for voluntary leaving will not apply if the individual left or lost employment because he or she reached the firm's compulsory retirement age.

Wyoming

Financing. The new employer bonding requirements applicable to new contributing employers were repealed. □

FOOTNOTES

[1] Alaska, Arizona, Hawaii, Idaho, Illinois, Maine, Mississippi, Nebraska, New Mexico, North Dakota, Oregon, Puerto Rico, Rhode Island, Tennessee, Vermont, and West Virginia.

[2] Alaska, Arizona, California, Colorado, Connecticut, Florida, Hawaii, Illinois, Indiana, Iowa, Maine, Maryland, Michigan, Montana, Nevada, New Mexico, New York, North Carolina, North Dakota, Oregon, South Carolina, Tennessee, Vermont, Washington, West Virginia, and Wisconsin.

[3] Alaska, California, Connecticut, Florida, Georgia, Hawaii, Illinois, Iowa, Maine, Maryland, Michigan, Montana, Nevada, New Mexico, New York, North Dakota, South Carolina, Tennessee, Vermont, Washington, and Wisconsin.

[4] Alaska, Arizona, California, Connecticut, Georgia, Hawaii, Iowa, Maine, Montana, Nevada, New York, Tennessee, Vermont, Washington, and Wisconsin.

A note on communications

The *Monthly Labor Review* welcomes communications that supplement, challenge, or expand on research published in its pages. To be considered for publication, communications should be factual and analytical, not polemical in tone. Communications should be addressed to the Editor-in-Chief, *Monthly Labor Review*, Bureau of Labor Statistics, U.S. Department of Labor, Washington, D.C. 20212.

Workers' compensation: key legislation in 1981

Higher benefit levels, broader coverage, and improved medical and rehabilitation services are among the actions taken by States to provide better protection for injured workers

LAVERNE C. TINSLEY

Forty-nine States, Puerto Rico, and the District of Columbia were in legislative session during 1981.[1] Deliberations resulted in the introduction of more than 1,500 proposals and enactment of more than 100 laws dealing with workers' compensation. Coverage and benefits were addressed in most of the amendments as in previous years. Numerous administrative changes were also made and medical and rehabilitation services for injured workers were improved.

Workers' compensation coverage was revised by new enactments in 19 States. These revisions extended coverage to workers including apprentices or students in work training or educational programs in four jurisdictions and to specified volunteers serving as State employees in emergency situations.

Forty-six jurisdictions and the District of Columbia raised their maximum weekly benefit levels for total disability and death either statutorily or according to increases linked to each State's average weekly wage. (See table 1.) Total maximums were increased in Arkansas, Mississippi, and Tennessee.

Effective January 1, 1982, Michigan became the second State, after Iowa, to establish maximum weekly benefit levels for disability and death at 80 percent of spendable earnings. Spendable earnings are defined as the employee's gross wage less State and Federal income taxes and social security where appropriate. Previously, maximum weekly benefits in these States were established at 66-2/3 percent of the employee's average weekly wage before taxes.

One State, Maine, rescinded legislation that would have increased maximum weekly benefits to 200 percent of the State's average weekly wage on July 1, 1981. Thus, benefits remain at 166-2/3 percent of the State's average weekly wage.

Legislation was also enacted in Maine which permits injured workers to select their own physician or surgeon from those licensed to practice in the State. Previously, workers were required to select physicians from a panel provided by the State workers' compensation agency.

The laws of Montana, Nebraska, North Carolina, Oregon, and Virginia were amended to increase burial allowances.

Several States updated their rehabilitation provisions for injured workers. For instance, unemployed dependent surviving spouses in Minnesota are now eligible to apply for rehabilitation. The intent of this legislation is to allow dependent surviving spouses the opportunity to

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Table 1. Jurisdictions that increased maximum weekly temporary total disability benefits during 1981

Jurisdiction	Former maximum	New maximum
Alabama	$148.00	$161.00
Alaska	$650.00	$858.00
Arkansas	$126.00	$140.00
California	$154.00	$175.00
Colorado	$244.65	$261.80
Connecticut	$285.00, plus $10 for each dependent under 18 years of age not to exceed 75 percent of employee's wage	$310.00, plus $10 for each dependent under 18 years of age not to exceed 75 percent of employee's wage
Delaware	$175.28	$194.81
District of Columbia	$456.24	$496.70
Florida	$211.00	$228.00
Georgia	$110.00	$115.00
Hawaii	$215.00	$235.00
Idaho	$181.80 to $252.50 according to number of dependents, plus 7 percent of SAWW for each child up to 5	$198.00 to $275.00 according to number or dependents plus 7 percent of SAWW for each child up to 5
Illinois	$376.33	$394.19
Iowa	$384.00	$501.00
Kansas	$170.00	$187.00
Kentucky	$217.00	$233.26
Louisiana	$164.00	$183.00
Maine	$332.16	$367.25
Maryland	$241.00	$248.00
Massachusetts	$245.48, plus $6 for each dependent; aggregate not to exceed worker's average weekly wage or $150	$269.93, plus $6 for each dependent; aggregate not to exceed worker's average weekly wage or $150
Michigan	$171.00 to $200.00 according to number of dependents	$181.00 to $210.00 according to number of dependents
Minnesota	$244.00	$267.00
Mississippi	$ 98.00	$112.00
Missouri	$150.00	$174.00
Montana	$219.00	$241.00
Nevada	$245.09	$270.20
New Hampshire	$213.00	$234.00
New Jersey	$185.00	$199.00
New Mexico	$201.04	$221.50
North Dakota	$213.00, plus $5 for each dependent child; aggregate not to exceed worker's net wage after taxes and social security	$233.00, plus $5 for each dependent child; aggregate not to exceed worker's net wage after taxes and social security
Ohio	$258.00	$275.00
Oklahoma	$155.00	$175.00
Oregon	$261.32	$286.88
Pennsylvania	$242.00	$262.00
Rhode Island	$217.00, plus $6 for each dependent; aggregate not to exceed 80 percent of worker's average weekly wage	$238.00, plus $6 for each dependent; aggregate not to exceed 80 percent of worker's average weekly wage
South Carolina	$197.00	$216.00
South Dakota	$191.00	$208.00
Tennessee	$119.00	$126.00
Texas	$133.00	$154.00
Utah	$230.00, plus $5 for dependent spouse and each dependent child up to 4, but not to exceed 100 percent of SAWW	$256.00, plus $5 for dependent spouse and each dependent child up to 4, but not to exceed 100 percent of SAWW
Vermont	$208.00, plus $5 for each dependent under 21 years of age	$225.00, plus $5 for each dependent under 21 years of age
Virginia	$213.00	$231.00
Washington	$204.66	$223.34
West Virginia	$262.08	$276.26
Wisconsin	$233.00	$249.00
Wyoming	$402.01	$411.21

NOTE: Benefit increases are based on the applicable State's average weekly or monthly wage, and for the District of Columbia, the national average weekly wage. However, 9 States (Arizona, Arkansas, California, Georgia, Indiana, Mississippi, Nebraska, New York, and Tennessee) and Puerto Rico prescribe statutory amounts; 5 States (Arizona, Indiana, Nebraska, New York, and North Carolina) and Puerto Rico are not listed because no increases for temporary total disability were legislated during 1981.

become self-sufficient. Compensation will now be allowed while a workers' potential for rehabilitation is being evaluated in Arkansas.

In Nevada, injured workers may select a second physician from a panel within 90 days after injury (formerly 45 days) if the initial selection proved to be unsatisfactory. Allowances for board, lodging, travel, and maintenance were increased in New Mexico. And in Oregon, workers who fail to enroll in rehabilitation programs may now have their compensation suspended.

More States are penalizing employers for failure to make timely compensation payments and also for failure to make certain notifications regarding claims. In other States, employees are being penalized for not obtaining insurance coverage.

Additional changes were made in State workers' compensation statutes during the year that focused on various administrative procedures and reporting requirements. Six states established study committees to review and recommend improvements in these areas.

Following is a summary of legislation enacted by individual States.

Alabama

County governments are now permitted to cover their officials and employees through group self-insurance programs.

An amendment was proposed to the Alabama Constitution which would prohibit suits by "co-employees" for personal injury, disease, or death arising out of and in the course of employment.

Alaska

The monthly compensation payment during rehabilitation (from the Second Injury Fund) was increased from $100 to $200; and the total maximum compensation during rehabilitation from $5,000 to $10,000.

Employers are newly required to notify the Workmen's Compensation Board within 14 days of any change in a compensation claim. A civil penalty of $100, plus $25 per day, was established for failure to give notice within the specified time period but no fine can exceed $2,500 for each offense.

Arizona

Coverage was extended to State employees who serve as volunteers without compensation in certain search or rescue operations.

Payments by employers or carriers for no-dependency death were decreased from 2 to 1½ percent of all premiums received during the preceding year.

New provisions were established regarding financing of the Special Fund.

Arkansas

Volunteer emergency services workers were included for coverage.

Participants in the State's workfare project, whose sole purpose for participating is to retain food stamps and not for employment within the State, were excluded from coverage.

Maximum weekly benefits for disability and death were raised in two steps. On March 1, 1981, benefits increased to $140 from $126 and on March 1, 1982, benefits will increase to $154. During the same periods, total maximum benefits for temporary total and permanent partial disability increased to $63,000 (from $56,700) and will increase to $69,000. For permanent total disability or death occurring on or after March 1, 1981, the new total aggregate is $75,000, formerly $50,000.

Temporary total disability benefits can now be extended after the first 40 weeks of compensation and beyond for 13-week intervals. Benefits for temporary and permanent total disability will be barred for any week that a claimant can simultaneously receive unemployment compensation benefits.

A limit of $10,000 and 6 months will be placed on all medical services, hospital, and other treatment available to injured workers. In some instances, these services may be waived or extended.

New procedures were adopted regarding employee rights in change of physician.

Injured workers are now eligible to receive up to 6 weeks of compensation while their potential for rehabilitation is being evaluated if they are not working or receiving any benefits.

Lump sum attorney fees will now be discounted at the current rate of 7 percent.

Benefit payments normally made from the Second Injury Fund will revert to the employer at the time of an accident if the Fund becomes insolvent before July 1, 1983.

The penalty for making late compensation payments was increased from 6 to 10 percent of the unpaid benefit.

The requirement that widowers be incapacitated in order to receive compensation was eliminated, thereby allowing widowers the same benefits as widows.

California

Coverage of persons who perform officiating services at amateur sporting events sponsored by public agencies or by private nonprofit organizations was removed. Students participating as athletes in amateur sporting events were also eliminated from coverage.

Colorado

Mandatory coverage is now required of employers who enter into bona fide cooperative educational or student internship programs sponsored by educational institutions for the purpose of providing on-the-job training for students.

Public entities with annual payrolls of at least $1 million are now allowed to become workers' compensation self-insurers or form self-insurance pools if their payrolls are less.

A 52-week time limit was set on benefits paid during vocational rehabilitation or for income maintenance. The maximum ($20,000) on medical aid and vocational rehabilitation was removed.

Chiropractors are now permitted to treat workers' compensation claimants.

In addition to the 1.75-percent premium tax imposed for maintenance of the Major Medical Insurance Fund, another premium tax was added.

Further investment was authorized of moneys in the workers' compensation special funds in the form of notes, loans, bonds, and certain certificates.

The Industrial Commission is newly required to review appealed cases within the scope of the issues presented in the record only.

Connecticut

Participants in work, training, or educational programs approved by the labor commissioner will now be covered for workers' compensation.

Payments for accident and health or life insurance coverage will be borne by the Second Injury Fund in cases where benefits for total incapacity continue for longer than 104 weeks.

A provision was added to the statutes making the last employer or insurer initially liable for payment of compensation. If it is determined that other employers are equally liable for compensation, the commissioner will order them to reimburse the initially liable employer or insurer at a 12-percent interest rate.

By enactment, the State was required to use a private insurance carrier for workers' compensation coverage, and procedures for coverage by private carriers was added to the law.

A Statistical Division was established in the Workers' Compensation Commission to primarily compile and maintain statistics concerning occupational injuries and diseases, voluntary agreements, status of claims, and commissioner's dockets. Funding of the Division will come from the Administrative Cost Fund.

Delaware

Authorization was made for the appointment of a State Disability Reform Committee to recommend legislation to consolidate disability programs.

Florida

Legislation extended the existence of the Workers' Compensation Advisory Council to October 1, 1987. The title of "judges of industrial claims" was changed to "deputy commissioners."

Georgia

Coverage was extended to members of the Georgia National Guard while serving on active duty in the State and to certain volunteer firefighters.

Maximum weekly benefits for disability and death were increased from $110 to $115.

Attorney fees assessed against opposing parties are no longer required to be made in a lump sum.

The requirement that the employer or insurer keep the Administrator of the Subsequent Injury Trust Fund informed of any proposed compensation settlements or agreements was eliminated.

Regulation of group self-insurance funds for workers' compensation was transferred from the Secretary of State to the Insurance Commissioner.

Idaho

Officials who serve at athletic contests involving secondary schools were eliminated from coverage.

Total disability benefits less than the State's current applicable minimum for the first 52 weeks of compensation will thereafter be not less than the State's current applicable minimum, or 45 percent.

Children can now receive death benefits beyond age 18 if they are incapable of self-support for an additional 500 weeks, minus the period benefits were paid prior to age 18.

A maximum of $5,000 was set as payment into the State treasury by employers for no-dependency death cases.

Employers are required to pay interest on all compensation awards due, and at the rate in effect when the award was made. The present rate is 8 percent per annum.

Indiana

Students who are permanently impaired will now receive the same coverage as full-time employees for workers' compensation purposes while performing services for an employer in an approved vocational educational training program.

Iowa

Persons certified by the Council of Accreditation in Occupational Hearing Conservation are now allowed to make audiometric examinations.

Kansas

The medical allowance for selection of another physician by an employee was raised from $150 to $350 for cases where the physician selected by the employer is unsatisfactory.

Louisiana

Sole proprietors are now permitted an exemption from coverage upon request.

The coverage waiver allowed to corporate officers, who own at least 10 percent of the corporate stock, and to partners will be unlimited and apply to all trades, businesses, or occupations conducted by the corporation or partnership. This provision also applies to sole proprietors.

Workers who are employed by a private household and perform services that are not incidental to, or do not arise out of any trade, business, or occupation of the household are specifically excluded from coverage.

Group self-insurance funds are newly required to maintain at least $4 million of excess insurance to secure the payment of all compensation benefits.

The House and Senate Labor and Industry Committees were authorized to direct a study of workers' compensation rate structures and the profit margins of insurance companies.

Maine

Agriculture employment, where 150 cords of wood or less are harvested annually from farm wood lots, and aquaculture employment are removed from coverage provided that their employees are covered by liability insurance of not less than $25,000 and medical insurance of not less than $1,000.

Employees who participate in ridesharing programs and receive no remuneration were exempted from coverage as well as those who receive injuries as a result of voluntary participation in an employer-sponsored athletic team or event.

The increase in maximum weekly benefits based on 200 percent of the State's average weekly wage, effective July 1, 1981, was recinded. Benefits will remain at 166-2/3 percent.

Initial selection of physician or surgeon by an employee is now permitted from a list of those who are licensed to practice in the State of Maine.

Interest and penalties will now be applicable to compensation claims involving State employees who were previously excluded.

An employee with permanent partial disabilities caused partly by a previous injury will be compensated for the entire injury from his or her present employer. The employer will be reimbursed by the Second Injury Fund.

The provision which established the employer's liability for compensation of second injuries and permitted employees to apply for compensation from the Second Injury Fund was repealed.

Employers or insurers may now recover benefit payments made to employees pending an appeal, if the court rules that an employee was not entitled to compensation. The ordering of any repayment of benefits which would cause a hardship or an injustice was prohibited.

Petitions for rehearings are now required to be filed within 30 days of an agreement, award, or decree. Previously, the time limit was 20 days.

Employees or prospective employees are no longer permitted to waive their rights to compensation for an aggravation of an occupational disease.

Upon the discovery of new evidence, the Workers' Compensation Commission can now reopen a workers' compensation case.

Other changes occurred relating to bonding and excess insurance.

Maryland

Coverage was established for volunteer firefighters and rescue workers of Frederick County.

Insurers and self-insurers are allowed to convert, with approval of the Workmen's Compensation Commission, permanent partial disability awards that have not exceeded 51 weeks of benefits to a lump sum without discount, less any attorney fee.

All assets and obligations of the Workers' Compensation Insolvency Fund were transferred to the Maryland Insurance Guaranty Association.

Additional assessments were authorized against insurers and self-insured employers in order to maintain the solvency of the Uninsured Employers' Fund.

The administrator of the Subsequent Injury Fund was authorized to hire any expert to defend the fund, if necessary, when suits are filed against it.

Rules and regulations for group self-insurance will now be developed by the Workmen's Compensation Commission alone, rather than jointly with the insurance commissioner.

Businesses located in urban enterprise zones may be eligible for discounts on insurance premiums paid to the State Accident Fund if certain Federal standards are met.

Michigan

The definition of "public employer" was broadened to include two employers or more in the same industry with combined assets of at least $1 million who pool their liabilities as self-insurers.

Minnesota

Coverage was expanded to include the superintendent of the Bureau of Criminal Apprehension within the application of the law.

A 10-year sliding scale was set up for payment of death benefits which formerly were paid during the lifetime of the recipient.

Permanent partial disability awards will now be paid in a lump sum when the employee returns to work.

Upon request, surviving dependent spouses who are unemployable can now receive rehabilitation.

The time within which an employer is required to make first payment of compensation was reduced from 30 to 14 days.

A medical fee schedule was established with a cap on fees at 75 percent of the usual and customary community charges for the preceding year. Services covered by the fee schedule include medical, chiropractic, podiatric, surgical, hospital, and other health care provider treatment and services.

The burden of proof concerning a work-related injury was made the responsibility of the employee.

Group self-insurance pools are no longer required to consist of employers in the same industry.

Fines charged to uninsured employers were increased from $50 to $500; and up to $2,000 when the employer has five employees or more.

Mississippi

Maximum weekly benefits for disability and death were raised from $98 to $112; and total maximum from $44,100 to $50,400. The weekly minimum benefit of $25 was retained.

The Department of Public Safety is now permitted to become a self-insurer upon proper notification to the Industrial Commission.

Missouri

The provision which exempted from coverage employers with a total gross annual payroll for the preceding calendar year or part of the current calendar year of not more than $10,000 was eliminated.

Minimum weekly benefits for disability and death occurring on or after September 28, 1981, were set at $40. Previously, no statutory minimum was in effect.

Compensation for temporary partial disability was set at 66-2/3 percent of the difference between the average earnings of the employee before the accident and the amount which the employee will reasonably be able to earn during disability. No consideration was previously given to earning capacity during disability when determining benefits.

Permanent partial disability in lieu of all other compensation except for medical and physical rehabilitation expenses was changed. Compensation for permanent partial disability will now be in addition to compensation for temporary total or partial disability.

A fine of $100 per day was added as a penalty against employers who fail to insure or self-insure their liability for workers' compensation, up to a maximum of $5,000. Any fines collected will go to the Second Injury Fund for payments to employees of uninsured employers.

Group self-insurance was authorized and will be regulated by the Division of Workers' Compensation.

Montana

The Workers' Compensation Division was authorized to set fees for medical, chiropractic, and paramedical services, excluding hospital services, based on 90 percent of the usual and customary charges of the medical specialty involved.

Silicosis victims will now receive up to $200 in monthly payments, formerly $175.

The burial allowance was increased from $1,100 to $1,400.

Nebraska

Corporation officers owning at least 25 percent of the corporate stock are permitted to waive coverage.

The burial allowance was raised from $1,000 to $2,000.

Nevada

Apprentices in vocational training classes or receiving bona fide instruction under an apprenticeship committee and receiving at least $150 a month during such periods are covered for workers' compensation.

Volunteers, excluding students, who perform work for private organizations as part of a public program and who are not otherwise covered for workers' compensation will now be entitled to benefits as employees of a public agency.

Some voluntary ski patrollers were excluded from statutory coverage as well as sole proprietors who are no longer domiciled in Nevada.

Compensation is now allowed for both injury and disease provided the combined award does not exceed compensation payable for the total percentage of disability.

Police officers and firefighters who are partially disabled because of occupational diseases and incapable of performing their work are now entitled to partial disability benefits.

Certain employees of the Department of Motor Vehicles are now entitled to benefits for occupational heart or lung disease.

Injured employees who are not satisfied with their initial choice of physician may select another physician from a panel if the choice is made within 90 days after injury, formerly 45 days.

Physicians who testify at hearings are entitled to the same fees as witnesses in civil cases. An appeals officer may order a fee for the physician according to the fee schedule for medical consultations.

Self-insured employers were instructed not to make payments to physicians until an itemized statement of services has been received.

Every self-insured employer is required to furnish the Commissioner of Insurance with specified insurance information to carry out the provisions of the law.

Excess insurance or reinsurance coverage obtained by a self-insured employer must be written by a Nevada carrier.

Several studies were authorized during the year of which the results and recommendations are to be reported to the 62d session of the legislature. One is to be conducted by the Nevada Industrial Commission on the Occupational Diseases Act and the other by the Legislative Commission on the feasibility and desirability of allowing insurance coverage to be provided through private carriers.

New Mexico

The maximum benefit allowable for board, lodging, travel, and maintenance of the family during rehabilitation was increased from $1,000 to $3,000.

New York

Employers are now liable for payment of services provided an injured employee by a self-employed physiotherapist pursuant to written instructions of an authorized physician or podiatrist.

Employers are now required to pay the attorney fees of employees who win discrimination cases.

Appointment of qualified interpretors is now mandatory at hearings in which a deaf person is a party or witness. Interpreting services will be paid out of administrative funds.

Temporary referees of the Workers' Compensation Board must now be qualified with appropriate training or experience.

The definition of "average weekly wage" was expanded to include an alternative calculation of benefits based on total wages of the last 8 weeks immediately preceding disability and excludes the week in which disability began.

North Carolina

Minimum weekly benefits for disability and death were raised from $20 to $30.

The cap ($80) was removed on weekly benefits for National Guardsmen and the weekly maximum applicable to other employees applied (100 percent of the State's average weekly wage).

Maximum weekly compensation for partial incapacity, total disability, or death due to asbestosis or silicosis was changed from $80 to 100 percent of the State's average weekly wage.

The statute of limitations for asbestosis, lead poisoning, and silicosis was amended. Compensation for asbestosis may now be awarded up to 10 years after disablement or death from exposure to such disease. The time limit for lead poisoning remains at 2 years. Silicosis was deleted from the law as a special provision and is now subject to the general statute of limitations for occupational diseases, which is 2 years after disablement or death. There is no provision for death after continuous disablement from silicosis.

The burial allowance of $500 was raised to $1,200.

A carrier or employer who appeals a compensation award must pay 8-percent interest on the final compensation award from the initial filing date if unsuccessful.

If disputes arise between employer and employee concerning the continuance of medical treatment, the Industrial Commission at its discretion may order further treatment.

North Dakota

Maximum weekly death benefits were raised from $90 to $105. Supplementary benefits for permanent total disability and death were increased from 20 to 25 percent of the difference between the benefits a claimant is receiving and the maximum benefits in effect on July 1, 1975.

The burial allowance was raised from $1,000 to $2,000.

A rebuttable presumption was created which specifies that an injury can be attributable to intoxication, based on the alcohol level in the blood.

Allowances for rehabilitation can no longer be ordered in lieu of death benefits where there is a rehabilitation contract.

The filing time for claims was extended from 60 days to no more than 1 year after injury for disability, and from 1 year to 2 years following death.

A legislative council was directed to study workmen's compensation wage base and premium determinations, with special emphasis on the effects the statutorily established maximum payroll base has on premium levels of various employers.

Oklahoma

Two employers or more are now permitted to pool their liabilities to qualify as group self-insurers. Boards of education and institutions of higher education may also qualify as self-insurers for workers' compensation.

A special House and Senate Committee was authorized to study the workers' compensation rate structure of the State Insurance Fund.

Oregon

The burial allowance was raised from $1,000 to $3,000, and the cost of transportation for the decedent's body is now included as part of the burial allowance.

Dependent children, or the surviving spouse for the dependent children, will now be entitled to $150 instead of $100 in death benefits per month.

Workers or their beneficiaries are entitled to recover 33–1/3 percent of an award, up from 25 percent in third-party cases.

Within 120 days from the date a worker becomes temporarily totally disabled, the insurer or self-insured employer must act to enroll the worker in a physical rehabilitation program, if necessary.

Participants of rehabilitation programs approved by the Workers' Compensation Department are newly entitled to temporary total disability benefits.

Suspension of compensation may be authorized by the Director of the Workers' Compensation Department against a claimant who fails to participate in rehabilitation.

All users of the Department's rehabilitation facility must pay users fees to meet the cost of services and to protect the State against tort and liability claims.

The Department's director was also authorized to enter into contracts for rehabilitation services with private rehabilitation centers if such centers meet the State's licensing requirements.

Travel expenses were granted for employees who travel more than 50 miles from their residence to attend a workers' compensation hearing.

A rebuttable presumption was established that a person is an independent contractor unless such person has qualified either as a carrier-insured employer or a self-insured employer instead of a direct responsibility employer or as a contributing employer.

The State Accident Insurance Fund Corp. may now conduct reinsurance business as well as workers' compensation insurance with Oregon employers.

Rhode Island

Employees will no longer be entitled to receive compensation while incarcerated if they have no dependents.

Qualified employers are permitted to self-insure for a specified sum by furnishing security, indemnity, or bond equal to the particular amount together with insurance for projected losses in excess of such sum.

South Carolina

Fines can now be levied against an employer or carrier for failure to submit certain reports, forms, and records in any phase of the claims process.

Full Commission reviews are now to be conducted by three-member panels composed of commissioners who are appointed by the chairperson, excluding the original hearing commissioner.

Tennessee

The maximum weekly benefits for disability and death were increased from $119 to $126, and total maximum from $47,600 to $50,400.

Sole proprietors and partners who are covered under the workers' compensation law may continue coverage in effect under any other individual or group accident and sickness policy.

Texas

Political subdivisions are newly authorized to provide full medical benefits and minimum compensation payments to injured volunteer firefighters, police, emergency medical personnel, and other specified volunteers.

Lifetime benefits were established for statutorily prescribed permanent total disability awards.

No attorney fees will be allowed in a case where benefits will be paid for life if the employer's insurance company admits liability and makes payments while the case is pending. If liability is admitted, the claimant's attorney is entitled to a reasonable fee.

Claims for compensation under voluntary policies are subject to the jurisdiction of the Industrial Accident Board.

The Assigned Risk Pool may at its discretion insure an individual entity without insuring any combinable entities.

Various duties and authority were granted to the attorney general relating to investigation of possible workers' compensation fraud.

Utah

Payments for temporary total disability were allowed to be extended in certain cases.

Maximum weekly payments for temporary partial disability were increased from 66-2/3 percent to 100 percent of the State's average weekly wage. Additional payments of $5 were authorized for a dependent spouse and each dependent child up to 4, under age 18, but total payment not to exceed 100 percent of the State's average weekly wage.

Minimum weekly benefits for persons entitled to compensation from the Second Injury Fund were increased from $85 to $100.

Vermont

The exemption for agriculture or farm employment was raised from $1,000 to $2,000 per aggregate payroll in a calendar year.

Virginia

The burial allowance was increased from $1,000 to $2,000, and for transportation expenses of the deceased from $300 to $500.

Documentation regarding social security disability benefits will now be required by the Industrial Commission when a claimant files for cost-of-living supplements in order to establish eligibility under the law.

The House and Senate Committees on Labor and Commerce were authorized to establish a joint subcommittee to study the State's laws concerning brown lung disease (byssinosis) and determine if the present laws should be revised.

Washington

Sole proprietors or partners are permitted an exemption from mandatory coverage after certain conditions are met.

Self-insurers can now insure the payment of permanent total disability or death benefits by setting up a bond with the Department of Labor and Industry.

Claims for medical treatment only, not involving permanent disability, may be closed once treatment is concluded.

Wisconsin

The Department of Administration was authorized to administer workers' compensation for State employees and their dependents.

Wyoming

Permanent total disability benefits were increased to 66–2/3 percent of the State's average weekly wage for a maximum of 257 weeks. Previously, a maximum benefit of $30,000 was paid in monthly installments at the rate of the State's average weekly wage as determined quarterly.

Benefits for death were also changed to 66–2/3 percent of the State's average weekly wage for a maximum period of 231 weeks. Previously, $25,000 was paid in monthly installments at the rate of the State's average weekly wage. This enactment also eliminated the provision that allowed surviving spouses, who remarry before the entire award is paid, to receive only $500 of any unpaid balance.

The monthly contribution paid into the Industrial Accident Account by employers who engage in extrahazardous employment was decreased from 1 percent to .75 percent of the monthly earnings of the employee. ☐

———*FOOTNOTE*———

[1] The following States—Hawaii, Illinois, Kentucky, Massachusetts, New Hampshire, New Jersey, Ohio, Pennsylvania, South Dakota, and West Virginia—convened in 1981 but were not discussed in the State-by-State summary of key amendments to workers' compensation laws.

Select commission suggests changes in immigration policy—a review essay

Tougher enforcement, higher quotas, amnesty for most current illegal aliens, and a 'more reliable' means of checking the legal status of all workers are among the 67 recommendations of a 2-year Congressional panel

PHILIP L. MARTIN

Many believe that immigration to the United States is out of control. Instead of the 450,000 immigrants anticipated in 1980, 808,000 legal immigrants, refugees, and special entrants were admitted, and an unknown number of illegal or undocumented workers, as many as 500,000, entered by various means. Immigration is at an alltime high, exceeding the previous high average of 880,000 per year between 1901 and 1910.[1] The Select Commission on Immigration and Refugee Policy was created by Congress in 1978 and given 2 years to develop an immigration remedy. Its March 1981 report contains 67 recommendations designed to reassert control over immigration.[2]

Apparently, despite our immigrant heritage, Americans are opposed to more large-scale immigration. The Roper poll of June 1980 found that 91 percent of Americans support an "all-out effort" to stop illegal immigration and 80 percent want to reduce the number of legal immigrants and refugees. However, the commission believes that more legal immigrants could be admitted if illegal immigration were stopped. Its major recommendation was that the United States "close the back door to undocumented and illegal migration [and open] the front door a little more to accommodate legal migration."

In a world of nation-states, all countries must make three immigration decisions: (1) how many immigrants to admit; (2) from where; and (3) in what status. All sovereign nations claim the right to control their borders, making immigration a privilege extended to a few individuals, not a basic human right available to all. Most countries severely limit the settler immigration characteristic of the American past. More than half of the 1 million or so "settler immigrants" admitted to the world's 164 nations each year come to the United States. Unlike most nations, the United States treats all countries equally when issuing visas under the 6-tier preference system that governs the admission of our 270,000 planned immigrants. Also unique is our reluctance to separate the right to work from the right to continued residence. The United States has only 30,000 legal temporary workers, persons expected to leave when their seasonal jobs end. In contrast, European nations have used temporary alien workers for 5 to 10 percent of their work forces.[3]

Philip L. Martin, associate professor of agricultural economics at the University of California, Davis, served as an adviser to the Select Commission on Immigration and Refugee Policy.

The commission's 453-page report is a moderate response to restrictionist pressures. If its proposals were adopted, total immigration would decrease, but the legal share would rise. The report recommends more enforcement, amnesty for illegal aliens now in the United States, a 67-percent increase in quota (planned) immigrants for 5 years, no upper limit on total immigration (quota admissions, exempt relatives, and refugees), and a new international approach to vexing refugee problems.

The thrust of the report is the need for enforcement to reassert control over immigration. The commission voted 14–2 to recommend fining employers who knowingly hire illegal aliens and narrowly (8–7) recommended a "more reliable" mechanism to identify persons authorized to work (such as a counterfeit-proof social security card). By 14 to 1 it advocated increased enforcement of existing labor standards laws. Adoption of the enforcement recommendations would presumably help curb illegal immigration. But what about the 4 to 6 million persons currently living in the United States illegally? The commission recommends a onetime amnesty that would permit aliens in the United States before January 1, 1980, to become legal immigrants after the new enforcement mechanisms become active. Congress would decide the details of the amnesty program.

The commission recommended (14–2) against a large-scale, temporary worker program that might help curb future illegal immigration. By the same margin, it suggested that the small (but numerically unrestricted) H–2 program, which admits aliens for temporary jobs, be continued, but argued that employers should be weaned from dependence on such workers.

The commission's recommendations range from a call for "better understanding of international migration" to a "visa waiver for tourists and business travelers from selected countries." A quick review of immigration law and the commission's responsibilities will help put the proposals in context. The best way to outline the recommendations is to discuss their impacts on the three major groups of immigrants: legal, illegal or undocumented, and refugee.

Background

The Select Commission on Immigration and Refugee Policy was established by Public Law 95–412 on October 5, 1978, "to study and evaluate . . . existing laws, policies, and procedures governing the admission of immigrants and refugees." It was asked specifically "to conduct a study and analysis of the effects of immigration on (1) social, economic, and political conditions in the United States; (2) demographic trends; and (3) present and projected [domestic] unemployment."

The commission was established after Congress, in the early 1970's, repeatedly failed to approve sanctions on employers who knowingly hired illegal aliens; after both Presidents Ford and Carter organized interagency task forces to study immigration issues; and after President Carter's August 1977 enforcement and amnesty proposals to curb illegal immigration died in Congress. The commission's members knew that most immigration reform proposals do not survive the crossfire of opposition from special interest groups.

The commission faced the task of recommending reforms in current immigration law, which is humanitarian in spirit (favoring the admission of refugees and relatives of U.S. residents), but which is also increasingly utilitarian in practice, because illegal immigration delivers large numbers of alien workers to American employers. The 16 commissioners included four Cabinet secretaries (Justice, Health and Human Services, Labor, and State); eight members of Congress; and four representatives of the public at large. The commission's chairman was the Reverend Theodore Hesburgh of Notre Dame University.

Reforming immigration policy is never easy. Despite an immigrant heritage and the belief that the United States has always welcomed the world's tired and poor, past immigration policy actually discouraged the entry of aliens. Immigration law grew out of an ever lengthening list of excluded "undesirables" in the 1880's—first prostitutes and convicts, then Chinese, lunatics, and idiots, and in 1885, contract laborers. Current immigration law excludes more than 30 classes of "undesirable aliens," including homosexuals and security risks. The commission's predecessor, the 1907 Immigration Commission, headed by Senator William Dillingham,[4] demanded the first quantitative restrictions.[5] The 1921 Quota Act limited immigration from any country to 3 percent of the foreign-born persons from that country living in the United States in 1910. In 1924, the National Origins Law set an annual quota for each country, of 2 percent of a nationality's U.S. residents, and restricted total annual immigration to 150,000. Western hemisphere nations, including Mexico, were exempt from the quota.

In 1952, the current Immigration and Nationality Act (INA) was enacted over President Truman's veto. The INA reaffirmed national origins quotas. Amendments in 1965 eliminated the quotas and established a 7–tier system of family and skill preferences in order to rank would-be immigrants from each country. These amendments strengthened provisions that protect American workers from the competition of aliens. Needed immigrants had to show that American workers were not available to fill vacant jobs and that their employment would not adversely affect U.S. wages and working conditions.

The 1965 amendments replaced national origins quotas with a 20,000-per-country limit on quota immigrants from Eastern Hemisphere nations. Those nations, combined, could send 170,000 immigrants to the United States annually; Western Hemisphere nations were given 120,000 immigrant slots, but no country limits or preference system were imposed. In 1976, the INA was amended to extend the preference system and 20,000-per-country limit to the Western Hemisphere, and in 1978, hemisphere quotas were replaced by a single worldwide quota of 290,000. The 1980 Refugee Act put seventh preference refugees under a separate 50,000-person ceiling but left 270,000 slots for relatives and needed workers.

The research issue

The commissioners were divided on whether to conduct more research or whether the first priority was to build a consensus based on past research and reform proposals. This failure to agree resulted in simultaneous research, public hearings, and public relations strategies. Research included 22 studies of the economic and social progress of recently arrived immigrants and refugees, and a series of 24 consultations with experts, concerning topics ranging from illegal immigration to refugee issues. Public hearings were held in 12 cities across the country and attracted 700 witnesses. As a matter of public relations the commission attempted to confer with a variety of special interest groups.

Many felt that the commission should not make unpopular control and enforcement recommendations until it could quantify the benefits and costs of current migration patterns. A few commissioners wanted to begin a multiyear, longitudinal study of legal immigrants, because research on illegal aliens did not promise precise results.[6] However, the majority stressed that research must focus on the impacts of illegal aliens and seek answers to relevant questions, even if it were difficult.[7] The result was a standoff and no new substantive research. The commission's research and public hearings thus yielded a 916–page staff report and nine appendix volumes which do not expand the information base significantly. Instead, the report presents a general review of the evolution of immigration law, an overview of current problems, and analyses of the experiences of particular immigrant groups.

What kind of research on illegal aliens would have been most useful? Three basic research strategies are available. First, legal immigrants can be studied and the results extrapolated to the illegal population. For example, the economic progress of Mexican immigrants can be studied, under the assumption that illegal entrants of the same educational attainment and age, and in the same location, are making similar progress despite their undocumented status. This extrapolation strategy promises estimates of unknown accuracy. Second, illegal aliens who worked in the United States can be interviewed after they return to their home countries, where they can talk freely about their experiences. These "sending country" samples have an acknowledged bias—they include only aliens who returned. Another problem is that such studies say far more about individuals than about the impact of aliens on U.S. labor markets. A third research strategy would be to study both apprehended and unapprehended illegal aliens within selected localities, so that data from different localities may be compared. Several commissioners endorsed the idea of local area studies to determine socioeconomic impacts in cities known to contain large numbers of aliens, such as Houston, Los Angeles, and New York. These studies could examine the structure and growth of local industries, changes in local work forces, and labor market indicators such as wage levels and dispersion, hiring and turnover patterns, and unionization.

In addition to local area studies, many academicians urged a replication of the 1975 David North and Marion Houstoun study of apprehended aliens.[8] Those urging such a study believed that a large sample of aliens would show the "maturation" of illegal aliens—more women, more from urban areas, and more nonfarm workers. A stratified sample would permit researchers to isolate aliens caught before finding jobs, those apprehended after working at least 2 weeks, and those in the United States for at least 2 years.

Apprehension identifies persons here illegally. However, the problem with studies based on apprehension statistics is that persons caught and deported may not be representative of the entire illegal alien population. If that population is considered to be a room of unknown size and shape, then the apprehended alien sample is a window of known dimensions that permits a look into the room. However, it is not possible to determine whether a particular window (or sample) is a peephole or picture window. If a series of apprehended alien studies leads to uniform conclusions on characteristics and impacts, it may be assumed that the underlying phenomenon is similar among urban areas.

Immigration research will always be controversial. Scientific inquiry requires theory, data, and hypothesis testing, but there is no theory that tells us how fast the population should increase. Immigration data are scanty and unreliable. More research cannot answer specific questions precisely, such as how much will gross national product, unemployment, and average hourly earnings change if 1 million additional immigrants were admitted. But it can document trends and permit qualitative answers to questions of interest—what impacts will current migration patterns have and how do the effects of immigration vary with local conditions? Immigration reform decisions will require value judgments, but these can be informed by research.

Legal immigration

The Immigration and Nationality Act anticipates the arrival of 270,000 quota immigrants each year. Each aspiring immigrant must clear three hurdles. First, the immigrant must qualify under one of the six preferences. Second, there must be a preference quota slot available, such as the 54,000 openings for unmarried adult sons and daughters of U.S. citizens, or the 27,000 slots available to immigrants of exceptional ability and their dependents. Finally, one of the sending country's 20,000 quota slots must be available to the applicant.[9]

The commission recommends that the system of nation and preference quotas be retained but that the worldwide quota be raised to 350,000. This increase "can advance U.S. interests without harming U.S. workers." The 350,000 quota would separate immigrants into two distinct channels. One group would continue the tradition of family unification, and some unspecified percentage of the 350,000 quota would be assigned to each family unification category. The second channel would admit independent immigrants—aliens with no qualifying family ties but with exceptional ability or money to invest in the United States. The commission could not agree whether these "new seed" immigrants should be admitted only if they have job offers from American employers and will not affect U.S. workers adversely (7 votes), or if they should be admitted without an individual test unless the Secretary of Labor has declared that their admission adversely affects U.S. workers (7 votes). It also failed to agree if the 54,000 slots now available to "needed permanent workers" should be increased in number, or decreased.

Current law exempts parents, spouses, and minor children of adult U.S. citizens from all quotas. In most years, 100,000 to 150,000 quota-exempt immigrants are admitted. The commission recommended quota exemptions for unmarried adult sons and daughters of adult U.S. citizens (14–2), grandparents of adult U.S. citizens (13–3), and brothers and sisters of adult U.S. citizens (9–7). These additional exemptions and the naturalization of recent immigrants and refugees could increase the annual exempt flow of immigrants to 200,000 or more.

Would-be immigrants from some countries face waiting lists of 5 years or more, which encourages illegal entry. To reduce these waiting lists, the commission recommended (12–4) that for 5 years, an additional 100,000 slots be added to the new 350,000 worldwide quota, increasing quota immigration 67 percent. If all these recommendations were adopted, permanent or "settler" immigration could average 650,000 annually for the first 5 years and 550,000 each year thereafter, but this total would not be a firm ceiling. Despite strong pleas from environmental protection and population control groups, only one commissioner voted to impose an absolute ceiling on immigrant admissions.

Refugees

Refugee policy was changed by the Refugee Act of 1980, which permits admission of 50,000 refugees annually. However, the actual refugee quota is determined each year by the President, in consultation with Congress. In fiscal year 1981, the refugee quota was 217,000, and in 1982, it is 173,000.

The act brought the American definition of "refugee" into conformity with the United Nations standard. Until 1980, the United States defined refugees as persons fleeing communist countries, communist-dominated areas, or any country in the Middle East. A refugee is any person outside his or her country of nationality or normal residence who is unable or unwilling to return "because of a well-founded fear of persecution on account of race, religion, nationality, membership in a particular social group, or political opinion."

The commission recommended, by a vote of 11 to 3, that the President, in consultation with Congress, continue to set an annual refugee quota that considers both geographic and individual factors. The dissenting commissioners argued that 1980 presidential consultations with Congress were only *pro forma*. Because three "emergency admissions" occurred for every "planned" refugee, they believe that in actuality the President controls refugee admissions virtually unchallenged.

The Refugee Act of 1980 was in force when Cuban "boat people" arrived in southern Florida during the summer of 1980. By the end of the year, 125,000 Cubans and 15,000 Haitians had come to the United States illegally and had sought political asylum.

Most of the Cubans were resettled with friends or relatives in the United States. However, the private boats transporting the refugees were forced to accommodate an estimated 24,000 expelled "criminals." Many of these persons had committed only political offenses, but at least 3,500 were common criminals who are now in jail or at a detention center in Fort Chaffee, Arkansas.

The United States had never before received waves of persons seeking mass asylum. The Administration did not permit the Cubans and Haitians to claim refugee status immediately, lest it appear that the United States would "reward" illegal entry or accept "pushouts" of criminal elements by foreign governments in the future, and because officially defined refugees are entitled to Federally-paid welfare, health, and training assistance for up to 3 years. Instead of being given refugee status, the Cubans and Haitians were made "special entrants" with indefinite parole status, and are eligible for half of normal refugee benefits.

Pushouts and mass asylum requests figured prominently in the commission's deliberations. The commissioners recommended 12–3 to "deter the illegal migration of those who are not likely to meet the criteria for acceptance." They urged that requests for asylum be individually and expeditiously processed and that the United States "not hesitate to deport those persons who come to U.S. shores—even when they come in large numbers—who do not meet the established criteria." To expedite these deportation reviews, the commission recommended, 13–1, the development of "group profiles" to determine probable eligibility for asylum, even though each individual would still be required to prove his or her own eligibility. To ensure fair treatment of all who claim refugee status in the future, it was proposed that an interagency body be established, to make contingency plans that deal more systematically with future pushouts and mass asylum requests.

Once in the United States, refugees must be resettled and integrated into society. Since 1975, nearly 1 million refugees have been accepted, half from Indochina. Traditionally, the Federal Government admits refugees, and voluntary associations (especially church groups) resettle them in conjunction with State and local governments. The expansion of social welfare programs, the large number of refugees, and the tendency of refugees to cluster in a few areas have encouraged the Federal Government to step up its refugee assistance efforts. The Refugee Act of 1980 allows the Federal Government to reimburse voluntary agencies for the costs of resettling refugees, $525 for each Indochinese refugee and $365 for each European, African, and Middle Eastern refugee.

The commission recommended (11–3) that State and local governments help plan for refugee resettlement and that Federal "impact aid" be considered for communities with concentrations of refugees. Federal policies now attempt (unsuccessfully) to disperse refugees. But the commission suggested that refugees be encouraged to cluster in particular areas because (1) they will anyway; (2) more experienced refugees can ease the integration of newcomers; and (3) it is less expensive to provide special education and training assistance to concentrations of refugees. It also recommended that refugee resettlement be geared to the achievement of self-sufficiency, and that cash assistance be terminated for refugees "who refuse appropriate job offers."[10]

Clustering refugees concentrates their economic benefits and costs. If refugees help revive declining neighborhoods and keep mobile industries from leaving an area, local economies benefit. If, on the other hand, unskilled refugees compete with disadvantaged residents for jobs and require costly education and social services, local economies suffer. No conclusive evidence is available to demonstrate that communities are generally either helped or hurt by an infusion of refugees.

Illegal immigration

The study of illegal immigration was the commission's principal purpose and the issue that defied resolution. The commission's sounding of public opinion found that most U.S. citizens want to close the half-open door of undocumented and illegal migration.

The number of illegal aliens in the United States is unknown. Partial evidence for the belief that an "uncontrolled hemorrhage of people" is flooding into the country comes from statistics on apprehended aliens. Since 1970, the Immigration and Naturalization Service (INS) has apprehended more than 8 million persons illegally in the United States (table 1). Today, most aliens are caught away from the worksite, and the decline in the percentage of workers among apprehended aliens in data for the 1970's reflects INS de-emphasis of worksite inspections, rather than a true increase in the proportion of jobless aliens. INS worksite inspections were halted on March 31, 1980 to encourage illegal aliens to participate in the decennial census. According to table 1, industrial worker apprehensions outnumbered farmworker apprehensions in 10 of the last 11 years.

Table 1. Illegal aliens apprehended in the United States, by type of employment, fiscal years 1970–80

Fiscal year	Agricultural			Industrial and other			Totals		
	Border patrol	Internal investigation	Total	Border patrol	Internal investigation	Total	Total workers	Total apprehensions	Workers as percent of apprehendees
1970	51,655	4,254	55,909	12,928	60,844	73,772	129,681	324,444	40.0
1971	73,399	5,314	78,713	13,924	62,145	76,069	154,782	397,517	38.9
1972	80,922	4,873	85,795	18,339	79,869	98,208	184,003	478,708	38.4
1973	99,384	6,342	105,726	23,547	102,370	125,917	231,643	647,512	35.8
1974	112,107	4,964	117,071	24,472	99,833	124,305	241,376	780,991	30.9
1975	110,184	4,742	114,926	26,797	108,665	135,462	250,388	756,819	33.1
1976	116,735	6,085	122,820	25,531	110,734	136,265	259,085	866,433	29.9
1977	94,665	14,381	109,046	24,763	114,528	139,291	248,337	1,033,427	24.0
1978	95,021	12,551	107,572	38,812	87,019	125,831	233,403	1,047,687	22.3
1979	102,482	11,013	113,495	31,177	89,074	120,251	233,746	1,069,400	21.9
1980	51,291	6,914	58,205	17,641	66,185	83,826	142,031	910,361	15.6

SOURCE: INS form C-23.18 for the years cited, obtained from publication noted in text footnote 11.

The commission reviewed the research on numbers and characteristics of illegal aliens and discovered five "common findings":

- A review of "other studies" led the Census Bureau to estimate that in 1978, 3.5 million to 5 million aliens may have been in the country illegally. Less than half were Mexican.
- Young single males are most likely to attempt to cross borders without inspection. Characteristics of persons using false documents or violating terms of their legal entry are more diverse.
- Almost all illegals are attracted by U.S. jobs that pay relatively high wages, often 5 to 10 times the earnings the alien could expect at home.
- Most illegal aliens earn at least the minimum wage. Many earn up to $6 or $7 per hour.
- There is no meaningful "average length of stay" in the United States. Some illegals do seasonal agricultural and construction work and leave the United States for 2 or 3 months each year. However, a growing proportion are expected to settle permanently, a trend anticipated by experience with migrant labor in other countries.

The commission also reviewed the impacts of illegal aliens on wages and unemployment, social service costs, and the "overall effect on U.S. society," finding almost "no consensus" among researchers. For example, the commissioners noted that opinions on job displacement range from zero (no displacement) to one (every illegal alien displaces one American). Similarly, the commission reported that some economists believe the presence of unskilled illegals increases the wages of skilled workers but depresses the wages offered to young and unskilled Americans. The commission's report adopted a middle position on both issues, arguing that illegals depress wages and increase unemployment to an unknown extent.

The commission took a firmer stance on the social service impacts of illegals, agreeing with persons who maintain that "illegal aliens do not place a substantial burden on social services." It sided with those who argue that illegals have payroll taxes deducted from their paychecks, but that for fear of being apprehended, illegals avoid the social service agencies that provide corresponding benefits. David North's tabulation of tax-based benefits received data from 10 studies supports the commission's position. However, his own 1981 study of 580 aliens found that half of the 147 illegals who qualified for unemployment insurance in California sought benefits, and 35 percent collected.[11]

The commission believes that illegal immigration must be curbed because "illegality breeds illegality." Mexican and American "coyotes" smuggle aliens across the border in a business so profitable "it rivals the smuggling of narcotics," but carries a much lower probability of apprehension and punishment.[12] A smuggling ring can transport 500 aliens weekly and charge each person $500, generating $12 million annually. In 1979, the INS arrested 18,500 such smugglers. But only a third of the 6,000 prosecuted were convicted.

Aliens illegally present are returned if apprehended. However, in 38 States it is not a crime to knowingly hire an illegal alien.[13] They, like other workers, are protected by labor standards laws. Aliens, whether aware of their rights or victims of systems they do not understand, generally do not complain when employers break wage and working condition laws. This is true regardless of the educational level of aliens, as most know that employers can easily report them to the INS. The alien who knows he should be paid $3.35 hourly instead of only $3 knows that the extra 35 cents over 1,000 work hours is $350. However, if a complaint leads to apprehension, the alien worker loses wages, may pay $300 to $400 in smuggling fees to get back into the United States, and must then find another job. Because of the border patrol's partial enforcement (which encourages the smuggling business) and because employers suffer no penalties for hiring illegal aliens, a system that delivers docile aliens to U.S. employers is maintained. The commission believes that this cycle of lawbreaking is illegal immigration's most pernicious impact, breeding disregard for all U.S. law.

Would a "guestworker program" curb pressures to enter the U.S. illegally? The commission "carefully weighed" the arguments for and against guestworkers, and recommended (14–2) against the introduction of a large-scale temporary worker program. Moreover, the commission recommended (14–2) to "streamline" the current H–2 program that admits temporary alien workers for temporary U.S. jobs. It suggested that the Department of Labor speed the certification process and that employers of H–2's be required to forward to the U.S. Treasury the payroll taxes they now withhold. Although the commission wants to end the dependence of any industry on a constant supply of H–2 workers, it is aware of the benefits of a slight expansion of the program.

Instead of guestworkers, the commission recommends enforcement to keep out illegal entrants, but amnesty for persons illegally in the United States before January 1, 1980. The enforcement package would include "better border and interior controls" and "economic deterrents in the workplace," such as more and better-trained border patrol officers and equipment, crackdowns on alien smugglers and visa abusers, civil and possibly criminal penalties for employers who knowingly hire illegal aliens (14–2), the development of a "more reliable" mechanism to separate legal workers from illegal aliens (8–7), and increased enforcement of wage and working conditions laws. After these enforcement measures are in place, the commission recommends a one-time amnesty program that would permit illegal aliens to request immigrant status. The details of the amnesty program are the preserve of Congress, but the commission estimates that 2.7 million persons may qualify if all undocumented aliens in the United States for at least 2 years have their status legalized.

Will border enforcement, employer sanctions, and identification cards stop illegal immigration? No one can give an unequivocal answer. Most immigration specialists believe that this three-pronged enforcement strategy will sharply reduce illegal immigration. Only 350 officers patrol the 2,000-mile Mexican border, one for every six miles. But most of the Mexican border is "self-policing" desert—60 percent of all apprehensions are made along 60 miles of border—the lower Rio Grande Valley, and around El Paso, Texas and Chula Vista, California. Similarly, fines and identification may not stop the hiring of illegal aliens, but penalties of $500 to $1,000 per illegal hire would reduce economic incentives that now make some employers prefer aliens. Immigration enforcement will never be completely successful. The policy question is what level of failure the United States is willing to tolerate.

Conclusions

Immigrants are responsible for about half of today's net population growth. If the commission's immigration and enforcement recommendations were accepted and net illegal immigration were reduced to 100,000 annually, the population would increase from 227 million today to a peak of 281 million in the year 2025. By 2030, more than 12 percent of the American population will be immigrants themselves, or descended from immigrants who arrived after 1980. If legal immigration is increased but enforcement efforts fail, permitting net annual illegal immigration of 500,000, the population would be 306 million by 2035. Post-1980 immigrants and their descendents would be 20 percent of the expanded population.

Immigration is an important component of population growth, and proposals to control it are subjected to a benefit-cost analysis. Many items, such as employer sanctions and identification cards, run counter to American tradition, and debate shifts from a particular immigration item to discussions of the unknown effects of current arrangements. The result is policy stagnation. There is widespread feeling that "something must be done" but no consensus on what to do. The employers benefiting from large-scale immigration fight to keep their cheap labor. Americans who lose are unable to quantify the impact of immigrants on their own economic well-being or organize to present their complaints.

Immigration reform is a social issue that generates tension but defies an easy solution. Tension is reflected in the psychological feeling that the United States should curb immigration in an era of limits. The reality is that immigration is at an alltime high. If the United States cannot grope its way toward a consensus, it risks extreme, probably restrictionist action.[14] ☐

FOOTNOTES

[1] Leon Bouvier, *The Impact of Immigration on U.S. Population Size* (Washington, Population Reference Bureau, 1981), p. 1.

[2] *U.S. Immigration Policy and the National Interest* (Washington, Select Commission on Immigration and Refugee Policy, 1981).

[3] Philip Martin, *Guestworker Programs: Lessons from Europe* (Washington, U.S. Department of Labor, Bureau of International Labor Affairs, 1980).

[4] The report of the Dillingham Commission, issued in 1911, blamed immigrants for depressed wages, industrial accidents, unemployment, and economic recession. Isaac Hourwich, in *Immigrants and Labor* (New York, P. P. Putnam & Sons, 1912) reviewed possible errors and biases in the Dillingham report.

[5] A third element of immigration law, facilitating entry for such persons as relatives and refugees, appeared after quantitative restrictions took effect. Congress exempted political offenders from the 1875 exclusion of criminals and agreed that refugees from religious persecution did not have to pass the 1917 literacy test.

[6] These commissioners blocked research on illegal immigration, a sentiment reflected in page xiii of the staff report: "Early in its deliberations the commission decided not to spend money on what would be a fruitless effort to count the number of illegal aliens." However, most commissioners wanted research on impacts, not numbers.

[7] A $1 million study of illegal aliens, begun in 1978, was supposed to interview 100,000 illegal aliens, but produced no useful data. Christopher Dickey, "$1 Million U.S. Study Yields Dubious Results," *Washington Post*, Dec. 10, 1978, p. 1.

[8] David North and Marion Houstoun, *The Characteristics and Role of Illegal Aliens in the U.S. Labor Market* (Washington, Linton & Co., 1975).

[9] The would-be immigrant must not belong to one of the 33 classes of excludable aliens, such as homosexuals, convicted felons, or Nazi war criminals.

[10] California has almost two-thirds of the Indochinese refugees. The deputy director of California's health agency, Joe Diaz, believes that many of the refugees will be dependent on welfare assistance indefinitely. See Robert Lindsay, "Refugees," *The New York Times*, June 7, 1981, p. 1.

[11] David North, *Government Records: What They Tell Us About the Role of Illegal Immigrants in the Labor Market and in Income Transfer Programs* (Washington, New TransCentury Foundation, 1981).

[12] John Credson, "Aliens are Contraband of Choice at Mexican Border," *The New York Times*, July 10, 1980, p. A10.

[13] The Farm Labor Contractors Act requires a farmer or crew leader to determine the status of workers before hiring them.

[14] Reprints of this article will be available from the Giannini Foundation, University of California at Davis, No. 636.

Communications

Another look at the link between work injuries and job experience

FRED SISKIND

In a recent article in the *Review*, Norman Root and Michael Hoefer investigated the relationship between duration of employment and worker injuries and illnesses.[1] Their analysis of 1976 and 1977 workers' compensation data for 10 States from the Bureau's Supplementary Data System (SDS) led them to conclude that "more workers are injured in the first month and year of service than any other month or year . . . "[2]

However, Root and Hoefer were unable to calculate injury incidence rates by employment duration to determine whether certain tenure groups experience disproportionately high numbers of injuries. Constructing such statistics would involve dividing the number of injuries by the total exposed population for each group. While the numerators for incidence rates—numbers of injuries by employment duration—are available from the SDS, the appropriate denominators—total numbers of injured and uninjured workers by tenure group—are more difficult to estimate.

The following analysis uses a ratio index approach to gauge the relative injury experience of workers by duration of employment.[3] Injury and employment duration information from the SDS is linked with work experience data for the general working population from the 1977 Quality of Employment Survey and the January 1978 Current Population Survey. As we will see, the results suggest that workers would generally be subject to disproportionately high injury rates during their first few months and years on the job.

Data sources

The *Supplementary Data System* gathers detailed injury and illness information from the workers' compensation system in each cooperating State[4] Data from 1977 and 1978 are used for this analysis. The 1977 information covers 540,000 cases in the 12 jurisdictions which reported employment duration information to the Bureau for that year: California, Colorado, Idaho, Indiana, Iowa, Kentucky, Maine, Maryland, New Mexico, South Dakota, the Virgin Islands, and Wyoming. Data for 1978 pertain to 705,440 injury and illness cases from 16 jurisdictions—Alaska, Hawaii, Montana, and Utah, in addition to those listed above.

Records of injuries and illnesses in such a small number of jurisdictions are not necessarily representative of nationwide experience. However, the 1977 data are from jurisdictions accounting for 21 percent of U.S. employment, and 1978 information covers 23 percent.

The *1977 Quality of Employment Survey* (QES) was conducted by the Survey Research Center of the University of Michigan under contract to the Department of Labor. During October-December 1977, a representative sample of 1,515 employed persons age 16 or older and currently employed 20 hours or more per week were interviewed concerning their work experiences. Two questions were asked regarding job tenure:

- "For how many years or months altogether have you worked for your present employer?"
- "For about how long altogether have you had your present job (with this employer)?"

Table 1. Relative injury experience by duration of employment, 1977

Employment duration	Percent distribution of			Incidence ratio 1 (1)/(2)	Incidence ratio 2 (1)/(3)
	Injury and illness cases[1] (1)	Wage and salary workers[2] (2)	All workers[3]		
1 to 3 months	20.8	11.3	14.0	1.84	1.49
4 to 12 months	22.9	16.0	18.1	1.43	1.27
2 to 3 years	20.4	19.6	21.8	1.04	.94
4 to 5 years	11.0	11.1	12.0	.99	.92
6 to 10 years	12.8	16.8	15.8	.76	.81
11 or more years	12.0	25.1	18.2	.48	.66

[1] Data are from unpublished SDS tables for 12 jurisdictions, and relate to workers age 16 and over by duration of employment.

[2] Data are from the *1977 Quality of Employment Survey* (Ann Arbor, Mich., The University of Michigan, 1979), table 9.3. They relate to workers age 16 and over by duration of employment with present employer.

[3] Data are from the *1977 Quality of Employment Survey*, table 9.5, and relate to workers age 16 and over by duration of employment in present job.

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Table 2. Relative injury experience by duration of employment, 1978

Employment duration	Percent distribution of — Injury and illness cases[1] (1)	Percent distribution of — All workers[2] (2)	Incidence ratio (1)/(2)
1 to 3 months	20.1	11.6	1.73
4 to 6 months	10.6	9.0	1.18
7 to 12 months	14.4	9.8	1.47
2 to 3 years	20.9	20.7	1.01
4 to 5 years	9.9	12.3	.80
6 to 10 years	12.5	15.7	.80
11 to 25 years	9.9	16.0	.61
25 to 35 years	1.4	3.9	.36
36 or more years	.2	1.1	.18

[1] Data are from unpublished SDS tables for 16 jurisdictions, and relate to workers age 16 and over.

[2] Data are from unpublished tables for the January 1978 CPS, and relate to all workers age 16 and over, and cover the same jurisdictions except the Virgin Islands.

The first question was asked of wage and salary workers. The second was asked of all workers, with the phrase in parentheses omitted for the self-employed.[5]

The *Current Population Survey* (CPS) is a monthly survey of 65,000 households which provides comprehensive labor force data. A supplement to the January 1978 CPS asked respondents for 56,000 households to specify the date on which each employed household member started working at his or her present job or business. Duration data calculated from the responses to that question, and a description of the sample design and estimating methods, have been published in a BLS Special Labor Force Report.[6]

Results of the ratio index analysis

Table 1 presents the percentage distribution of injury and illness cases by duration of employment from 1977 SDS data (column 1), and the distribution of workers by duration of employment from the QES survey (column 2 in terms of duration with current employer, and column 3 by duration in current job). Columns 4 and 5 present the ratios of the injury and illness percentages in column 1 to the overall employment duration percentages in columns 2 and 3, respectively. A ratio greater than 1 indicates that the percentage of injuries for workers in the particular duration group (for example, 1 to 3 months) is higher than the percentage of employment accounted for by the same group. A ratio below 1 indicates the opposite.

Whether employment duration is measured as time with present employer or time in current job, the data show a steady decline in risk as employment duration increases. First-year workers incur more than their share of injuries while those with more than 5 years on the job experience a disproportionately low number of injuries. But while the results support our expectations, they are limited in scope and should be interpreted with caution. The injury and work duration data from the SDS cover only 12 jurisdictions in 1977 and 16 jurisdictions in 1978, while the employment duration data from the QES reflect nationwide experience. And, QES data do not permit analysis of injury experience for different age and sex groups.

The limitations listed above can be overcome by using employment duration data from the CPS. These data are based on a much larger sample than the QES results, and are available for the separate jurisdictions (except the Virgin Islands). Table 2 thus provides information, comparable to that in table 1, which is limited to the jurisdictions which submitted injury data for 1978 to

Table 3. Relative injury experience by employment duration, sex, and age, 1978

Sex and age of worker	Employment duration: 1 to 3 months	4 to 6 months	7 to 12 months	2 to 3 years	4 to 5 years	6 to 10 years	11 to 25 years	26 to 35 years	36 years and over
Men									
Total, age 16 and over	2.02	1.33	1.63	1.09	.80	.76	.53	.30	.13
Age 16 to 17	1.69	.72	.95	.55	.30	...	...	...	...
Age 18 to 19	1.60	.83	1.02	.60	.24	...	...	...	...
Age 20 to 24	1.48	.97	1.32	.85	.64	.35	...	...	...
Age 25 to 34	1.76	1.27	1.51	.94	.73	.77	.49	...	...
Age 35 to 44	2.25	1.58	1.67	1.03	.85	.81	.67	.33	...
Age 45 to 54	2.19	1.59	1.84	1.36	1.13	1.10	.72	.53	.29
Age 55 to 64	2.34	1.29	1.40	1.43	1.10	1.08	1.09	.52	.36
Age 65 and over	2.91	1.55	2.35	1.65	.72	2.02	.99	.33	.12
Women									
Total, age 16 and over	1.33	1.00	1.30	.96	.86	.90	.80	.53	.25
Age 16 to 17	1.59	.71	.98	.68	.10	...	...	...	...
Age 18 to 19	1.53	.76	1.08	.64	.19	...	...	...	...
Age 20 to 24	1.36	.98	1.17	.82	.74	.53	...	...	...
Age 25 to 34	1.27	1.03	1.45	.92	.75	.91	.62	...	...
Age 35 to 44	1.23	1.13	1.22	1.08	1.02	.89	.76	.13	...
Age 45 to 54	.99	1.00	.98	1.69	1.02	.97	.81	.49	.33
Age 55 to 64	1.23	1.17	1.27	1.06	1.07	.91	1.01	.78	.43
Age 65 and over	.72	1.33	.96	1.34	.75	1.60	1.23	.50	.14

NOTE: Numerators for the ratios are data from unpublished SDS tables for 16 jurisdictions. Denominators are unpublished CPS data for January 1978 for the same jurisdictions, except the Virgin Islands.

the SDS. The ratio calculation results are generally similar to those shown in table 1. First-year workers experience more than their share of injuries while those with 4 or more years on the job incur a disproportionately low number of injuries. However, the decline in injury experience as job duration increases is not as smooth as that shown in table 1; for example, the 4-to-6-month ratio is below that for 7- to 12-months' tenure.

Table 3 presents ratios for detailed age categories by sex. Within most age categories, workers are more likely to experience an injury during their first few months or years on the job than after longer periods. However, for a few age groups—women 45 to 54, and both men and women 65 and over—a clear decline with tenure does not seem to prevail. Another interesting finding is that the disproportionately higher share of injuries experienced in the first 3 months, and generally the first year, in a new job is more marked for men than for women, particularly in the higher age categories. One possible explanation for this finding is the different industry and occupational mix for men and women. Men may work disproportionately in those industries and occupations where injuries are more common in the first few months on the job.[7]

THE FOREGOING ANALYSIS indicates that workers would generally experience disproportionately high injury rates during their first year on a new job or working for a new employer. The data for men and women by detailed age categories support this observation. Almost all age and sex groups have disproportionately high injury experiences during their first few months and first full year on a new job.

These findings are further evidence that special efforts should be made to assure that new employees and employees changing jobs are aware of good safety practices in the workplace. The Federal Mine Safety and Health Amendments Act of 1977 requires such safety training for miners. Similar efforts may be beneficial in many other industries. □

FOOTNOTES

[1] Norman Root and Michael Hoefer, "The first work-injury data available from new BLS study," *Monthly Labor Review*, January 1979, pp. 76–80.

Other published studies of the relationship between work injuries and work experience appear to be limited to specific industries, firms, or occupations, and most were conducted many years ago. See, for example, R. H. Van Zelst's study of copper plant workers, "Effect of Age and Experience on Accident Rates," *Journal of Applied Psychology*, October 1954, pp. 313–17; Amy Hewes, "Study of Accident Records in a Textile Mill," *Journal of Industrial Hygiene*, October 1921, pp. 187–95; Homer L. Humke's study of accidents in an industrial concern, "First Month Found Most Dangerous," *Personnel Journal*, March 1936, pp. 336–37; and Theodore Barry and Associates, "Behavioral Analysis of Workers and Job Hazards in the Roofing Industry," Contract No. HSM-99-72-121 for NIOSH, U.S. Department of Health, Education and Welfare, June 1975. Other studies are cited by Root and Hoefer.

[2] Root and Hoefer, "The first work-injury data," p. 77. Throughout the following discussion, the word "injury" will include both injuries and illnesses.

[3] See Norman Root and Deborah Sebastian, "BLS develops measure of job risk by occupation," *Monthly Labor Review*, October 1981, pp. 26–30, for a discussion of the ratio index technique applied to data for occupational groups.

[4] A more detailed description of the SDS is provided by Norman Root and David McCaffrey, "Providing more information on work injury and illness," *Monthly Labor Review*, April 1978, pp. 16–21.

[5] The QES is described in Robert P. Quinn and Graham L. Staines, *The 1977 Quality of Employment Survey* (Ann Arbor, Mich., The University of Michigan, 1979).

[6] Edward S. Sekscenski, "Job Tenure Declines as Work Force Changes," *Special Labor Force Report 235* (Bureau of Labor Statistics, 1980).

[7] Root and Hoefer, "The first work injury data," p. 79. Tables 3 and 4 show considerable variance in injury experience by occupation and industry.

Special Labor Force Reports—Summaries

More than half of all children have working mothers

Allyson Sherman Grossman

More children than ever before have mothers who are in the labor force. In March 1981, 31.8 million youngsters below age 18—54 percent of the Nation's total—had mothers who were either employed or looking for work. (See table 1.) Since 1970, the number of children with working mothers has grown by 6.2 million despite a 6.6-million decline in the children's population.[1]

By March 1981, a record 8.2 million children below age 6—45 percent of all preschoolers—had working mothers. A year earlier, these figures were 7.7 million or 43 percent. Two major factors accounted for this growth. First, the long-term increase in labor force activity among mothers below age 35 accelerated over the year. Their participation rate advanced by more than 2 percentage points, to reach 49 percent. Second, as the number of births among these women increased,[2] the population below age 6 grew by nearly 400,000. At the same time, the population of school-age children (6-to-17-year-olds) dropped substantially over the year, and the number of these children with working mothers also declined. Thus, preschoolers accounted for all of the year's net increase in the number of children with working mothers.

More young mothers working

Reflected in these patterns are the changing work and marital profiles of women born during the post-World War II baby boom. For instance, between March 1980 and March 1981, the number of working mothers increased by 600,000 to reach 18.4 million, and those with children below age 6 were responsible for 60 percent of the gain. Within this group, women between the ages of 25 and 34 registered the greatest increases. These women have generally been showing a propensity to delay marriage, postpone childbearing, and ultimately to have fewer children than women of comparable ages in the past. As a result, many of those who eventually become mothers have spent more years in the labor force than many of their predecessors, and they often choose to remain in the work force or return to it soon after childbearing. In contrast, the early marriage and prolific childbearing patterns of a generation ago resulted in the almost automatic and prolonged withdrawal of young mothers from the labor force.[3]

Because of these trends, the traditional concept of a family with the father as the only earner has changed dramatically. For example, both parents were earners in about 60 percent of all married-couple families with children under 18 years in 1981. (See table 2.) On average, these dual-earner families were smaller than comparable single-earner families. Fewer than 6 of 10 had more than one child, compared with nearly 7 of 10 of the one-earner families. Among families maintained by women, the presence of earners was affected by the number of children. For instance, of families with children, 65 percent of those without earners had more than one child compared with less than half of those with earners.

Other sociological changes of the 1970's also contributed to the growing number of children with working mothers. Two of these were the increase in the divorce rate and the growing occurrence of unwed mothers. In 1981, 11.6 million youngsters—1 of every 5—were living with their mother or their father only. This was almost 60 percent more than in 1970, when 1 of every 9 youngsters lived with only one parent. Most lived with their mothers; however, small increases have been posted in the number of children living only with their father. Black children were far more likely than white children to be living with one parent (50 percent of black children, compared with 15 percent of white children).

Despite the recent surge into the labor force of mothers with younger children, older children remain more likely than younger ones to have working mothers. For example, of all children between the ages of 14 through 17 who lived in two-parent families in March 1981, 60 percent had mothers in the labor force, compared with 56 percent of the 6-to-13-year-olds and 45 percent of

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Table 1. Number of children under 18, by age, type of family, and labor force status of mother, March 1980 and March 1981

[Numbers in thousands]

Type of family and labor force status of mother	Children under 18			Children 6 to 17			Children under 6		
	March 1980		March 1981	March 1980		March 1981	March 1980		March 1981
	Original	Revised		Original	Revised		Original	Revised	
Total children[1]	58,107	58,714	58,148	40,688	41,788	40,842	17,418	17,927	18,306
Mother in labor force	30,663	31,529	31,785	23,196	23,826	23,569	7,467	7,703	8,216
Mother not in labor force	26,493	27,208	26,269	16,722	17,168	16,398	9,771	10,040	9,871
Married-couple families	46,829	48,155	47,542	32,150	33,032	32,111	14,679	15,123	15,431
Mother in labor force	24,218	24,912	25,178	18,032	18,525	18,307	6,186	6,386	6,871
Mother not in labor force	22,611	23,244	22,364	14,118	14,507	13,804	8,493	8,737	8,560
Families maintained by women[2]	10,327	10,582	10,513	7,768	7,961	7,857	2,559	2,620	2,656
Mother in labor force	6,445	6,617	6,607	5,164	5,300	5,262	1,281	1,317	1,345
Mother not in labor force	3,882	3,964	3,906	2,604	2,661	2,595	1,278	1,303	1,311
Families maintained by men[2]	951	978	1,094	771	794	875	180	184	219

[1] Children are defined as "own" children of the family. Included are never-married daughters, sons, stepchildren and adopted children. Excluded are other related children such as grandchildren, nieces, nephews, cousins, and unrelated children.

[2] Includes only divorced, separated, widowed, or never-married persons.

NOTE: Due to rounding, sums of individual items may not equal totals.

the children under 6. Among children living with their mother only, the proportion whose mothers worked was two-thirds for those between the ages of 6 and 17 and one-half for those below age 6. (See table 3.)

Socioeconomic characteristics

Proportionately more black (59 percent) than white children (53 percent) had working mothers in 1981. This difference has been narrowing in recent years as white mothers have joined the work force at a faster pace than black mothers. Nevertheless, at every age level, black children in 2-parent families were still more likely than white children to have a working mother. In one-parent families, however, the situation was reversed; a larger share of white than black children had a working mother. Hispanic children were less apt than either white or black children to have working mothers.

Table 2. Families by presence and number of children under 18, number and relationship of earners in 1980, and family type, March 1981

[Numbers in thousands]

Number and relationship of earners by family type	No children under 18	With children under 18[1]				
		Total	1	2	3	4 or more
Total families	29,140	31,562	12,964	11,688	4,635	2,275
No earners	6,406	1,957	677	674	313	294
One earner	8,033	11,360	4,383	4,338	1,807	842
Two earners or more	14,701	18,234	7,925	6,657	2,514	1,139
Married-couple families	24,381	24,935	9,739	9,526	3,843	1,828
No earners	5,492	411	121	147	62	82
One earner	6,375	7,525	2,376	3,058	1,406	685
Husband	4,581	7,039	2,172	2,875	1,341	650
Wife	1,341	366	154	144	46	22
Other	453	119	50	38	19	12
Two earners or more	12,514	16,999	7,242	6,322	2,374	1,062
Husband and wife	10,637	14,919	6,317	5,717	2,068	817
Husband and other(s) not wife	1,511	1,868	804	546	289	229
Husband nonearner	365	211	119	59	18	14
Families maintained by women[2]	3,482	5,935	2,839	1,949	728	419
No earners	728	1,486	519	518	246	204
One earner	1,246	3,366	1,740	1,132	353	141
Two earners or more	1,508	1,081	580	299	129	173
Families maintained by men[2]	1,278	692	407	193	64	28
No earners	186	58	37	9	5	8
One earner	412	478	267	148	48	16
Two earners or more	679	155	103	36	11	4

[1] Children are defined as "own" children of the family. Included are never-married daughters, sons, stepchildren, and adopted children. Excluded are other related children such as grandchildren, nieces, nephews, cousins, and unrelated children.

[2] Includes only divorced, separated, widowed, or never-married persons.

NOTE: Due to rounding, sums of individual items may not equal totals.

Regardless of race, ethnic origin, or family type, children with a working mother were in families with considerably higher incomes, on average, than were children whose mother was out of the labor force. The median income in 1980 for all two-parent families with children was $26,500 when the mother worked and $21,300 when she did not.

Generally, white children live in families with higher incomes than black children. Family income for white, two-parent families with children averaged $26,900 when the mother was in the labor force and $21,700, when she was not. Comparable median incomes for black families were $23,000 when the mother worked and $14,900 when she did not. (See table 4.)

For some mothers, work is a necessity. It provides economic benefits that may constitute a major share of their offspring's support. In March 1981, one-fourth of all children—14.8 million in all—were living in families in which their father was absent (10.5 million), unemployed (2.4 million), or out of the labor force (1.9 million). More than half of all black children and nearly one-fifth of all white children lived in one of these circumstances. Between March 1980 and 1981, the total number of children in these situations remained steady as the increase in the number with unemployed fathers was offset by a decline in the numbers whose fathers were absent or out of the labor force. In each of these

Table 3. Children under 18 by age, type of family, and employment status of parents, March 1981

[Numbers in thousands]

Item	Children under 18			
	Total	14 to 17	6 to 13	Under 6
Total children[1]	59,148	14,607	26,235	18,306
Mother in labor force	31,785	8,698	14,871	8,216
Employed	29,269	8,193	13,688	7,388
Unemployed	2,516	505	1,183	828
Mother not in labor force	26,269	5,498	10,900	9,871
Married-couple families	47,542	11,329	20,782	15,431
Mother in labor force	25,178	6,763	11,544	6,871
Employed	23,516	6,426	10,800	6,290
Unemployed	1,662	337	744	581
Mother not in labor force	22,364	4,566	9,238	8,560
Father in labor force	44,763	10,490	19,605	14,669
Mother in labor force	24,042	6,372	11,060	6,610
Employed	22,462	6,060	10,349	6,053
Unemployed	1,580	312	711	557
Mother not in labor force	20,721	4,119	8,544	8,058
Father employed	42,376	10,003	18,632	13,741
Mother in labor force	22,744	6,086	10,485	6,173
Employed	21,383	5,813	9,865	5,704
Unemployed	1,361	273	620	468
Mother not in labor force	19,632	3,917	8,147	7,569
Father unemployed	2,387	487	973	927
Mother in labor force	1,298	285	575	438
Employed	1,079	246	484	348
Unemployed	219	39	91	89
Mother not in labor force	1,089	202	397	490
Father not in labor force	1,918	736	804	379
Mother in labor force	730	325	282	122
Employed	667	304	256	107
Unemployed	63	22	26	15
Mother not in labor force	1,188	410	521	256
Father in armed forces	861	103	373	384
Mother in labor force	407	66	201	139
Employed	388	62	195	131
Unemployed	19	4	7	8
Mother not in labor force	454	37	172	245
Other families:				
Maintained by women[2]	10,513	2,867	4,990	2,656
Mother in labor force	6,607	1,935	3,327	1,345
Employed	5,753	1,768	2,888	1,098
Unemployed	854	167	439	247
Mother not in labor force	3,906	932	1,663	1,311
Maintained by men[2]	1,094	411	464	219

[1] Children are defined as "own" children of the family. Included are never-married daughters, sons, stepchildren, and adopted children. Excluded are other related children such as grandchildren, nieces, nephews, cousins, and unrelated children.

[2] Includes only divorced, separated, widowed, or never-married persons.

NOTE: Due to rounding, sums of individual items may not equal totals.

cases, family income in 1980 was substantially greater when the mother was in the labor force.

Table 4. Children under 18 by age, type of family, labor force status of mother, race and Hispanic origin, March 1981, and median family income, 1980

[Numbers in thousands]

Item	Two-parent families			One-parent families maintained by women[1]		
	White	Black	Hispanic	White	Black	Hispanic
Total children[2]	42,129	3,960	3,688	6,583	3,698	1,074
Mother in labor force	21,865	2,520	1,571	4,375	2,090	423
Mother not in labor force	20,264	1,441	2,117	2,208	1,608	651
Children 14 to 17 years	10,024	987	744	1,867	947	230
Mother in labor force	5,916	649	350	1,356	549	110
Mother not in labor force	4,108	338	393	511	398	121
Children 6 to 13 years	18,416	1,754	1,572	3,157	1,708	512
Mother in labor force	10,057	1,147	714	2,200	1,040	217
Mother not in labor force	8,359	606	858	957	668	295
Children under 6 years	13,668	1,220	1,372	1,558	1,043	331
Mother in labor force	5,892	723	507	818	501	96
Mother not in labor force	7,794	496	865	740	541	236
	Median family income, 1980					
Total children	$24,200	$20,200	$17,100	$8,800	$6,300	$6,300
Mother in labor force	26,900	23,000	21,400	11,900	8,900	8,900
Mother not in labor force	21,700	14,900	14,000	5,000	4,400	5,400
Children 14 to 17 years	29,000	21,400	19,700	12,500	7,800	8,200
Mother in labor force	31,100	24,500	24,400	14,900	10,600	11,400
Mother not in labor force	25,400	13,800	15,600	6,800	5,400	6,400
Children 6 to 13 years	24,800	21,100	18,000	9,000	6,600	6,400
Mother in labor force	27,200	23,700	22,400	11,700	8,900	8,400
Mother not in labor force	22,400	16,100	14,200	5,100	4,600	5,600
Children under 6 years	21,000	18,400	15,000	5,300	4,600	5,300
Mother in labor force	22,800	20,300	18,500	8,200	7,300	8,000
Mother not in labor force	19,500	14,100	13,200	4,200	3,900	4,600

[1] Includes only divorced, separated, widowed, or never-married persons.

[2] Children are defined as "own" children of the family. Included are never-married daughters, sons, stepchildren, and adopted children. Excluded are other related children such as grandchildren, nieces, nephews, cousins, and unrelated children.

NOTE: Due to rounding, sums of individual items may not equal totals.

About 4.6 million families with children were in poverty during 1980. About 7 percent of married couples with children were poor as were 44 percent of the families maintained by women. For both family types, the incidence of poverty increased as family size grew. ☐

FOOTNOTES

[1] Unless otherwise indicated, the data in this report are from information collected in the March supplement to the Current Population Survey conducted and tabulated for the Bureau of Labor Statistics by the Bureau of Labor Statistics by the Bureau of the Census. The data have been inflated using population weights based on results from the 1980 census of population. The March 1980 data also have been revised to bring them in line with the new population weights and to make them comparable with the March 1981 data. Previously published 1980 data reflected population weights projected forward from the 1970 Census. The effect of the revision on the 1980 data is shown in table 1, which presents the original as well as the revised estimates for 1980.

As the table shows, the number of children with working mothers in March 1980 was revised upward by 866,000. Despite this, and similarly significant changes in other data for 1980, the various relationships and percentages based on the new estimates are nearly the same as those based on the previously published estimates.

[2] Final Natality Statistics, National Center for Health Statistics, Division of Vital Statistics, Natality Statistics.

[3] See Howard Hayghe, "Families and the rise of working wives—an overview," *Monthly Labor Review*, May 1976, pp. 12–19; Janet L. Norwood and Elizabeth Waldman, "Women in the Labor Force: Some New Data Series," U.S. Department of Labor, Report 575; and George Masnich and Mary Jo Bane, "The Nation's Families 1960–1990," (Massachusetts, Joint Center for Urban Studies of the Massachusetts Institute of Technology and Harvard University, 1980), pp. 52–85.

Research Summaries

Becoming a union leader: the path to local office

KAREN S. KOZIARA, MARY I. BRADLEY, AND DAVID A. PIERSON

Although there are many commonly held notions about why and how people become union officers, there is little empirical information about the process of becoming one, particularly at the local level. Much of what is known about local union officers comes from studies done in the 1950's and early 1960's. Although these studies focused on analyzing the functions or operations of local unions, they do provide information on their leadership.[1]

Based on prior research, there has been some preliminary theoretical work on the process of officer selection. However, the results have been used primarily to explain why women are underrepresented in union office, rather than to provide information on who becomes a union officer, and why and how they become one.[2] This paper examines more general hypotheses about the officer selection process suggested by earlier studies.

Selecting an officer

We assume that the decisions of both union members, including officers, and candidates are important in the leadership selection process, and that perceptions of members and candidates are an essential part of the decisionmaking. The significance of member perceptions and candidate self-evaluations in officer selection is that people act upon what they believe to be true, rather than reality itself.[3]

Both members, including officers, and candidates compare candidates' perceived qualifications to requirements of office. If members perceive that a candidate meets the latter, he or she can become an officer. However, if the candidate is viewed as unqualified, the candidate cannot attain office. Similarly, people do not run for office unless they think of themselves as qualified and acceptable to other members and officers, and believe the rewards of office will meet their needs.

Drawing from earlier research on union leadership, our study was designed to test several hypotheses. Two closely related ones are first, that time as a union member, and particularly that spent as an officer, results in members and candidates seeing a candidate as being sufficiently experienced to hold higher office; and second, that experience in lower office is seen as an important qualification for higher office, and may even be a prerequisite for holding top local positions.

Self-perceptions of readiness for office are likely to be enhanced by time with the union and prior experience in its administration. These will also be affected by indications from members and current officers that they perceive the candidates as qualified for office. Finally, willingness to take office requires that candidates see the rewards of office as meaningful.

Methodology used

The data used to analyze these hypotheses are from a study of the administration and structure of eight large local unions, varying in size from 1,500 to 12,000 members, in three Eastern States. Three of these locals are in the public sector and five are in the private sector. Service, professional, and industrial unions are included. Indepth interviews with each local's top officers (presidents, vice presidents, secretary-treasurers, and executive board members) were included as part of a sophisticated case study. Interviews were conducted by two-person interdisciplinary teams, each consisting of an industrial relations specialist and an organizational behavior specialist. The team approach was used to check interrater reliability and reduce probability of disciplinary-based selective perception. The results provide a rich source of qualitative and quantitative information about union leadership and administration.

Who were the respondents?

Thirty-eight elected union officers were interviewed and placed in one of two categories. The first consists

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primarily of local presidents; however, in two locals an elected manager or director had the major administrative responsibility and was included in this category. It contains a total of 10 officers—8 white men, 1 black man, and 1 white woman.

The second category has 28 people, including vice presidents, secretary-treasurers, and other executive board members. It is made up of 17 whites, 10 blacks, and 1 Hispanic. There are 23 men and 5 women in this group.

Prior union administrative experience

As mentioned earlier, prior union involvement and administrative experience was hypothesized to be a prerequisite for election to top local leadership. Of the presidents responding to the question about number of previous positions, all had held some with the union prior to their current job. Six had held three previous positions; three had held two; and none had held fewer than two. The mean number of positions held beforehand was 2.66.

The respondents in the vice president category had somewhat less experience, but their responses followed a similar pattern. Three had three previous positions, eight had had two, 14 had had one, and two officers reported that their current position was their first in union administration. The mean number of prior offices was 1.44.

These responses indicate that union presidents and vice presidents usually have prior union experience before being elected to their current office, and that presidents have somewhat more experience in prior office than do vice presidents.

The respondents' prior union experience shows presidents to have spent an average of 17 years in the local, compared with 15 years for vice presidents. The presidents had spent about 15 years in administrative positions, including their current positions. This indicates that most of the presidents began their path to office relatively soon after joining a union.

The vice presidents had been members of the local an average of 15 years. They had spent an average of 9.3 years as a union officer, and 3.9 years in their current positions. This suggests that although presidents appear to become active in union administration sooner than vice presidents, involvement for both groups actually begins within 5 years of their initial membership.

The first union administrative position for most officers was shop steward (6 of 9 presidents and 22 of 27 vice presidents). Most officers who did not start as steward began with less responsible positions, such as that of trustee. In only a few cases did they have as their first position an office more responsible than shop steward. Generally, these officers had been charter members of the local, and had begun in executive board or similar positions.

In six instances, officers had begun their union careers in other locals, which subsequently merged with their current organizations, and continued in administration after the mergers. None showed a pattern of changing locals in a quest for higher administrative office.

Most officers interviewed had progressed steadily to positions of increased responsibility in the union (all presidents and 22 of 28 vice presidents). Practically none had breaks in their careers as union officers. Many reasons could be suggested for this finding; however, a pattern appears clear. People who achieve the highest elected positions in union office begin their careers early in their union tenure at entry level positions (most often shop steward) and usually have uninterrupted careers as they progress to more responsible positions. One of the implications of this finding is that when there are election challenges to incumbent leaders, they do not come from members outside the leadership hierarchy but from people already in the established network. This reinforces the idea that experience is a major variable influencing how potential candidates for office are perceived by themselves and others. It is also consistent with the explanation for the paucity of women in union office, which suggests that interrupted work careers inhibit advancement to other positions.[4]

Member and officer perceptions

One of the assumptions mentioned earlier in describing the selection of union officers is that perceptions of officers, members, and candidates are an important part of the decisionmaking process. Participants' responses as to why they became union officers are supportive of this idea. Five of the respondents in the president category were asked either by officers or union members to run for office. Similarly, 20 of 26 respondents in the vice president category reported originally running for office at the urging of either officers or members. This is consistent with the hypothesis that members and candidates both must see a candidate's qualifications for office as congruent with the demands of office. It also suggests that an important element influencing candidates' self-evaluations is the communication to them of the positive perceptions of members or officers.

Candidates' self-perceptions

In addition to the encouraging feedback from officers and other members, the union officials interviewed initially had positive self-perceptions of their ability to handle the responsibilities of union office. Eight of ten presidents indicated that they originally ran for office because they thought they had something to contribute to the union. Eighteen of twenty-six vice presidents also gave this reason. Their responses included comments such as, "I can deal with people;" "I thought I could do a good job," and "I was as good as anyone else."

Rewards of office

Another factor assumed to influence the decision to become an officer is the candidate's perception of the rewards of office. Sayles and Strauss have identified six general rewards of union office: a sense of achievement or self-fulfillment, an outlet for aggression, an intellectual outlet, relief from monotonous jobs, opportunity to gain prestige of status, and a social outlet.[5] The officers interviewed identified as most important three of these rewards, which are closely related: self-fullfillment, intellectual outlet, and relief from monotonous jobs. Many officers, 31 of 37, saw union office as an opportunity for self-fulfillment or growth that could not be gotten from their jobs. Typical responses were, "I wanted to do something more than ring a bell everyday," "I wanted control over my own destiny," and "I wanted to do something meaningful."

In contrast, the other rewards of office were mentioned much less frequently. Only three officers indicated prestige as a reason for being a union officer; five gave desire for power as a motivating factor; and none mentioned either desire for an outlet for aggression or social opportunities.

Thus, the interviews show the importance of personal growth and fulfillment in causing people to want to hold office. The form that fulfillment takes varies according to individuals, as indicated by such statements as, "I like the freedom it brings me," to, "I wanted to show that black people were people, too." However, the significance of this growth is a theme that was apparent in nearly every interview.

Commitment to unionization, while not really a reward of office, was another common theme. Thirty of thirty-seven officers gave it as a reason for either entering or continuing to hold union office. Although this indicates idealism, the commitment was often expressed in very practical terms. A typical comment was, "Because of the way management is here, we needed a good union." However, belief in unionism, as well as desire for personal growth, was important in the decision to be a union officer.

ALTHOUGH THIS PAPER is based on a limited number of observations, the officers interviewed come from a variety of occupations and their responses show consistency. The pattern indicates that people who eventually become union officers become active in union administration early in their tenure with the union. Once having become active, officers remained involved in administration. They progressed up the administrative hierarchy, reaching top level office only after experience in other positions. In general, they are people who believe unions have a meaningful function to perform in our society, and see themselves as benefiting from the opportunity for personal growth provided by holding office. Important motivators encouraging them to be active are: urging by members and officers, self-perceptions, the desire for personal growth, and a commitment to unionization. ☐

——*FOOTNOTES*——

[1] Leonard R. Sayles and George Strauss, *The Local Union* (New York, Harcourt, Brace and World, 1953); Jack Barbash, *Labor's Grass Roots* (New York, Harper & Row Publishers, 1961); and Raymond Miles and J. B. Ritchie, "Leadership Attitudes among Union Officials," *Industrial Relations*, October 1968, pp. 108–17.

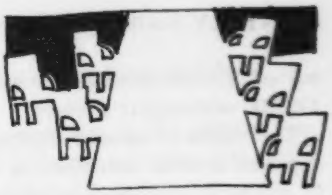
[2] Karen S. Koziara and David A. Pierson, "Barriers to Women Becoming Union Leaders," *Industrial Relations Research Association 33rd Annual Proceedings*, 1980, pp. 48–54.

[3] See, for example, Fritz Heider, *The Psychology of Interpersonal Relations* (New York, John Wiley & Sons, 1958), pp. 20–78.

[4] Alice H. Cook, "Women and American Trade Unions," *The Annals of the American Academy of Political and Social Science*, January 1968, pp. 123–32.

[5] Sayles and Strauss, *The Local Union*, pp. 64–65.

Developments in Industrial Relations



Early negotiations in the auto industry

With the Nation in the midst of a recession that began in midyear, and the domestic automobile industry still afflicted by a sales slump that began 2 years earlier, the United Auto Workers agreed to early negotiations with General Motors Corp. (GM), Ford Motor Co., and American Motors Corp. Early negotiations also were scheduled with International Harvester Co., which faced a possible loss of $500 million on its 1981 sales of trucks and farm equipment. Chrysler was not involved in the talks because its UAW-represented workers had agreed to wage concessions in November 1979, January 1980, and January 1981 that provided for more than a billion dollars less in compensation increases than the union's 1979 settlements with GM and Ford. The current GM and Ford (and Chrysler) agreements with the UAW expire in September 1982; the American Motors agreements expire in September 1983 (January 1983 at its Toledo, Ohio plant); and the International Harvester agreement expires in October 1982.

There was no immediate indication of whether the early negotiations might result in new multiyear contracts that would supplant the balance of existing agreements, or if any new contracts would not be effective until the expiration of the current agreements. Certainly, GM's and Ford's position was clear; they began 1981 by calling for immediate labor cost concessions to reduce a claimed $8-an-hour disparity with the Japanese auto producers. Throughout the year, the two companies intensified their drive for cost relief, citing their growing financial losses and increasing job cutbacks.

There also was no clear indication of what form any possible union concessions might take, although both GM and Ford insisted that it would not be necessary to reduce wages. Ford President Donald E. Petersen mentioned changes such as reducing the number of paid days off, tightening the requirements for medical leaves of absence, and broadening job definitions to permit more efficient utilization of employees. Earlier, he had called for a freeze on automatic cost-of-living pay adjustments. This proposal was unpopular with UAW members, who view cost-of-living adjustment clauses as a sacrosanct part of their contracts ever since they were first negotiated with GM in 1948.

GM Chairman Roger B. Smith said that a program to cut unexcused absences and increase productivity could substantially reduce operating costs. According to Smith, days off for sickness and accidents increased by 50 percent in the last 10 years and in 1980, GM lost $1 billion because of unexcused absences.

Ford and GM indicated willingness to follow the lead of Chrysler and adopt profit-sharing plans. But this approach was viewed with skepticism by many workers, who doubted that the companies could attain profitability in the near future.

An approach that was apparently more acceptable to the union as a basis for bargaining was included in an American Motors proposal made to the union in November. The proposal called for American Motors' employees to lend the company approximately $150 million, with repayment of the principal—and 10 percent interest—expected to begin in 1984. The money for the loan would be accrued by eliminating or reducing scheduled future improvements in wages and benefits.

To some extent, the UAW's decision to consider cost concessions was influenced by cuts in compensation of white-collar employees announced by Ford and GM. At Ford, the changes for 63,000 salaried employees included a loss of two vacation days in 1982; elimination of a paid holiday in December; exclusion of the cost-of-living allowance in calculation of paid time off (the allowance continued to be included in pay for time worked); and limiting overtime pay to straight-time rates for employees exempt from the requirements of the Fair Labor Standards Act.

At GM, the changes for the 138,000 white-collar employees in the United States included elimination of 8 casual days off, cuts in the vacation schedule, elimination of cost-of-living pay for paid time not worked, and increased insurance deductibles and reduced benefits. Reportedly, the company also was in the process of lay-

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ing off 13,000 employees from its worldwide staff of 190,000 white-collar workers.

The results of adverse economic conditions also were apparent in other industries, as union members generally agreed to employer requests for labor cost concessions:

- In Fort Wayne, Ind., 1,000 employees of Dana Corp.'s truck axle plant agreed to cuts in labor costs totaling $2 million a year. The revisions included a 6-month delay of a scheduled 3-percent wage increase, cancellation of a holiday bonus, and lower cost-of-living adjustments. The workers are represented by the Allied Industrial Workers.
- In the Detroit area, a scheduled shutdown of Federal Forge Inc. was averted when its 190 employees voted to give up four paid holidays and their cost-of-living adjustments. The plant produces forgings for the automobile industry. Its production workers are represented by the UAW.
- Also in the Detroit area, 150 employees of the Macomb Daily newspaper accepted a $30-a-week pay cut and elimination of their cost-of-living clause. The workers are represented by various unions.
- In the trucking industry, Motor Freight Express, Inc. announced that more than two-thirds of its 1,500 employees had joined the voluntary "job rescue plan" since its inception in September 1981. Under the plan, 21 percent of each participant's pay is withheld to aid the company, with the withholding to be reduced as the company's condition improves. The company operates in a number of States; its employees are represented by the Teamsters.

However, not all management efforts to reduce labor costs were successful:

- At American Airlines, unions representing 21,000 employees turned down a company request that employees accept a 5-percent pay reduction during the first quarter of 1982 and forgo raises for the rest of the year. An official of one of the unions said that the company had not proved that its financial condition warranted such a sacrifice.
- In the farm and construction equipment industry, 3,000 employees rejected Allis-Chalmers Corp.'s request for a 1-year wage freeze and other concessions that the company said were needed to help improve its ability to compete with other companies. An official of the Auto Workers said the company had reported a profit for the first 9 months of 1981 and its top executives were receiving excessive salaries.

Meatpacking contracts feature union concessions

The "old line" meatpacking companies' efforts to compete more effectively with newer, lower cost firms such as Iowa Beef Processors were strengthened when the United Food and Commercial Workers agreed to new contracts that provide for a number of wage and benefit concessions. The first settlement, with Armour and Co., set a pattern for accords with Wilson & Co. and George A. Hormel & Co. Later, other companies followed the pattern, bringing the total number of workers affected to about 40,000.

John Teets, chairman and chief executive officer of Armour (and chief executive officer of the parent Greyhound Corp.) called the contract "a historic first" for an industry that is in "total disarray." Teets said, "If we did not get this kind of contract, we would have to close many plants." Armour, which has closed 24 plants during the past 10 years, suffered a $5.7-million loss in 1980.

The new contract at Armour, negotiated slightly more than 8 months in advance of the scheduled expiration date of existing agreements, did not provide for any specified wage increase. However, the agreement is subject to a reopening on wages in September 1984, with the union permitted to strike if a settlement is not attained.

The cost-of-living clause, which provided for semiannual pay adjustments, was retained in the contract, but the 4,100 employees will not receive any actual adjustments. Instead, they will receive a one-time lump sum in December 1983 equal to the amount they would have received if the clause was operative during all of 1982. The payment will be at least $400, regardless of how few hours an employee worked in 1982. The lump-sum payment does not apply to workers hired after the effective date of the new contract. In addition, Armour is now permitted to pay new employees $1 less than the standard rate for their job during their first 60 days of work and 50 cents less during the following 30 days. The same reductions also will apply during the first 90 days and the succeeding 30 days for employees hired for new second or third shifts.

Benefit changes include a $2 increase in the pension rate, bringing it to $17 a month for each year of credited service. This change will be effective on September 1, 1985, the day after the contract expires.

In a concession to the union, Armour agreed not to close any plants, departments, or divisions before July 1, 1983. Armour also gave the union a copy of its capital investment plan for the next 5 years and will divulge its actual expenditures each year.

Jerry Wurf, AFSCME president, dies

Jerry Wurf, president of the State, County and Municipal Employees since 1964, died December 10 after a heart attack. During his tenure, the union grew from 220,000 to 1 million members, making it the largest public employee union in the AFL-CIO.

AFL-CIO President Lane Kirkland and secretary-treasurer Thomas R. Donohue called Wurf "one of the most dynamic figures of our time," and said that "the labor movement is richer because he passed our way."

Wurf's successor was General McEntee, head of the union's District Council 13 in Pennsylvania and a member of the union since 1958. In the weighted balloting by the 25-member executive board, McEntee received 483,080 of the electoral ballots cast and William Lucy, the union's secretary-treasurer, received 449,911.

Worker's effort to buy steel plant fails

A steelworker local's effort to save 3,000 jobs at Kaiser Steel Corp. suffered a setback when Kaiser said that an employer stock-ownership plan was not "desirable or workable." The local had started the purchase drive after the company announced plans to phase out its steelmaking operations in Fontana, Calif., and the nearby Eagle Mountain iron ore mine.

Kaiser operated at a profit during the first three quarters of 1981, but company officials said they did not view this as a turnaround from the losses suffered in each of the preceding 18 quarters. The company's plan calls for the continuation of steel finishing at Fontana, using purchased steel. Kaiser is the ninth largest firm in the industry; it does not have any other steelmaking plants.

Dupont workers reject union representation

The Steelworkers' 8-year organizing campaign at the DuPont Co. suffered a severe blow when 11,500 employees of 14 plants in seven States rejected representation by the union. The employees at six of the plants voted to retain their local independent unions while those at the other plants voted to remain nonunion.

John Oshinski, who has headed the union's organizing drive since 1979, said the DuPont workers turned down the opportunity to "throw off Dupont's total control of their lives," and thus, the "hard-fought campaign has now been concluded." Carl De Martino, DuPont's vice president for employee relations, called the result of the National Labor Relations Board elections "a strong endorsement of our policies and our sensitivity to people's needs."

DuPont has 66,000 employees eligible to be represented by unions. About 3,000 of them, at 13 plants, belong to international unions; about 23,000, at 33 plants, are represented by local independent unions. The Steelworkers represent a small number of workers at a facility in Biwabik, Minn. DuPont, the Nation's largest chemical maker, has about 100 plants in the United States.

Controllers can apply for other Federal jobs

There was another development in the dispute concerning the fate of the 11,500 fired air traffic controllers, as President Reagan modified his termination order to permit them to apply for Federal jobs, but not their old jobs. The controllers, discharged because of their strike against the Federal Government, can reapply for Federal employment in departments and agencies other than the Federal Aviation Administration.

In general, labor leaders expressed disappointment in the President's action. An official of AFL-CIO said, "This is not what the AFL-CIO Executive Council had in mind last week when it met with and urged the President to show compassion toward the air controllers." Robert E. Poli, president of the Professional Air Traffic Controllers Organization (PATCO) described the new policy as a "cruel hoax on both the fired controllers and the American taxpayer," explaining that, "there are few if any available Federal jobs."

Leaders of the Teamsters union, who also had met with the President as part of his efforts to improve the Administration's relations with organized labor, approved this change of policy.

J. J. O'Donnell, head of the Air Line Pilots Association, said ". . . any action the Administration takes, we are in accord with, 100 percent."

In a related development, the National Transportation Safety Board dismissed PATCO assertions that the air traffic control system was less safe than before the union's members were dismissed in August. However, the board did warn that continued heavy workloads for the 6,000 controllers and 4,000 supervisors and military controllers operating the system could eventually reduce flight safety.

A&P reduces its contribution to pension plan

The Great Atlantic & Pacific Tea Co. moved to stem operating losses by reducing the company's contribution to the pension plan for 10,000 salaried employees who are not represented by unions. A company official said the change was possible because the previous financing method did not fully take into account rising interest rates on fund investments, which resulted in a $200-million surplus.

Under the new formula, A&P's pension contribution will equal 4 percent of each employee's salary. Employees will contribute up to 6 percent of their salary, with A&P contributing an additional amount equal to half of what the employees pay in.

A&P also announced plans to close more unprofitable stores. The food store chain is the Nation's second largest, employing 65,000 workers in 30 States primarily east of the Mississippi River.

Private pension plans stressed

In a report on how to ensure adequate income for retirees, the Committee for Economic Development calls for more reliance on private pension plans and personal savings and less reliance on social security benefits. The nonpartisan group of business and academic leaders composing the committee said that with the current approach "future working generations will bear impossible funding burdens, and future retirees will face insecurity and hardship."

According to the committee, the overall cost of retirement programs rose from 2.3 percent of the Gross National Product in 1950 to 8.2 percent in 1977, and increasing social security costs had to be borne by future generations. To increase the role of private pension plans and personal savings, the committee recommended increasing the tax-free amounts that individuals can allocate to their personal retirement plans; making employees' contributions to private group plans tax deductible and encouraging employers to establish savings plans for employees; giving employers more flexibility in their pension plans, including delaying the normal retirement age to match future changes in social security laws; raising the eligibility age for full social security benefits to 68; and adjusting annual benefits according to changes in wages rather than the present method of adjustment according to movement of the Consumer Price Index.

Private secretaries can join union, court says

In a decision that was significant for thousands of office workers, the Supreme Court upheld the National Labor Relations Board's position that employees with access to confidential information are permitted to organize and are assured of other protections under the National Labor Relations Act, as long as the information does not involve labor-management relations. The board had held to this interpretation of the act (also known as the Wagner Act) since its passage in 1935.

The case arose when the personal secretary to the chief executive officer of the Hendricks County Rural Electric Membership Cooperative in Danville, Ind., was fired for joining other employees in petitioning for the reinstatement of a disabled worker. The secretary appealed to the National Labor Relations Board, which held that she was protected by the Wagner Act because she was not involved in labor relations matters.

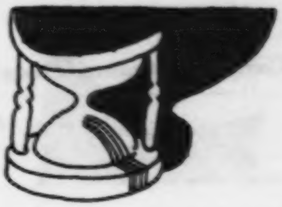
However, this decision was reversed on appeal to the U.S. Court of Appeals for the Seventh Circuit, which ruled that "all secretaries working in a confidential capacity" are not covered by the act. Its decision was based on a 1974 Supreme Court ruling that managerial employees are not covered by the act. According to the Circuit Court, a footnote to the 1974 ruling also appeared to exclude all confidential employees.

Writing for the majority, Supreme Court Justice William J. Brennan, Jr., said the 1974 footnote was a mistake. He noted that in 1947 the Congress passed the Taft-Hartley Act, which amended the Wagner Act to cover "professional employees." Justice Brennan concluded that Congress passed the amendment with full knowledge of the National Labor Relations Board position and that most of the newly covered professionals would have access to confidential information.

In a opinion written by Justice Lewis F. Powell, the four dissenting members of the court said that secretaries should be excluded from coverage of the Wagner Act because they "are privy to the most sensitive details of management decision-making."

The court's majority decision also means that 18 employees of the Malleable Iron Range Co. in Beaver Dam, Wis., involved in a concurrent case may not be classified as confidential and may join a union, unless the employer shows another reason for excluding them. □

Major Agreements Expiring Next Month



This list of collective bargaining agreements expiring in March is based on contracts on file in the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more.

Employer and location	Industry	Union[1]	Number of workers
American Can Co. (Interstate)	Paper	Printing and Graphic	1,000
Arizona Public Service Co.	Utilities	Electrical Workers (IBEW)	2,300
Associated General Contractors of America, Inc.: Baltimore Chapter	Construction	Laborers	3,000
New York Chapter, 4 agreements	Construction	Operating Engineers; Laborers; Carpenters; and Teamsters (Ind.)	17,600
Southern Florida Chapter, 2 agreements	Construction	Carpenters; and Laborers	8,000
BTEA Westchester & Putnam Building Construction Agreement (New York)	Construction	Operating Engineers	1,300
California Metal Trades Association (Fresno & Madera, Calif.)	Food products	Teamsters (Ind.)	2,000
Carolina Freight Council Over-The-Road Supplement Agreement (North Carolina and South Carolina)	Trucking	Teamsters (Ind.)	4,000
Central States Area Local Cartage Supplement Agreement (Interstate)	Trucking	Teamsters (Ind.)	67,000
Central States Area Over-The-Road Motor Freight Supplement Agreement (Interstate)	Trucking	Teamsters (Ind.)	41,000
Central States Iron-Steel and Special Commodity Rider (Interstate)	Trucking	Teamsters (Ind.)	14,850
Cincinnati Gas & Electric Co., and 1 other (Ohio & Kentucky)	Utilities	Electrical Workers (IBEW)	1,700
Clothing Manufacturers Association of the U.S. of America (Interstate)	Apparel	Clothing and Textile Workers	56,000
Commonwealth Edison, 2 agreements (Illinois)	Utilities	Electrical Workers (IBEW)	7,100
Cutler-Hammer, Inc., Special Products Division (Milwaukee, Wis.)	Electrical products	Machinists	1,200
Edition Bookbinders of New York, Inc.	Printing & publishing	Graphic Arts	1,000
Exxon Corp., Exxon Co., U.S.A. Baton Rouge Refinery & Chemical Plant (Baton Rouge La.)	Petroleum	Chemical Workers	2,400
First National Supermarkets, Inc. (Connecticut)	Retail trade	Food and Commercial Workers	2,700
Illinois Trucking Associations, Inc., and 1 other	Trucking	Teamsters (Ind.)	2,100
Illinois Trucking Associations, Inc., Highway Drivers	Trucking	Teamsters (Ind.)	4,000
Jewelry Manufacturers Associations, Inc., & Associated Jewelers, Inc. (New York, N.Y.)	Miscellaneous manufacturers	Jewelry Workers	2,600
Kaiser Foundation Hospitals (California)	Hospitals	Service Employees	9,000
Laborers Negotiating Committee of the Associated General Contractors of Indiana, Inc.	Construction	Laborers	20,000
Local Cartage Agreement for Hire & Private Carriers (Illinois)	Trucking	Chicago Truck Drivers (Ind.)	7,700
Master Rail-Truck Freight Agreement (Interstate)	Trucking	Teamsters (Ind.)	2,500
Mechanical Contractors Association of New Mexico, Inc.	Construction	Plumbers	1,500
Merchants Fast Motor Lines, Inc. (Texas)	Trucking	Union of Transportation Employees (Ind.)	1,250
Milwaukee Transport Service, Inc.	Transit	Amalgamated Transit Union	1,200
Mobile Oil Corp., Production Areas (Louisiana, Oklahoma, & Texas)	Crude, petroleum, and natural gas	Associated Petroleum Employees Union (Ind.)	1,800
National Automatic Sprinkler & Fire Control Association (Interstate)	Construction	Plumbers	7,000
National Master Freight Local Cartage (Philadelphia, Pa.)	Trucking	Teamsters (Ind.)	5,400
New Jersey & New York Area General Trucking Supplement Agreement	Trucking	Teamsters (Ind.)	19,000
Southern California Gas Co.	Utilities	Utility Workers; and Chemical Workers	5,900
Southern Conference Local Freight Forwarding Garage & Office Employees, 2 agreements (Interstate)	Trucking	Teamsters (Ind.)	4,150
Southern Conference Over-The-Road Motor Freight Supplement Agreement (Texas)	Trucking	Teamsters (Ind.)	12,400
Standard Restaurant Agreement (Cleveland, Ohio)	Restaurants	Hotel and Restaurant Employees	2,500

See footnotes at end of table.

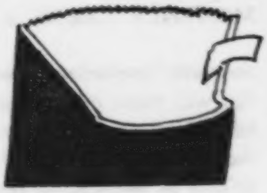
Continued—Collective bargaining agreements expiring

Employer and location	Industry	Union[1]	Number of workers
Union Carbide Corp. (Texas)	Chemicals	Texas Metal Trades Council	1,550
Virginia Freight Council Over-The-Road Supplement Agreement	Trucking	Teamsters (Ind.)	1,300
West Virginia Freight Local Cartage Supplement Agreement & Over-The-Road Supplement Agreement, 2 agreements	Trucking	Teamsters (Ind.)	2,600
Western Pennsylvania Motor Carriers Local Cartage Supplement Agreement	Trucking	Teamsters (Ind.)	3,900
Western States Area Local Cartage Supplement Agreement (Interstate)[2]	Trucking	Teamsters (Ind.)	46,000
Western States Area Over-The-Road Motor Freight Supplement Agreement (Interstate)[2]	Trucking	Teamsters (Ind.)	19,000
Western States Area Office Supplement Agreement (Interstate)[2]	Trucking	Teamsters (Ind.)	6,500
Western States Automotive Shop-Truck Agreement (Interstate)[2]	Trucking	Teamsters (Ind.)	2,400
Western States Trucking Maintenance Agreement (Interstate)[2]	Trucking	Machinists	3,000
	Government activity	Union or employee organization	
New York: Security Services Unit	Law enforcement	State, County and Municipal Employees	7,950
New York: Transit Authority Unit	Transportation	Transport Workers Union	33,000
Oregon: Tri-County Transportation District	Transportation	Amalgamated Transit Union	1,400

[1] Affiliated with AFL–CIO except where noted as independent (Ind.).

[2] Industry area (group of companies signing same contract).

Book Reviews



Taking early retirement

Early Retirement—Boon or Bane? A Study of Three Large Corporations. By Dean W. Morse and Susan H. Gray. Montclair, N.J., Allanheld, Osmun & Co. Publishers, Inc., 1980. 180 pp. $23.00.

This book is based on the survey responses of 1,000 professional, managerial, and technical workers who had been employed by three large corporations—an unidentified manufacturer, a retailer, and a utility firm. Dean W. Morse and Susan H. Gray make use of the survey responses to assess what prompted these individuals to retire, their status at retirement, and their experiences, satisfactions, and problems after retiring. They also raise questions about corporate and public policy toward retirement, pensions, employment of older workers, and social security.

The book documents the shift toward earlier retirement, especially for men. The traditional 65-year-old-norm as constituting the age for retirement had become the exception rather than the rule for this group. Three-fourths or more of the respondents had retired before reaching 65. Among those who retired in 1968–69, only 13 percent retired before age 60. In the group retiring in 1976–77, 30 percent had retired before age 60. While the Administration and others have suggested raising the age for full social security retirement benefits to 68, the Morse-Gray study adds to the evidence indicating a continuing preference by Americans to retire at a substantially earlier age.

The Morse-Gray retirees are a special group in terms of their occupational status and income. They include no blue-collar workers or routine clerical or sales employees. Their mean preretirement annual family income was $34,500 in 1977 dollars. Their mean family income in the 12 months preceding the survey amounted to $19,500. Based on a combination of private pensions, social security, and investment income, this is the group with the resources for a "good old age."

However, even for this group the authors make it clear that retirement and nonretirement are far from mutually exclusive options. Two out of five of the respondents earned some kind of income after retiring. While the professionals and managers who worked usually did so on less than a full-time basis, they, like the retired policeman or civil servant who embarks on a second career, symbolize the large numbers of persons who are in the labor force and who are also retired. This group, with its special problems and prospects, receives scant recognition in the official labor force statistics.

The post-retirement experience of the group was largely a happy one. They had ample time and at least minimally adequate resources to pursue hobbies, engage in voluntary community activities, or tinker around the house and garden. In this respect, the findings in the Morse-Gray report are similar to those in an earlier Conference Board study, Walter Wikstrom's *The Productive Retirement Years of Former Managers* Conference Board Report No. 747, 1978.

This portrayal of a happy retirement is marred by one major problem—inflation. Corporate pensions, unlike social security, are seldom indexed, and the adjustments made for inflation tend to be partial and ad hoc. The possibilities of offsetting the loss of purchasing power, caused by inflation, by working are severely limited by the 50-percent reduction of social security benefits for incomes earned from work beyond the legal limit, currently $6,000. These fears, of course, are real ones although the remedies lie beyond the scope of the book. With inflation continuing at an average rate of 10 percent a year, more than three-fifths of the original purchasing power of a pension that was not indexed would have been lost by the end of a 10-year period. With a sharp decline from recent inflation rates, say to a 5-percent annual level, the loss of purchasing power during this period would amount to nearly two-fifths.

The authors provide many insights into the experiences of the particular group they surveyed. They are on less firm ground when they attempt to generalize about implications for public policy of this special group. Here, the authors tend to hedge when a bolder statement might be more beneficial to the reader. For instance, the authors note that "there may be merit in (former) Secretary of Commerce Juanita Kreps' proposal to move gradually to raise the age qualifications for full (social security) benefits from 65 to 68." Is there, or isn't there merit in the proposal?

The book raises many questions regarding a society in which people are living longer but working fewer years. The authors consider the need for alternatives such as part-time or part-year employment or consultant jobs for retired persons seeking a second career. But will these options or proposals to raise the age of full social security benefits to 68 make any sense unless there has been far more progress than has been the case to date in eliminating age discrimination in hiring or in the limit on earnings from work in the social security legislation?

In summary, the book is well written and it presents much useful information about the experiences of the group it surveys. It is less successful when it attempts to generalize from this experience a national policy for older Americans.

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Risk assessment as a business tool

International Political Risk Assessment: The State of the Art. Edited by Theodore H. Moran. Washington, Georgetown University, School of Foreign Service, 1980. 80 pp. $10.

In the past few years, a Shah's dynasty has been hurled down in Iran, the Afghan nation has been overrun by Soviet tanks, a peacemaker has been gunned down in Egypt, and the international political risk analysts have found new prominence. This slender volume does the field of political risk studies a huge service by firmly establishing the focus of risk assessment as a tool for business decisionmaking rather than a curiosity in comparative politics and economics. The quality of the panel convened for the workshop that was the basis of this book, Theodore H. Moran's judgment in selecting papers, and the superb editorial pencil he exercised have combined to produce an excellent and timely product.

Two major channels of thought in political risk analysis emerge from this workshop. The first, put forth most explicitly in Conrad Pearson's how-to-do-it paper on expert-panel methodologies, emphasizes country-specific factors. Pearson's method elicits, weighs, blends, and standardizes the opinions of groups of country experts to attempt to estimate the chance some particular set of political events will occur in the country in question. Moran's concluding essay, on the other hand, emphasizes analysis of firm- or project-specific factors that tend to increase the investor's vulnerability to politically based action, regardless of the nature of the host country. These two approaches are, of course, the blades of the same scissors, as the economist Alfred Marshall might have analogized for the firm's "supply" of political vulnerability and the host's "demand" for certain forms of politico-economic aggression.

The concise nature of *International Political Risk Assessment* leads me to recommend it most highly to the senior multinational executives that would be faced with making decisions based in part on the work of political risk specialists; this excellent survey will encourage much more intelligent utilization of staff input. There is one question, however, that has puzzled me every time I have read or reviewed a piece on political risk management: the emphasis in all such pieces has been the Third World; why is this, given that the bulk of foreign direct investment is inter-industrial-nation and the potential financial impacts of such events as the recent Socialist electoral victories in France and Greece?

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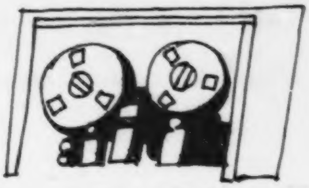
Current Labor Statistics



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NOTES ON CURRENT LABOR STATISTICS

This section of the *Review* presents the principal statistical series collected and calculated by the Bureau of Labor Statistics. A brief introduction to each group of tables provides definitions, notes on the data, sources, and other material usually found in footnotes.

Readers who need additional information are invited to consult the BLS regional offices listed on the inside front cover of this issue of the *Review*. Some general notes applicable to several series are given below.

Seasonal adjustment. Certain monthly and quarterly data are adjusted to eliminate the effect of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might otherwise mask short-term movements of the statistical series. Tables containing these data are identified as "seasonally adjusted." Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years.

Seasonally adjusted labor force data in tables 2–7 were revised in the February 1981 issue of the *Review* to reflect the preceding year's experience. Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are being seasonally adjusted with a new procedure called X-11/ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada Catalogue No. 12-564E, February 1980). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. Revisions of historical data continue to be made only at the end of each calendar year.

Annual revision of the seasonally adjusted payroll data in tables 11, 13, 16, and 18 begins with the August 1980 issue using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 33 and 34 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

Adjustments for price changes. Some data are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of $3 and a current price index number of 150, where 1967 = 100, the hourly rate expressed in 1967 dollars is $2 ($3/150 × 100 = $2). The resulting values are described as "real," "constant," or "1967" dollars.

Availability of information. Data that supplement the tables in this section are published by the Bureau of Labor Statistics in a variety of sources. Press releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule given below. The *BLS Handbook of Labor Statistics*, Bulletin 2070, provides more detailed data and greater historical coverage for most of the statistical series presented in the *Monthly Labor Review*. More information from the household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau, and in two comprehensive data books issued annually — *Employment and Earnings, United States* and *Employment and Earnings, States and Areas*. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

Symbols

p = preliminary. To improve the timeliness of some series, preliminary figures are issued based on representative but incomplete returns.
r = revised. Generally this revision reflects the availability of later data but may also reflect other adjustments.
n.e.c. = not elsewhere classified.

Schedule of release dates for major BLS statistical series

Title and frequency (monthly except where indicated)	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	February 5	January	March 5	February	1-11
Producer Price Index	February 12	January	March 12	February	26-30
Consumer Price Index	February 25	January	March 23	February	22-25
Real earnings	February 25	January	March 23	February	14-20
Productivity and costs:					
Nonfinancial corporations	...	...	March 1	4th quarter	31-34

NOTE: Because of budget reductions in the Bureau of Labor Statistics, the work stoppages series was discontinued effective with the release of December 1981 data in January 1982.

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 60,000 households beginning in May 1981, selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

Definitions

Employed persons are (1) those who worked for pay any time during the week which includes the 12th day of the month or who worked unpaid for 15 hours or more in a family-operated enterprise and (2) those who were temporarily absent from their regular jobs because of illness, vacation, industrial dispute, or similar reasons. A person working at more than one job is counted only in the job at which he or she worked the greatest number of hours.

Unemployed persons are those who did not work during the survey week, but were available for work except for temporary illness and had looked for jobs within the preceding 4 weeks. Persons who did not look for work because they were on layoff or waiting to start new jobs within the next 30 days are also counted among the unemployed. The **unemployment rate** represents the number unemployed as a percent of the civilian labor force.

The **civilian labor force** consists of all employed or unemployed persons in the civilian noninstitutional population; the **total labor force** includes military personnel. Persons **not in the labor force** are those not classified as employed or unemployed; this group includes persons retired, those engaged in their own housework, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job market factors, and those who are voluntarily idle. The **noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy.

Full-time workers are those employed at least 35 hours a week; **part-time workers** are those who work fewer hours. Workers on part-time schedules for economic reasons (such as slack work, terminating or starting a job during the week, material shortages, or inability to find full-time work) are among those counted as being on full-time status, under the assumption that they would be working full time if conditions permitted. The survey classifies unemployed persons in full-time or part-time status by their reported preferences for full-time or part-time work.

Notes on the data

From time to time, and especially after a decennial census, adjustments are made in the Current Population Survey figures to correct for estimating errors during the preceding years. These adjustments affect the comparability of historical data presented in table 1. A description of these adjustments and their effect on the various data series appear in the Explanatory Notes of *Employment and Earnings*.

Data in tables 2–7 are seasonally adjusted, based on the seasonal experience through December 1980.

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950–80

[Numbers in thousands]

Year	Total noninstitutional population	Total labor force: Number	Total labor force: Percent of population	Civilian labor force: Total	Employed: Total	Employed: Agriculture	Employed: Nonagricultural industries	Unemployed: Number	Unemployed: Percent of labor force	Not in labor force
1950	106,645	63,858	59.9	62,208	58,918	7,160	51,758	3,288	5.3	42,787
1955	112,732	68,072	60.4	65,023	62,170	6,450	55,722	2,852	4.4	44,660
1960	119,759	72,142	60.2	69,628	65,778	5,458	60,318	3,852	5.5	47,617
1964	127,224	75,830	59.6	73,091	69,305	4,523	64,782	3,786	5.2	51,394
1965	129,236	77,178	59.7	74,455	71,088	4,361	66,726	3,366	4.5	52,058
1966	131,180	78,893	60.1	75,770	72,895	3,979	68,915	2,875	3.8	52,288
1967	133,319	80,793	60.6	77,347	74,372	3,844	70,527	2,975	3.8	52,527
1968	135,562	82,272	60.7	78,737	75,920	3,817	72,103	2,817	3.6	53,291
1969	137,841	84,240	61.1	80,734	77,902	3,606	74,296	2,832	3.5	53,602
1970	140,182	85,903	61.3	82,715	78,627	3,462	75,165	4,088	4.9	54,280
1971	142,596	86,929	61.0	84,113	79,120	3,387	75,732	4,993	5.9	55,666
1972	145,775	88,991	61.0	86,542	81,702	3,472	78,230	4,840	5.6	56,785
1973	148,263	91,040	61.4	88,714	84,409	3,452	80,957	4,304	4.9	57,222
1974	150,827	93,240	61.8	91,011	85,936	3,492	82,443	5,076	5.6	57,587
1975	153,449	94,793	61.8	92,613	84,783	3,380	81,403	7,830	8.5	58,655
1976	156,048	96,917	62.1	94,773	87,485	3,297	84,188	7,288	7.7	59,130
1977	158,559	99,534	62.8	97,401	90,546	3,244	87,302	6,855	7.0	59,025
1978	161,058	102,537	63.7	100,420	94,373	3,342	91,031	6,047	6.0	58,521
1979	163,620	104,996	64.2	102,908	96,945	3,297	93,648	5,963	5.8	58,623
1980	166,246	106,821	64.3	104,719	97,270	3,310	93,960	7,448	7.1	59,425

2. Employment status by sex, age, and race, seasonally adjusted

[Numbers in thousands]

Employment status	Annual average		1980	1981											
	1979	1980	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
TOTAL															
Total noninstitutional population[1]	163,620	166,246	167,398	167,585	167,747	167,902	168,071	168,270	168,480	168,685	168,855	169,049	169,252	169,435	169,605
Total labor force	104,996	106,821	107,191	107,668	107,802	108,305	108,851	109,531	108,307	108,603	108,762	108,401	108,893	109,187	108,814
Civilian noninstitutional population[1]	161,532	164,143	165,272	165,460	165,627	165,774	165,941	166,145	166,349	166,546	166,695	166,884	167,095	167,277	167,441
Civilian labor force	102,908	104,719	105,067	105,543	105,681	106,177	106,722	107,406	106,176	106,464	106,602	106,236	106,736	107,029	106,650
Employed	96,945	97,270	97,282	97,696	97,927	98,412	98,976	99,235	98,392	98,962	98,944	98,270	98,217	98,025	97,188
Agriculture	3,297	3,310	3,394	3,403	3,281	3,276	3,463	3,353	3,265	3,258	3,370	3,310	3,337	3,363	3,115
Nonagricultural industries	93,648	93,960	93,888	94,294	94,646	95,136	95,513	95,882	95,127	95,704	95,574	94,959	94,880	94,662	94,072
Unemployed	5,963	7,448	7,785	7,847	7,754	7,764	7,746	8,171	7,784	7,502	7,657	7,966	8,520	9,004	9,462
Unemployment rate	5.8	7.1	7.4	7.4	7.3	7.3	7.3	7.6	7.3	7.0	7.2	7.5	8.0	8.4	8.9
Not in labor force	58,623	59,425	60,205	59,917	59,946	59,598	59,219	58,739	60,173	60,082	60,093	60,648	60,359	60,248	60,791
Men, 20 years and over															
Civilian noninstitutional population[1]	68,293	69,607	70,196	70,320	70,413	70,481	70,574	70,687	70,788	70,894	70,978	71,086	71,208	71,331	71,427
Civilian labor force	54,486	55,234	55,470	55,443	55,445	55,816	56,013	56,395	55,876	55,957	56,045	56,063	56,100	56,194	56,326
Employed	52,264	51,972	52,045	52,091	52,134	52,511	52,750	52,849	52,451	52,811	52,724	52,608	52,327	52,151	51,841
Agriculture	2,350	2,355	2,331	2,378	2,290	2,296	2,408	2,349	2,320	2,329	2,402	2,343	2,388	2,358	2,256
Nonagricultural industries	49,913	49,617	49,714	49,713	49,844	50,215	50,342	50,500	50,131	50,482	50,323	50,264	49,939	49,794	49,585
Unemployed	2,223	3,261	3,425	3,352	3,312	3,305	3,262	3,546	3,425	3,147	3,321	3,455	3,733	4,043	4,485
Unemployment rate	4.1	5.9	6.2	6.0	6.0	5.9	5.8	6.3	6.1	5.6	5.9	6.2	6.7	7.2	8.0
Not in labor force	13,807	14,373	14,726	14,877	14,968	14,665	14,561	14,292	14,912	14,937	14,933	15,023	15,108	15,137	15,101
Women, 20 years and over															
Civilian noninstitutional population[1]	76,860	78,295	78,959	79,071	79,175	79,271	79,377	79,498	79,617	79,739	79,848	79,968	80,085	80,211	80,321
Civilian labor force	38,910	40,243	40,570	40,942	41,090	41,293	41,481	41,852	41,743	41,879	41,857	41,395	41,911	42,113	41,883
Employed	36,696	37,696	37,820	38,191	38,410	38,567	38,760	39,014	39,011	39,082	39,155	38,576	38,958	39,050	38,737
Agriculture	591	575	665	621	615	606	603	583	562	575	601	603	583	655	548
Nonagricultural industries	36,107	37,120	37,155	37,570	37,794	37,961	38,157	38,431	38,449	38,507	38,554	37,973	38,376	38,395	38,190
Unemployed	2,213	2,547	2,750	2,750	2,680	2,725	2,721	2,838	2,731	2,797	2,701	2,819	2,953	3,062	3,145
Unemployment rate	5.7	6.3	6.8	6.7	6.5	6.6	6.6	6.8	6.5	6.7	6.5	6.8	7.0	7.3	7.5
Not in labor force	37,949	38,052	38,389	38,129	38,085	37,978	37,896	37,646	37,874	37,860	37,991	38,573	38,174	38,098	38,438
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	16,379	16,242	16,114	16,069	16,039	16,022	15,991	15,961	15,944	15,913	15,869	15,831	15,792	15,735	15,693
Civilian labor force	9,512	9,242	9,027	9,158	9,146	9,068	9,228	9,159	8,558	8,628	8,700	8,778	8,724	8,722	8,441
Employed	7,984	7,603	7,417	7,414	7,384	7,334	7,465	7,372	6,930	7,069	7,065	7,086	6,931	6,823	6,609
Agriculture	356	380	398	404	376	374	451	421	383	354	368	364	366	350	312
Nonagricultural industries	7,628	7,223	7,019	7,010	7,008	6,960	7,014	6,951	6,547	6,715	6,697	6,722	6,565	6,473	6,297
Unemployed	1,528	1,640	1,610	1,744	1,762	1,734	1,763	1,787	1,628	1,559	1,635	1,692	1,793	1,899	1,832
Unemployment rate	16.1	17.7	17.8	19.0	19.3	19.1	19.1	19.5	19.0	18.1	18.8	19.3	20.6	21.8	21.7
Not in labor force	6,867	7,000	7,087	6,911	6,893	6,954	6,763	6,802	7,386	7,285	7,169	7,053	7,068	7,013	7,252
White															
Civilian noninstitutional population[1]	141,614	143,657	144,500	144,651	144,774	144,882	145,006	145,160	145,316	145,464	145,575	145,715	145,871	146,007	146,129
Civilian labor force	90,602	92,171	92,383	92,832	93,035	93,313	93,860	94,506	93,464	93,767	93,789	93,355	93,845	94,045	93,658
Employed	86,025	86,380	86,377	86,620	86,940	87,291	87,791	88,083	87,500	87,979	88,046	87,329	87,344	87,058	86,312
Unemployed	4,577	5,790	6,006	6,213	6,095	6,022	6,069	6,422	5,964	5,787	5,743	6,026	6,501	6,987	7,346
Unemployment rate	5.1	6.3	6.5	6.7	6.6	6.5	6.5	6.8	6.4	6.2	6.1	6.5	6.9	7.4	7.8
Not in labor force	51,011	51,486	52,117	51,819	51,739	51,569	51,146	50,654	51,852	51,697	51,786	52,360	52,026	51,962	52,471
Black and other															
Civilian noninstitutional population[1]	19,918	20,486	20,771	20,809	20,853	20,892	20,936	20,985	21,033	21,081	21,120	21,169	21,224	21,270	21,312
Civilian labor force	12,306	12,548	12,668	12,684	12,598	12,765	12,899	12,895	12,741	12,658	12,793	12,872	12,913	12,951	12,969
Employed	10,920	10,890	10,895	11,051	10,942	11,020	11,193	11,138	10,928	10,939	10,877	10,924	10,905	10,944	10,883
Unemployed	1,386	1,658	1,773	1,634	1,656	1,745	1,706	1,757	1,813	1,719	1,916	1,948	2,008	2,007	2,086
Unemployment rate	11.3	13.2	14.0	12.9	13.1	13.7	13.2	13.6	14.2	13.6	15.0	15.1	15.5	15.5	16.1
Not in labor force	7,612	7,938	8,103	8,125	8,255	8,127	8,037	8,090	8,292	8,423	8,327	8,297	8,311	8,319	8,343

[1] As in table 1, population figures are not seasonally adjusted.

3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1980	1981											
	1979	1980	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
CHARACTERISTIC															
Total employed, 16 years and over	96,945	97,270	97,282	97,696	97,927	98,412	98,976	99,235	98,392	98,962	98,944	98,270	98,217	98,025	97,188
Men	56,499	55,988	55,920	56,012	56,045	56,383	56,688	56,718	56,026	56,494	56,366	56,349	56,046	55,783	55,341
Women	40,446	41,283	41,362	41,684	41,882	42,029	42,288	42,517	42,366	42,467	42,577	41,920	42,171	42,241	41,847
Married men, spouse present	39,090	38,302	38,231	38,182	38,113	38,365	38,510	38,498	38,216	38,283	38,315	38,169	38,050	37,798	37,557
Married women, spouse present	22,724	23,097	23,063	23,352	23,356	23,513	23,529	23,831	23,763	23,820	23,683	23,174	23,389	23,326	23,125
OCCUPATION															
White-collar workers	49,342	50,809	51,065	51,594	51,698	51,746	51,801	51,967	51,959	51,857	52,123	51,826	52,104	51,935	51,792
Professional and technical	15,050	15,613	15,810	15,965	15,813	15,827	15,754	15,688	16,057	15,966	16,299	16,254	16,347	16,294	16,414
Managers and administrators, except farm	10,516	10,919	11,009	11,363	11,488	11,565	11,444	11,260	11,174	11,418	11,217	11,341	11,434	11,210	11,074
Salesworkers	6,163	6,172	6,175	6,265	6,271	6,220	6,145	6,461	6,440	6,220	6,369	6,295	6,225	6,260	6,302
Clerical workers	17,613	18,105	18,071	18,001	18,125	18,135	18,457	18,557	18,288	18,254	18,238	17,937	18,099	18,172	18,001
Blue-collar workers	32,066	30,800	30,373	30,338	30,446	30,594	31,156	31,373	30,922	31,038	31,113	30,637	30,222	29,904	29,513
Craft and kindred workers	12,880	12,529	12,337	12,306	12,386	12,605	12,624	12,743	12,482	12,575	12,508	12,202	12,124	12,096	12,154
Operatives, except transport	10,909	10,346	10,194	10,331	10,390	10,189	10,524	10,608	10,550	10,567	10,501	10,334	10,187	9,913	9,858
Transport equipment operatives	3,612	3,468	3,402	3,322	3,361	3,363	3,411	3,390	3,425	3,481	3,499	3,453	3,530	3,364	3,296
Nonfarm laborers	4,665	4,456	4,440	4,380	4,309	4,437	4,596	4,632	4,466	4,415	4,605	4,649	4,381	4,531	4,205
Service workers	12,834	12,958	12,982	12,946	13,070	13,279	13,255	13,213	12,930	13,284	13,002	13,093	13,231	13,419	13,359
Farmworkers	2,703	2,704	2,804	2,737	2,862	2,679	2,834	2,707	2,648	2,680	2,732	2,717	2,752	2,791	2,588
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,413	1,384	1,411	1,465	1,336	1,338	1,524	1,464	1,377	1,457	1,472	1,416	1,470	1,395	1,295
Self-employed workers	1,580	1,628	1,655	1,615	1,610	1,615	1,648	1,644	1,657	1,568	1,629	1,649	1,616	1,631	1,580
Unpaid family workers	304	297	305	284	325	312	290	231	258	235	250	254	264	333	227
Nonagricultural industries:															
Wage and salary workers	86,540	86,706	86,513	87,125	87,236	87,870	88,195	88,877	87,734	88,291	88,189	87,457	87,556	87,285	86,827
Government	15,369	15,624	15,653	15,738	15,589	15,685	15,628	15,512	15,460	15,349	15,140	15,111	15,151	15,086	15,310
Private industries	71,171	71,081	70,860	71,387	71,647	72,185	72,567	73,365	72,274	72,942	73,048	72,346	72,405	72,199	71,517
Private households	1,240	1,166	1,110	1,197	1,176	1,235	1,241	1,164	1,146	1,211	1,236	1,052	1,114	1,173	1,270
Other industries	69,931	69,915	69,750	70,190	70,471	70,949	71,327	72,201	71,128	71,731	71,812	71,294	71,291	71,026	70,248
Self-employed workers	6,652	6,850	6,973	6,839	6,923	6,896	7,021	6,761	7,005	6,886	6,942	7,093	7,033	7,001	6,986
Unpaid family workers	455	404	396	422	371	354	306	338	360	369	378	392	448	423	400
PERSONS AT WORK[1]															
Nonagricultural industries	88,133	88,325	88,468	89,499	89,441	89,583	89,202	89,870	89,625	90,837	89,823	88,886	89,448	89,350	88,776
Full-time schedules	72,647	72,022	72,131	72,807	72,945	72,875	72,761	73,375	73,115	74,232	72,932	72,192	72,187	72,276	71,489
Part time for economic reasons	3,281	3,965	4,218	4,474	4,145	4,227	4,044	4,143	3,798	4,225	4,187	4,537	5,026	4,980	5,350
Usually work full time	1,325	1,669	1,647	1,698	1,622	1,638	1,517	1,630	1,367	1,632	1,654	1,675	2,023	1,900	2,152
Usually work part time	1,956	2,296	2,571	2,776	2,523	2,589	2,527	2,513	2,431	2,593	2,533	2,862	3,003	3,080	3,198
Part time for noneconomic reasons	12,205	12,338	12,119	12,218	12,351	12,481	12,397	12,352	12,713	12,380	12,704	12,157	12,235	12,094	11,937

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial disputes.

4. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1980	1981											
	1979	1980	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
CHARACTERISTIC															
Total, 16 years and over	5.8	7.1	7.4	7.4	7.3	7.3	7.3	7.6	7.3	7.0	7.2	7.5	8.0	8.4	8.9
Men, 20 years and over	4.1	5.9	6.2	6.0	6.0	5.9	5.8	6.3	6.1	5.6	5.9	6.2	6.7	7.2	8.0
Women, 20 years and over	5.7	6.3	6.8	6.7	6.5	6.6	6.6	6.8	6.5	6.7	6.5	6.8	7.0	7.3	7.5
Both sexes, 16 to 19 years	16.1	17.7	17.8	19.0	19.3	19.1	19.1	19.5	19.0	18.1	18.8	19.3	20.6	21.8	21.7
White, total	5.1	6.3	6.5	6.7	6.6	6.5	6.5	6.8	6.4	6.2	6.1	6.5	6.9	7.4	7.8
Men, 20 years and over	3.6	5.2	5.5	5.5	5.4	5.4	5.2	5.6	5.3	4.9	5.1	5.3	5.9	6.3	7.1
Women, 20 years and over	5.0	5.6	5.9	6.0	5.7	5.6	5.7	6.0	5.7	5.8	5.4	5.7	6.1	6.4	6.6
Both sexes, 16 to 19 years	13.9	14.8	15.4	16.8	17.4	16.9	17.2	18.0	16.5	16.1	15.6	17.0	17.6	19.3	19.3
Black and other, total	11.3	13.2	14.0	12.9	13.1	13.7	13.2	13.6	14.2	13.6	15.0	15.1	15.5	15.5	16.1
Men, 20 years and over	8.4	11.4	11.6	10.5	10.8	10.8	10.6	11.8	12.5	11.6	12.4	13.0	13.3	14.0	15.1
Women, 20 years and over	10.1	11.1	12.3	11.0	11.9	12.6	11.8	12.0	12.0	12.0	12.8	13.7	13.3	12.8	13.3
Both sexes, 16 to 19 years	33.5	35.8	37.5	36.5	35.4	37.3	38.1	33.6	38.6	36.4	45.7	37.5	42.9	41.3	39.6
Married men, spouse present	2.7	4.2	4.3	4.2	4.1	4.1	3.8	4.1	4.2	3.9	3.9	4.3	4.7	5.1	5.8
Married women, spouse present	5.1	5.8	5.8	6.2	5.8	6.0	5.9	5.9	5.6	5.6	5.3	5.9	6.1	6.6	6.7
Women who head families	8.3	9.1	10.4	10.5	9.6	9.4	9.8	10.3	10.6	11.5	9.8	10.6	10.7	10.9	10.6
Full-time workers	5.3	6.8	7.3	7.1	7.1	7.1	6.9	7.3	7.0	6.7	6.7	7.2	7.7	8.1	8.7
Part-time workers	8.7	8.7	8.2	9.2	9.1	9.0	9.0	9.7	9.2	9.3	9.7	9.6	9.5	10.2	9.2
Unemployed 15 weeks and over	1.2	1.7	2.3	2.2	2.1	2.1	2.0	2.0	2.2	2.0	2.1	2.1	2.1	2.2	2.2
Labor force time lost[1]	6.3	7.9	8.2	8.2	8.1	8.1	8.2	8.6	8.0	7.9	7.9	8.5	9.1	9.4	10.1
OCCUPATION															
White-collar workers	3.3	3.7	4.0	3.9	3.7	3.9	4.0	4.1	3.8	4.1	3.9	4.1	4.1	4.2	4.6
Professional and technical	2.4	2.5	2.6	2.8	2.6	2.7	3.2	2.9	2.8	2.8	2.4	2.8	2.6	2.7	3.5
Managers and administrators, except farm	1.9	2.4	2.5	2.4	2.4	2.6	2.4	2.7	2.8	2.7	2.8	2.7	2.7	3.0	3.1
Salesworkers	3.9	4.4	4.7	4.4	4.0	3.8	4.0	4.6	4.1	5.1	4.7	5.2	4.9	5.2	4.9
Clerical workers	4.6	5.3	5.8	5.7	5.3	5.9	5.6	5.6	5.3	5.7	5.6	5.7	6.1	6.1	6.3
Blue-collar workers	6.9	10.0	10.5	10.2	10.1	9.8	9.6	10.0	9.8	9.4	9.3	10.2	11.0	11.8	12.9
Craft and kindred workers	4.5	6.6	7.1	6.8	7.2	7.1	6.8	7.7	7.2	6.7	6.9	7.6	8.4	8.4	9.5
Operatives, except transport	8.4	12.2	12.9	12.1	11.9	11.3	11.5	11.9	11.0	11.1	11.0	11.5	12.8	14.2	15.6
Transport equipment operatives	5.4	8.8	8.8	9.1	8.3	9.3	8.1	8.2	8.4	6.9	7.9	8.9	7.9	10.7	10.4
Nonfarm laborers	10.8	14.6	14.8	15.0	14.9	14.1	13.8	13.1	14.8	14.2	12.9	14.4	15.7	16.2	17.2
Service workers	7.1	7.9	7.8	8.0	8.7	8.1	8.5	9.4	9.0	8.0	8.9	8.9	9.3	9.8	9.4
Farmworkers	3.8	4.4	4.0	5.0	4.7	5.1	3.7	5.4	6.0	4.5	5.6	3.7	6.1	6.1	6.2
INDUSTRY															
Nonagricultural private wage and salary workers[2]	5.7	7.4	7.7	7.5	7.5	7.3	7.2	7.8	7.4	7.2	7.2	7.6	8.1	8.5	9.2
Construction	10.2	14.2	13.8	13.3	13.2	14.7	14.4	16.3	16.6	15.0	16.7	16.3	18.0	18.2	18.1
Manufacturing	5.5	8.5	8.8	8.4	8.4	8.0	7.4	7.9	7.6	7.3	7.0	7.6	8.6	9.4	11.0
Durable goods	5.0	8.9	9.0	8.3	8.5	7.9	7.3	7.3	7.4	7.3	6.4	7.6	8.6	9.4	11.8
Nondurable goods	6.4	7.9	8.5	8.5	8.2	8.3	7.6	8.9	7.8	7.3	7.9	8.0	8.6	9.5	9.7
Transportation and public utilities	3.7	4.9	4.9	5.8	5.5	6.4	5.7	5.9	4.7	4.0	4.8	4.6	4.6	5.5	6.2
Wholesale and retail trade	6.5	7.4	8.3	7.6	7.6	7.3	7.3	8.4	7.5	7.9	7.8	8.6	8.3	8.7	9.1
Finance and service industries	4.9	5.3	5.5	5.8	6.0	5.6	5.9	5.9	5.8	5.6	5.6	5.9	6.3	6.1	6.5
Government workers	3.7	4.1	4.1	4.4	4.3	4.6	4.9	4.8	4.5	4.5	4.4	4.6	4.6	5.3	5.0
Agricultural wage and salary workers	9.1	10.8	10.6	11.5	12.1	11.9	9.1	11.1	13.1	10.3	12.6	10.6	13.3	14.4	14.7

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[1] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

[2] Includes mining, not shown separately.

5. Unemployment rates, by sex and age, seasonally adjusted

Sex and age	Annual average		1980	1981											
	1979	1980	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total, 16 years and over	5.8	7.1	7.4	7.4	7.3	7.3	7.3	7.6	7.3	7.0	7.2	7.5	8.0	8.4	8.9
16 to 19 years	16.1	17.7	17.8	19.0	19.3	19.1	19.1	19.5	19.0	18.1	18.8	19.3	20.6	21.8	21.7
16 to 17 years	18.1	20.0	19.9	21.0	21.4	21.3	22.0	21.6	22.6	19.3	20.5	21.2	21.4	23.1	22.1
18 to 19 years	14.6	16.1	16.4	17.5	17.9	17.7	17.2	18.2	17.3	17.7	17.4	18.1	19.9	20.7	21.4
20 to 24 years	9.0	11.5	11.7	11.9	11.8	11.7	12.1	12.9	12.1	11.3	11.8	12.1	12.8	13.0	13.7
25 years and over	3.9	5.0	5.3	5.3	5.1	5.2	5.0	5.3	5.2	5.1	5.1	5.4	5.8	6.1	6.5
25 to 54 years	4.1	5.4	5.8	5.7	5.5	5.5	5.4	5.6	5.6	5.4	5.4	5.8	6.1	6.6	7.1
55 years and over	3.0	3.3	3.5	3.5	3.6	3.7	3.3	3.3	3.4	3.5	3.5	3.8	3.9	3.7	4.2
Men, 16 years and over	5.1	6.9	7.2	7.2	7.1	7.0	6.9	7.4	7.1	6.6	7.0	7.2	7.7	8.3	9.1
16 to 19 years	15.8	18.2	19.0	20.3	20.1	19.5	19.3	20.2	19.8	18.4	19.7	19.3	19.7	22.0	22.8
16 to 17 years	17.9	20.4	20.5	23.0	22.1	21.1	22.7	22.7	24.4	19.8	21.5	21.2	20.6	23.0	23.0
18 to 19 years	14.2	16.7	17.8	18.5	18.7	18.6	17.0	18.3	18.1	17.8	18.1	18.1	19.1	21.2	22.6
20 to 24 years	8.6	12.5	12.5	12.8	12.7	13.0	13.2	14.2	12.8	11.3	12.7	12.9	13.9	14.8	14.9
25 years and over	3.3	4.7	4.9	4.9	4.8	4.7	4.6	4.8	5.0	4.7	4.8	5.0	5.5	5.8	6.5
25 to 54 years	3.4	5.1	5.4	5.2	5.2	5.1	4.9	5.1	5.3	4.9	5.0	5.5	5.9	6.4	7.1
55 years and over	2.9	3.3	3.3	3.4	3.4	3.2	3.1	3.4	3.5	3.4	3.4	3.5	3.8	3.6	4.5
Women, 16 years and over	6.8	7.4	7.7	7.7	7.6	7.7	7.7	7.9	7.6	7.7	7.5	7.9	8.3	8.5	8.6
16 to 19 years	16.4	17.2	16.5	17.5	18.4	18.7	18.9	18.7	18.2	17.7	17.8	19.3	21.5	21.5	20.4
16 to 17 years	18.3	19.5	19.3	18.7	20.5	21.6	21.1	20.4	20.6	18.7	19.5	21.1	22.4	23.3	20.9
18 to 19 years	15.0	15.6	14.8	16.4	17.0	16.5	17.4	18.2	16.4	17.5	16.8	18.1	20.8	20.1	20.0
20 to 24 years	9.6	10.3	10.8	10.8	10.8	10.1	10.9	11.4	11.2	11.3	10.8	11.2	11.5	11.2	12.2
25 years and over	4.8	5.5	5.9	5.8	5.6	5.9	5.6	5.9	5.6	5.7	5.5	5.9	6.1	6.4	6.5
25 to 54 years	5.2	5.9	6.3	6.3	5.9	6.2	6.0	6.4	6.0	6.1	5.9	6.3	6.5	6.9	7.0
55 years and over	3.2	3.2	3.9	3.6	3.9	4.5	3.7	3.3	3.3	3.7	3.6	4.4	4.1	3.8	3.8

6. Unemployed persons, by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	1980	1981											
	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
NUMBER OF UNEMPLOYED													
Lost last job	4,226	3,847	3,896	3,846	3,819	4,084	4,219	3,691	3,929	4,338	4,422	4,786	5,307
On layoff	1,470	1,258	1,267	1,299	1,280	1,369	1,367	1,178	1,205	1,412	1,607	1,790	2,064
Other job losers	2,756	2,590	2,629	2,547	2,539	2,715	2,852	2,513	2,724	2,925	2,815	2,996	3,243
Left last job	813	907	864	863	854	1,000	863	898	838	889	962	886	877
Reentered labor force	1,869	2,039	1,970	2,040	2,017	2,126	1,955	2,022	1,939	1,949	2,172	2,311	2,198
Seeking first job	868	1,000	928	986	987	938	956	873	944	953	987	977	1,017
PERCENT DISTRIBUTION													
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	54.3	49.4	50.7	49.7	49.7	50.1	52.8	49.3	51.4	53.4	51.8	53.4	56.5
On layoff	18.9	16.1	16.5	16.8	16.7	16.8	17.1	15.7	15.7	17.4	18.8	20.0	22.0
Other job losers	35.4	33.2	34.2	32.9	33.1	33.3	35.7	33.6	35.6	36.0	33.0	33.4	34.5
Job leavers	10.5	11.6	11.5	11.2	11.1	12.4	10.8	12.0	11.0	10.9	11.3	9.9	9.3
Reentrants	24.0	26.2	25.7	26.4	26.3	26.1	24.5	27.0	25.4	24.0	25.4	25.8	23.4
New entrants	11.2	12.8	12.1	12.7	12.9	11.5	12.0	11.7	12.3	11.7	11.6	10.9	10.8
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE													
Job losers	4.0	3.6	3.7	3.6	3.6	3.8	4.0	3.5	3.7	4.1	4.1	4.5	5.0
Job leavers	.8	.9	.8	.8	.8	.9	.8	.8	.8	.8	.9	.8	.8
Reentrants	1.8	1.9	1.9	1.9	1.9	2.0	1.8	1.9	1.8	1.8	2.0	2.2	2.1
New entrants	.8	.9	.9	.9	.9	.9	.9	.8	.9	.9	.9	.9	1.0

7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1980	1981											
	1979	1980	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Less than 5 weeks	2,869	3,208	3,115	3,250	3,203	3,209	3,074	3,309	3,172	3,187	3,161	3,383	3,652	3,815	4,067
5 to 14 weeks	1,892	2,411	2,217	2,264	2,324	2,356	2,482	2,581	2,360	2,196	2,345	2,409	2,605	2,861	3,052
15 weeks and over	1,202	1,829	2,378	2,358	2,250	2,192	2,105	2,168	2,315	2,100	2,194	2,212	2,251	2,330	2,338
15 to 26 weeks	684	1,028	1,231	1,079	992	1,013	1,001	1,022	1,205	1,068	1,059	1,151	1,156	1,213	1,157
27 weeks and over	518	802	1,147	1,279	1,257	1,179	1,104	1,146	1,110	1,032	1,135	1,061	1,095	1,117	1,181
Average (mean) duration, in weeks	10.9	11.9	13.5	14.4	14.4	14.0	13.7	13.2	14.2	13.9	14.5	13.7	13.7	13.2	12.8

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by 166,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

LABOR TURNOVER DATA in this section are compiled from personnel records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies. A sample of 40,000 establishments represents all industries in the manufacturing and mining sectors of the economy.

Definitions

Employed persons are all persons who received pay (including holiday and sick pay) for any part of the payroll period including the 12th of the month. Persons holding more than one job (about 5 percent of all persons in the labor force) are counted in each establishment which reports them.

Production workers in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 14–20 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities, in wholesale and retail trade, in finance, insurance, and real estate, and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to eliminate the effects of price change. The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated to underlying wage-rate developments: fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries. **Spendable earnings** are earnings from which estimated social security and Federal income taxes have been deducted. The Bureau of Labor Statistics computes spendable earnings from gross weekly earnings for only two illustrative cases: (1) a worker with no dependents and (2) a married worker with three dependents.

Hours represent the average weekly hours of production or nonsupervisory workers for which pay was received and are different from standard or scheduled hours. **Overtime hours** represent the portion of gross average weekly hours which were in excess of regular hours and for which overtime premiums were paid.

Labor turnover is the movement of all wage and salary workers from one employment status to another. **Accession rates** indicate the average number of persons added to a payroll in a given period per 100 employees; **separation rates** indicate the average number dropped from a payroll per 100 employees. Although month-to-month changes in employment can be calculated from the labor turnover data, the results are not comparable with employment data from the employment and payroll survey. The labor turnover survey measures changes during the calendar month while the employment and payroll survey measures changes from midmonth to midmonth.

Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of June 1981 data, published in the August 1981 issue of the *Review.* Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Complete comparable historical unadjusted and seasonally adjusted data are published in a Supplement to Employment and Earnings (unadjusted data from April 1977 through March 1981 and seasonally adjusted data from January 1974 through March 1981) and in *Employment and Earnings, United States, 1909–78,* BLS Bulletin 1312–11 (for prior periods).

Data on recalls were shown for the first time in tables 12 and 13 in the January 1978 issue of the *Review.* For a detailed discussion of the recalls series, along with historical data, see "New Series on Recalls from the Labor Turnover Survey," *Employment and Earnings,* December 1977, pp. 10–19.

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review,* December 1969, pp. 9–20. See also *BLS Handbook of Methods for Surveys and Studies,* Bulletin 1910 (Bureau of Labor Statistics, 1976).

The formulas used to construct the spendable average weekly earnings series reflect the latest provisions of the Federal income tax and social security tax laws. For the spendable average weekly earnings formulas for the years 1979–81, see *Employment and Earnings,* November 1981, pp. 7–8. Real earnings data are adjusted using the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W).

8. Employment by Industry, 1951–80

[Nonagricultural payroll data, in thousands]

Year	Total	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale and retail trade	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services	Government Total	Government Federal	Government State and local
1951	47,819	929	2,637	16,393	4,226	9,742	2,727	7,015	1,956	5,547	6,389	2,302	4,087
1952	48,793	898	2,668	16,632	4,248	10,004	2,812	7,192	2,035	5,699	6,609	2,420	4,188
1953	50,202	866	2,659	17,549	4,290	10,247	2,854	7,393	2,111	5,835	6,645	2,305	4,340
1954	48,990	791	2,646	16,314	4,084	10,235	2,867	7,368	2,200	5,969	6,751	2,188	4,563
1955	50,641	792	2,839	16,882	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1956	52,369	822	3,039	17,243	4,244	10,858	3,018	7,840	2,389	6,497	7,278	2,209	5,069
1957	52,853	828	2,962	17,174	4,241	10,886	3,028	7,858	2,438	6,708	7,616	2,217	5,399
1958	51,324	751	2,817	15,945	3,976	10,750	2,980	7,770	2,481	6,765	7,839	2,191	5,648
1959[1]	53,268	732	3,004	16,675	4,011	11,127	3,082	8,045	2,549	7,087	8,083	2,233	5,850
1960	54,189	712	2,926	16,796	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1961	53,999	672	2,859	16,326	3,903	11,337	3,133	8,204	2,688	7,620	8,594	2,279	6,315
1962	55,549	650	2,948	16,853	3,906	11,566	3,198	8,368	2,754	7,982	8,890	2,340	6,550
1963	56,653	635	3,010	16,995	3,903	11,778	3,248	8,530	2,830	8,277	9,225	2,358	6,868
1964	58,283	634	3,097	17,274	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	632	3,232	18,062	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	627	3,317	19,214	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	613	3,248	19,447	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	606	3,350	19,781	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	619	3,575	20,167	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	623	3,588	19,367	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	602	3,704	18,623	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	628	3,889	19,151	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	642	4,097	20,154	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	697	4,020	20,077	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	752	3,525	18,323	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	779	3,576	18,997	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	813	3,851	19,682	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	851	4,229	20,505	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	958	4,463	21,040	5,136	20,192	5,204	14,989	4,[illegible]	17,112	15,947	2,773	13,147
1980	90,564	1,020	4,399	20,300	5,143	20,386	5,281	15,104	5,1[illegible]	17,901	16,249	2,866	13,383

[1] Data include Alaska and Hawaii beginning in 1959.

9. Employment by State

[Nonagricultural payroll data, in thousands]

State	Nov. 1980	Oct. 1981	Nov. 1981[p]
Alabama	1,362.7	1,351.2	1,349.9
Alaska	168.5	182.8	180.1
Arizona	1,024.4	1,023.6	1,028.4
Arkansas	748.9	756.4	747.2
California	9,817.0	9,960.1	10,018.1
Colorado	1,265.2	1,280.3	1,284.3
Connecticut	1,436.8	1,431.9	1,432.3
Delaware	262.4	259.7	256.9
District of Columbia	612.5	605.2	606.0
Florida	3,649.1	3,790.9	3,809.8
Georgia	2,170.6	2,168.2	2,167.3
Hawaii	405.2	398.9	402.3
Idaho	335.0	330.8	....
Illinois	4,887.6	4,865.2	4,851.9
Indiana	2,149.3	2,124.0	2,107.5
Iowa	1,100.8	1,082.2	1,077.2
Kansas	956.3	958.4	960.3
Kentucky	1,221.3	1,202.4	1,190.6
Louisiana	1,608.4	1,648.9	1,651.2
Maine	423.2	419.5	413.9
Maryland	1,706.7	1,694.1	1,696.5
Massachusetts	2,667.6	2,681.0	2,685.0
Michigan	3,519.4	3,477.4	3,447.4
Minnesota	1,777.2	1,781.4	1,770.4
Mississippi	837.2	825.1	821.2
Missouri	1,973.6	1,978.7	1,974.1
Montana	282.8	287.5	285.9
Nebraska	633.2	637.9	635.5
Nevada	407.2	425.0	424.3
New Hampshire	389.3	390.7	389.3
New Jersey	3,088.8	3,107.9	3,104.9
New Mexico	461.2	470.6	469.1
New York	7,263.5	7,278.2	7,290.0
North Carolina	2,415.5	2,400.7	2,406.4
North Dakota	249.7	254.6	253.9
Ohio	4,430.3	4,402.1	4,386.0
Oklahoma	1,152.3	1,196.0	1,197.7
Oregon	1,036.2	1,014.8	1,001.6
Pennsylvania	4,772.9	4,679.2	4,686.4
Rhode Island	404.4	405.7	404.9
South Carolina	1,182.5	1,182.5	1,180.1
South Dakota	235.7	234.6	232.6
Tennessee	1,736.6	1,728.1	1,721.8
Texas	6,007.7	6,222.6	6,245.6
Utah	557.8	567.9	568.9
Vermont	202.7	204.1	202.1
Virginia	2,142.8	2,152.2	2,151.1
Washington	1,607.8	1,581.6	1,571.0
West Virginia	651.0	633.9	632.5
Wisconsin	1,965.8	1,969.3	1,961.6
Wyoming	207.9	210.4	208.4
Virgin Islands	36.3	34.8	35.4

10. Employment by industry division and major manufacturing group

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1980	1981											
	1979	1980	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. [p]	Dec. [p]
TOTAL	89,823	90,564	91,750	89,988	90,138	90,720	91,337	91,848	92,481	91,600	91,588	92,150	92,424	92,272	92,015
MINING	958	1,020	1,080	1,066	1,071	1,084	941	957	1,132	1,155	1,169	1,169	1,164	1,173	1,163
CONSTRUCTION	4,463	4,399	4,343	3,985	3,901	4,048	4,246	4,356	4,477	4,554	4,579	4,516	4,493	4,368	4,156
MANUFACTURING	21,040	20,300	20,238	20,075	20,065	20,160	20,253	20,342	20,531	20,337	20,473	20,600	20,368	20,115	19,854
Production workers	15,068	14,223	14,126	13,975	13,971	14,049	14,127	14,195	14,325	14,108	14,230	14,376	14,147	13,896	13,662
Durable goods	12,760	12,181	12,147	12,072	12,042	12,120	12,197	12,235	12,334	12,198	12,188	12,292	12,163	11,997	11,828
Production workers	9,110	8,438	8,374	8,305	8,279	8,345	8,412	8,438	8,500	8,347	8,323	8,440	8,313	8,148	7,997
Lumber and wood products	766.9	690.3	685.9	674.6	674.5	678.3	686.9	703.4	711.0	708.6	701.5	691.0	664.5	640.0	625.3
Furniture and fixtures	497.8	468.8	470.5	469.6	471.7	472.1	478.0	479.0	480.5	472.0	480.6	484.7	483.5	476.7	472.8
Stone, clay, and glass products	708.7	665.6	652.3	635.0	630.6	639.5	652.6	659.7	671.0	666.7	669.1	664.5	652.8	642.0	624.8
Primary metal industries	1,253.9	1,144.1	1,136.3	1,136.7	1,137.7	1,141.3	1,149.9	1,147.5	1,155.5	1,135.5	1,140.3	1,139.8	1,109.3	1,087.2	1,062.8
Fabricated metal products	1,717.7	1,609.0	1,596.4	1,580.2	1,578.1	1,585.4	1,593.7	1,596.1	1,606.8	1,584.5	1,590.9	1,607.5	1,584.2	1,563.4	1,537.2
Machinery, except electrical	2,484.8	2,497.0	2,496.8	2,496.9	2,498.4	2,504.3	2,506.1	2,508.6	2,531.3	2,517.4	2,511.4	2,540.7	2,528.4	2,513.4	2,497.9
Electric and electronic equipment	2,116.9	2,103.2	2,118.0	2,114.0	2,112.3	2,119.5	2,129.7	2,134.7	2,152.7	2,138.9	2,146.1	2,164.8	2,158.3	2,130.9	2,103.7
Transportation equipment	2,077.2	1,875.3	1,871.4	1,854.9	1,824.8	1,860.4	1,874.3	1,877.4	1,882.7	1,840.3	1,799.6	1,848.3	1,832.3	1,797.9	1,777.7
Instruments and related products	691.2	708.5	713.8	712.4	710.1	712.1	714.4	715.2	723.2	722.1	726.2	723.1	720.0	718.9	713.1
Miscellaneous manufacturing	444.8	419.3	405.9	398.0	403.3	406.7	411.3	413.4	419.5	412.3	421.8	428.7	429.9	426.2	412.2
Nondurable goods	8,280	8,118	8,091	8,003	8,023	8,040	8,056	8,107	8,197	8,139	8,285	8,308	8,205	8,118	8,026
Production workers	5,958	5,786	5,752	5,670	5,692	5,704	5,715	5,757	5,825	5,761	5,907	5,936	5,834	5,748	5,665
Food and kindred products	1,732.5	1,710.8	1,688.5	1,645.2	1,639.2	1,632.5	1,631.0	1,648.1	1,673.4	1,714.8	1,773.2	1,776.1	1,729.0	1,684.8	1,653.9
Tobacco manufactures	70.0	69.2	74.4	72.0	70.6	68.3	66.2	65.2	66.4	66.3	75.6	77.7	77.0	75.2	72.7
Textile mill products	885.1	852.7	846.1	841.0	841.1	840.9	841.6	844.3	851.0	836.5	847.3	850.2	834.3	826.9	820.4
Apparel and other textile products	1,304.3	1,265.8	1,241.1	1,222.8	1,238.7	1,250.2	1,255.2	1,265.9	1,283.9	1,231.1	1,276.8	1,287.3	1,274.1	1,259.9	1,222.0
Paper and allied products	706.8	694.0	691.5	687.7	687.7	688.6	690.9	693.1	701.0	696.4	700.3	702.0	691.4	686.4	682.8
Printing and publishing	1,235.1	1,258.3	1,278.3	1,269.0	1,273.6	1,278.2	1,280.4	1,281.8	1,286.2	1,286.5	1,289.4	1,294.1	1,299.7	1,305.6	1,313.3
Chemicals and allied products	1,109.3	1,107.4	1,101.2	1,100.1	1,102.9	1,106.8	1,106.2	1,110.3	1,121.1	1,116.6	1,112.0	1,110.5	1,104.4	1,099.5	1,098.2
Petroleum and coal products	209.8	196.6	206.8	206.5	205.7	207.0	209.5	212.9	215.4	216.1	215.4	212.7	211.4	210.6	207.3
Rubber and miscellaneous plastics products	781.6	730.7	733.2	731.8	734.2	737.2	743.5	749.2	759.0	747.0	756.8	760.8	748.2	737.2	726.2
Leather and leather products	245.7	232.6	229.4	226.9	229.5	230.4	231.7	235.9	239.1	227.5	238.6	237.0	235.7	232.3	229.2
TRANSPORTATION AND PUBLIC UTILITIES	5,136	5,143	5,150	5,063	5,076	5,085	5,120	5,148	5,195	5,177	5,175	5,222	5,204	5,182	5,167
WHOLESALE AND RETAIL TRADE	20,192	20,385	21,138	20,366	20,196	20,290	20,513	20,672	20,795	20,735	20,811	20,919	20,999	21,131	21,403
WHOLESALE TRADE	5,204	5,281	5,315	5,276	5,273	5,293	5,317	5,335	5,381	5,376	5,386	5,370	5,381	5,373	5,358
RETAIL TRADE	14,988	15,104	15,823	15,090	14,923	14,997	15,196	15,337	15,414	15,359	15,425	15,549	15,618	15,758	16,045
FINANCE, INSURANCE, AND REAL ESTATE	4,975	5,160	5,237	5,235	5,245	5,263	5,295	5,326	5,384	5,408	5,408	5,361	5,349	5,345	5,345
SERVICES	17,112	17,901	18,149	17,972	18,126	18,287	18,512	18,633	18,764	18,847	18,835	18,812	18,826	18,794	18,771
GOVERNMENT	15,947	16,249	16,435	16,216	16,458	16,493	16,457	16,414	16,203	15,387	15,148	15,560	16,021	16,164	16,156
Federal	2,773	2,866	2,782	2,773	2,774	2,769	2,773	2,782	2,825	2,833	2,803	2,735	2,737	2,736	2,742
State and local	13,174	13,383	13,653	13,443	13,684	13,724	13,684	13,632	13,378	12,554	12,345	12,825	13,284	13,428	13,414

11. Employment by industry division and major manufacturing group, seasonally adjusted

[Nonagricultural payroll data, in thousands]

Industry division and group	1980	1981											
	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.^{p}	Dec.^{p}
TOTAL	90,949	91,091	91,258	91,347	91,458	91,584	91,615	91,880	91,901	92,033	91,832	91,499	91,206
MINING	1,089	1,083	1,091	1,098	950	957	1,110	1,132	1,151	1,162	1,162	1,175	1,172
CONSTRUCTION	4,367	4,390	4,389	4,416	4,418	4,334	4,294	4,272	4,275	4,272	4,259	4,228	4,194
MANUFACTURING	20,175	20,174	20,177	20,191	20,332	20,414	20,424	20,535	20,505	20,496	20,241	20,008	19,785
Production workers	14,059	14,053	14,053	14,074	14,187	14,247	14,245	14,327	14,294	14,281	14,030	13,788	13,592
Durable goods	12,077	12,084	12,074	12,099	12,207	12,254	12,278	12,333	12,332	12,311	12,115	11,928	11,754
Production workers	8,301	8,306	8,297	8,325	8,412	8,442	8,455	8,491	8,485	8,465	8,267	8,079	7,923
Lumber and wood products	687	689	691	692	702	710	699	702	686	677	652	635	625
Furniture and fixtures	464	464	466	467	478	484	486	488	487	485	480	471	466
Stone, clay, and glass products	655	654	654	651	656	658	658	658	660	655	644	634	627
Primary metal industries	1,137	1,137	1,140	1,141	1,145	1,142	1,144	1,140	1,148	1,139	1,114	1,089	1,063
Fabricated metal products	1,581	1,579	1,577	1,581	1,595	1,604	1,604	1,614	1,610	1,606	1,575	1,546	1,520
Machinery, except electrical	2,490	2,487	2,481	2,480	2,491	2,511	2,521	2,533	2,542	2,551	2,549	2,523	2,490
Electric and electronic equipment	2,103	2,110	2,110	2,117	2,134	2,143	2,148	2,163	2,166	2,163	2,150	2,118	2,089
Transportation equipment	1,839	1,840	1,833	1,849	1,878	1,872	1,886	1,886	1,889	1,889	1,811	1,778	1,746
Instruments and related products	712	713	711	712	714	716	717	723	727	727	723	719	712
Miscellaneous manufacturing	409	411	411	409	414	414	415	426	417	419	417	415	416
Nondurable goods	8,098	8,090	8,103	8,092	8,125	8,160	8,146	8,202	8,173	8,185	8,126	8,080	8,031
Production workers	5,758	5,747	5,756	5,749	5,775	5,805	5,790	5,836	5,809	5,816	5,763	5,709	5,669
Food and kindred products	1,701	1,696	1,705	1,691	1,697	1,703	1,673	1,691	1,668	1,669	1,675	1,671	1,666
Tobacco manufactures	71	71	72	72	72	71	71	71	73	71	70	71	69
Textile mill products	842	841	839	838	842	843	846	856	849	849	833	823	816
Apparel and other textile products	1,250	1,244	1,243	1,243	1,250	1,258	1,264	1,278	1,272	1,273	1,259	1,251	1,231
Paper and allied products	692	691	691	689	691	694	695	696	698	703	691	686	683
Printing and publishing	1,269	1,269	1,272	1,276	1,280	1,283	1,284	1,290	1,295	1,301	1,302	1,303	1,303
Chemicals and allied products	1,105	1,106	1,109	1,108	1,107	1,109	1,111	1,110	1,106	1,112	1,108	1,103	1,102
Petroleum and coal products	209	211	210	210	211	213	212	212	212	211	210	210	209
Rubber and miscellaneous plastics products	729	730	731	734	744	753	757	760	764	760	744	732	722
Leather and leather products	230	231	231	231	231	233	232	238	236	236	234	230	230
TRANSPORTATION AND PUBLIC UTILITIES	5,118	5,124	5,135	5,139	5,161	5,148	5,149	5,167	5,170	5,166	5,168	5,146	5,136
WHOLESALE AND RETAIL TRADE	20,470	20,529	20,600	20,635	20,636	20,714	20,717	20,796	20,862	20,872	20,916	20,821	20,726
WHOLESALE TRADE	5,300	5,305	5,313	5,316	5,333	5,346	5,349	5,360	5,375	5,370	5,360	5,357	5,342
RETAIL TRADE	15,170	15,224	15,287	15,319	15,303	15,368	15,368	15,436	15,487	15,502	15,556	15,464	15,384
FINANCE, INSURANCE, AND REAL ESTATE	5,254	5,268	5,283	5,293	5,316	5,326	5,331	5,344	5,354	5,366	5,360	5,356	5,361
SERVICES	18,240	18,300	18,343	18,371	18,475	18,540	18,560	18,642	18,667	18,774	18,788	18,832	18,865
GOVERNMENT	16,236	16,223	16,240	16,204	16,170	16,131	16,040	15,992	15,917	15,905	15,938	15,933	15,967
Federal	2,800	2,799	2,795	2,781	2,767	2,779	2,781	2,777	2,770	2,765	2,759	2,755	2,764
State and local	13,436	13,424	13,445	13,423	13,403	13,352	13,259	13,215	13,147	13,140	13,179	13,178	13,203

12. Labor turnover rates in manufacturing, 1977 to date

[Per 100 employees]

Year	Annual average	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Total accessions												
1977	4.0	3.7	3.7	4.0	3.8	4.6	4.9	4.3	5.3	4.6	3.9	3.1	2.4
1978	4.1	3.8	3.2	3.8	4.0	4.7	4.9	4.4	5.4	4.8	4.3	3.3	2.4
1979	4.0	4.0	3.4	3.8	3.9	4.7	4.8	4.3	5.0	4.5	4.1	3.0	2.2
1980	3.5	3.8	3.3	3.5	3.1	3.4	3.9	3.8	4.5	4.3	3.8	2.7	2.2
1981	. . .	3.4	3.0	3.4	3.3	3.5	4.0	3.8	4.0	3.5	2.8	p2.4	. . .
	New hires												
1977	2.8	2.2	2.1	2.6	2.7	3.5	3.7	3.0	4.0	3.5	3.0	2.2	1.6
1978	3.1	2.5	2.2	2.7	2.9	3.6	3.9	3.3	4.2	3.9	3.5	2.6	1.7
1979	2.9	2.8	2.5	2.8	2.9	3.6	3.8	3.1	3.7	3.4	3.1	2.2	1.5
1980	2.1	2.4	2.2	2.3	2.0	2.1	2.4	2.1	2.5	2.6	2.2	1.6	1.2
1981	. . .	1.8	1.8	2.0	2.0	2.3	2.8	2.4	2.7	2.3	1.8	p1.3	. . .
	Recalls												
1977	.9	1.2	1.3	1.1	.9	.8	.8	.9	1.0	.8	.6	.6	.6
1978	.7	1.0	.7	.8	.8	.8	.7	.8	.9	.7	.6	.5	.5
1979	.7	.9	.7	.7	.7	.8	.7	.9	.9	.8	.7	.8	.5
1980	1.1	1.1	.9	.9	.8	1.0	1.2	1.5	1.7	1.4	1.1	.9	.8
1981	. . .	1.3	1.0	1.1	1.1	1.0	.9	1.0	1.0	.9	.8	p.9	. . .
	Total separations												
1977	3.8	3.9	3.4	3.4	3.4	3.5	3.5	4.3	5.1	4.9	3.8	3.4	3.4
1978	3.9	3.6	3.1	3.5	3.6	3.7	3.8	4.1	5.3	4.9	4.1	3.5	3.4
1979	4.0	3.8	3.2	3.6	3.7	3.8	3.9	4.3	5.7	4.7	4.2	3.8	3.5
1980	4.0	4.1	3.5	3.7	4.7	4.8	4.4	4.2	4.8	4.1	3.8	3.0	3.1
1981	. . .	3.6	3.1	3.2	3.1	3.1	3.2	3.6	4.4	4.1	4.2	p4.1	. . .
	Quits												
1977	1.8	1.4	1.3	1.6	1.7	1.9	1.9	1.9	3.1	2.8	1.9	1.5	1.2
1978	2.1	1.5	1.4	1.8	2.0	2.1	2.2	2.1	3.5	3.1	2.3	1.7	1.4
1979	2.0	1.8	1.6	1.9	2.0	2.1	2.1	2.0	3.3	2.7	2.1	1.6	1.1
1980	1.5	1.6	1.5	1.6	1.5	1.5	1.4	1.4	2.2	1.9	1.4	1.1	.9
1981	. . .	1.2	1.1	1.2	1.3	1.3	1.4	1.5	2.1	1.8	1.3	p.9	. . .
	Layoffs												
1977	1.1	1.7	1.4	1.0	.9	.8	.8	1.5	1.0	1.1	1.1	1.1	1.5
1978	.9	1.2	.9	.9	.8	.7	.7	1.1	.8	.8	.9	1.0	1.4
1979	1.1	1.1	.8	.8	.9	.7	.9	1.4	1.3	1.1	1.2	1.5	1.7
1980	1.7	1.6	1.2	1.3	2.3	2.5	2.2	2.0	1.7	1.4	1.5	1.4	1.6
1981	. . .	1.6	1.2	1.2	1.0	1.0	1.1	1.3	1.3	1.5	2.2	p2.6	. . .

13. Labor turnover rates in manufacturing, by major industry group

[Per 100 employees]

Major industry group	Accession rates									Separation rates								
	Total			New hires			Recalls			Total			Quits			Layoffs		
	Nov. 1980	Oct. 1981	Nov. 1981 p	Nov. 1980	Oct. 1981	Nov. 1981 p	Nov. 1980	Oct. 1981	Nov. 1981 p	Nov. 1980	Oct. 1981	Nov. 1981 p	Nov. 1980	Oct. 1981	Nov. 1981 p	Nov. 1980	Oct. 1981	Nov. 1981 p
MANUFACTURING	2.7	2.8	2.4	1.6	1.8	1.3	0.9	0.8	0.9	3.0	4.2	4.1	1.1	1.3	0.9	1.4	2.2	2.6
Seasonally adjusted	3.6	2.9	3.1	2.1	1.7	1.6	1.2	.9	1.2	3.3	4.0	4.1	1.4	1.2	1.1	1.3	2.2	2.3
Durable goods	2.6	2.4	2.1	1.4	1.4	1.0	.9	.7	.9	2.6	3.9	4.2	.8	1.0	.7	1.1	2.1	2.9
Lumber and wood products	3.3	3.1	2.9	2.4	2.0	1.3	.8	1.0	1.4	4.4	8.0	7.7	1.7	1.7	1.3	1.9	5.4	5.6
Furniture and fixtures	3.1	3.1	2.4	2.2	2.4	1.5	.7	.5	.7	2.9	4.7	4.4	1.4	1.8	1.1	.9	2.0	2.8
Stone, clay, and glass products	2.4	2.5	2.0	1.4	1.4	.9	.8	.9	1.0	3.6	4.5	4.7	.9	1.0	.7	2.0	2.8	3.4
Primary metal industries	3.3	2.0	2.8	.7	.7	.4	2.3	1.1	2.1	2.1	5.0	5.6	.4	.5	.3	1.1	3.7	4.6
Fabricated metal products	2.7	2.8	2.1	1.5	1.7	1.1	1.0	.8	.8	3.2	4.4	4.8	1.0	1.1	.7	1.7	2.6	3.4
Machinery, except electrical	2.1	2.1	1.6	1.2	1.4	1.0	.6	.5	.4	1.8	2.9	2.8	.7	.8	.6	.6	1.3	1.8
Electric and electronic equipment	2.4	2.3	2.0	1.4	1.4	1.2	.6	.4	.4	2.2	3.2	3.3	.8	1.0	.7	.8	1.4	1.9
Transportation equipment	2.8	2.4	. . .	1.1	1.0	. . .	1.3	1.0	. . .	2.3	3.6	. . .	.6	.7	. . .	1.1	2.0	. . .
Instruments and related products	1.8	1.7	1.6	1.4	1.4	1.2	.2	.1	.2	1.6	2.3	2.0	.8	1.1	.7	.4	.7	.8
Miscellaneous manufacturing	3.3	4.3	3.0	2.3	3.0	2.1	.8	1.1	.8	5.6	5.4	5.4	1.5	1.8	1.3	3.2	2.5	3.4
Nondurable goods	3.0	3.4	2.7	2.0	2.4	1.6	.8	.9	.9	3.7	4.6	4.1	1.4	1.7	1.2	1.7	2.2	2.3
Food and kindred products	4.0	5.1	3.8	2.4	3.1	2.0	1.4	1.8	1.6	6.1	7.9	5.9	1.9	2.1	1.4	3.5	4.8	3.8
Tobacco manufacturers	3.0	2.0	. . .	.9	.9	. . .	1.7	1.0	. . .	5.0	3.4	. . .	.6	.5	. . .	3.7	2.2	. . .
Textile mill products	2.7	3.1	2.7	2.0	2.1	1.4	.4	.8	1.1	3.0	4.5	3.8	1.5	1.7	1.2	.8	1.8	2.0
Apparel and other products	4.0	5.0	3.7	2.4	3.4	2.2	1.3	1.3	1.3	5.1	5.6	5.8	2.0	2.6	1.7	2.4	2.1	3.3
Paper and allied products	2.0	1.8	1.6	1.2	1.2	.8	.6	.4	.6	2.4	3.0	2.6	.7	.8	.5	1.2	1.5	1.7
Printing and publishing	2.8	3.3	2.6	2.2	2.7	2.1	.6	.4	.4	2.6	3.1	2.9	1.5	1.8	1.5	.6	.7	.9
Chemicals and allied products	1.2	1.2	.9	.8	.9	.7	.3	.2	.2	1.2	1.7	1.5	.4	.5	.4	.4	.7	.7
Petroleum and coal products	1.6	1.6	1.0	1.3	1.4	.8	.1	.1	.1	1.9	2.7	1.6	.6	.5	.4	.9	1.1	.8
Rubber and miscellaneous plastics products	3.2	2.8	2.3	2.0	1.9	1.3	.9	.6	.8	3.3	4.4	4.9	1.3	1.4	.9	1.2	2.1	3.1
Leather and leather products	4.1	4.7	3.4	2.9	3.3	2.1	1.0	1.1	1.1	5.8	6.0	5.4	2.4	2.7	1.8	2.7	2.4	2.8

14. Hours and earnings, by industry division, 1950-80

[Gross averages, production or nonsupervisory workers on nonagricultural payrolls]

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Total private			Mining			Construction			Manufacturing		
1950	$53.13	39.8	$1.335	$67.16	37.9	$1.772	$69.68	37.4	$1.863	$58.32	40.5	$1.440
1951	57.86	39.9	1.45	74.11	38.4	1.93	76.96	38.1	2.02	63.34	40.6	1.56
1952	60.65	39.9	1.52	77.59	38.6	2.01	82.86	38.9	2.13	66.75	40.7	1.64
1953	63.76	39.6	1.61	83.03	38.8	2.14	86.41	37.9	2.28	70.47	40.5	1.74
1954	64.52	39.1	1.65	82.60	38.6	2.14	88.91	37.2	2.39	70.49	39.6	1.78
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1956	70.74	39.3	1.80	95.06	40.8	2.33	96.38	37.5	2.57	78.78	40.4	1.95
1957	73.33	38.8	1.89	98.25	40.1	2.45	100.27	37.0	2.71	81.19	39.8	2.04
1958	75.08	38.5	1.95	96.08	38.9	2.47	103.78	36.8	2.82	82.32	39.2	2.10
1959[1]	78.78	39.0	2.02	103.68	40.5	2.56	108.41	37.0	2.93	88.26	40.3	2.19
1960	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1961	82.60	38.6	2.14	106.92	40.5	2.64	118.08	36.9	3.20	92.34	39.8	2.32
1962	85.91	38.7	2.22	110.70	41.0	2.70	122.47	37.0	3.31	96.56	40.4	2.39
1963	88.46	38.8	2.28	114.40	41.6	2.75	127.19	37.3	3.41	99.23	40.5	2.45
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	23[illegible].89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	269.34	40.2	6.70
1980	235.10	35.3	6.66	396.14	43.2	9.17	367.04	37.0	9.92	288.62	39.7	7.27

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950	...	...	...	$44.55	40.5	$1.100	$50.52	37.7	$1.340	...	...	...
1951	...	...	...	47.79	40.5	1.18	54.67	37.7	1.45	...	...	...
1952	...	...	...	49.20	40.0	1.23	57.08	37.8	1.51	...	...	...
1953	...	...	...	51.35	39.5	1.30	59.57	37.7	1.58	...	...	...
1954	...	...	...	53.33	39.5	1.35	62.04	37.6	1.65	...	...	...
1955	...	...	...	55.16	39.4	1.40	63.92	37.6	1.70	...	...	...
1956	...	...	...	57.48	39.1	1.47	65.68	36.9	1.78	...	...	...
1957	...	...	...	59.60	38.7	1.54	67.53	36.7	1.84	...	...	...
1958	...	...	...	61.76	38.6	1.60	70.12	37.1	1.89	...	...	...
1959[1]	...	...	...	64.41	38.8	1.66	72.74	37.3	1.95	...	...	...
1960	...	...	...	66.01	38.6	1.71	75.14	37.2	2.02	...	...	...
1961	...	...	...	67.41	38.3	1.76	77.12	36.9	2.09	...	...	...
1962	...	...	...	69.91	38.2	1.83	80.94	37.3	2.17	...	...	...
1963	...	...	...	72.01	38.1	1.89	84.38	37.5	2.25	...	...	...
1964	$118.78	41.1	$2.89	74.66	37.9	1.97	85.79	37.3	2.30	$70.03	36.1	$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	351.25	39.6	8.87	176.46	32.2	5.48	209.24	36.2	5.78	190.71	32.6	5.85

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[1] Data include Alaska and Hawaii beginning in 1959.

15. Weekly hours, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1980	1981											
	1979	1980	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.[p]	Dec.[p]
TOTAL PRIVATE	35.7	35.3	35.6	35.1	35.0	35.2	35.2	35.2	35.4	35.6	35.6	35.0	35.1	35.0	35.2
MINING	43.0	43.2	44.1	43.6	42.8	42.3	43.6	43.8	42.1	43.5	44.1	43.8	44.5	43.9	44.8
CONSTRUCTION	37.0	37.0	37.2	36.4	35.0	37.2	36.9	36.9	37.2	37.7	37.3	35.7	37.5	36.7	36.8
MANUFACTURING	40.2	39.7	40.8	39.9	39.5	39.9	39.7	40.1	40.2	39.6	39.8	39.5	39.7	39.6	40.0
Overtime hours	3.3	2.8	3.3	2.9	2.8	2.8	2.6	2.9	3.0	2.8	3.0	2.9	2.8	2.6	2.6
Durable goods	40.8	40.1	41.5	40.4	39.9	40.5	40.3	40.6	40.6	39.9	40.2	39.8	40.1	40.0	40.5
Overtime hours	3.5	2.8	3.4	2.9	2.8	2.9	2.7	3.0	3.0	2.8	2.9	2.8	2.7	2.5	2.6
Lumber and wood products	39.4	38.6	38.7	38.8	38.5	39.0	39.1	39.6	39.5	38.7	39.0	37.9	38.2	37.6	38.2
Furniture and fixtures	38.7	38.1	39.6	38.1	38.3	38.8	38.2	38.5	38.9	37.8	38.6	37.7	38.6	38.2	38.9
Stone, clay, and glass products	41.5	40.8	41.6	40.3	39.6	40.6	40.9	41.1	41.2	40.8	41.0	40.6	40.5	40.7	40.5
Primary metal industries	41.4	40.1	41.6	41.1	40.7	41.1	41.2	40.9	40.9	40.3	40.3	40.8	39.6	39.6	39.4
Fabricated metal products	40.7	40.4	41.8	40.4	40.0	40.6	40.2	40.7	40.8	39.9	40.3	39.6	40.1	40.0	40.5
Machinery except electrical	41.8	41.0	42.2	41.2	40.8	41.2	40.8	41.2	41.1	40.4	40.7	40.4	40.6	40.9	41.5
Electric and electronic equipment	40.3	39.8	41.0	40.1	39.6	40.2	39.8	40.1	40.2	39.7	40.0	39.7	39.9	39.8	40.3
Transportation equipment	41.1	40.6	43.1	40.9	40.1	41.1	41.0	41.6	41.3	40.7	40.5	39.9	40.9	40.8	41.6
Instruments and related products	40.8	40.5	41.2	40.6	40.5	40.6	39.9	40.3	40.4	39.9	40.4	40.4	40.4	40.8	41.1
Miscellaneous manufacturing	38.8	38.7	39.5	38.6	38.4	38.9	38.6	38.9	39.0	38.5	39.0	38.7	39.3	39.5	39.2
Nondurable goods	39.3	39.0	39.9	39.2	38.9	39.1	38.9	39.4	39.5	39.1	39.4	39.1	39.1	39.1	39.3
Overtime hours	3.1	2.8	3.1	2.9	2.8	2.7	2.6	2.9	2.9	2.8	3.0	3.1	2.9	2.8	2.6
Food and kindred products	39.9	39.7	40.3	40.0	39.3	39.2	39.3	39.8	39.8	39.6	40.0	39.8	39.6	39.8	40.3
Tobacco manufactures	38.0	38.1	38.1	38.6	38.5	37.2	37.2	38.6	38.5	38.6	40.7	40.2	39.4	38.8	38.7
Textile mill products	40.4	40.1	40.9	39.9	39.9	40.1	39.4	40.3	40.4	39.7	40.0	38.9	39.4	39.3	39.1
Apparel and other textile products	35.3	35.4	35.9	35.2	35.3	35.8	35.2	36.0	36.4	36.0	36.3	35.2	35.8	35.8	35.5
Paper and allied products	42.6	42.3	43.7	42.7	42.2	42.4	42.3	42.5	42.7	42.4	42.5	43.2	42.4	42.3	42.5
Printing and publishing	37.5	37.1	38.1	37.1	36.9	37.1	37.0	37.3	37.2	37.2	37.5	37.4	37.2	37.3	37.9
Chemicals and allied products	41.9	41.5	42.1	41.6	41.5	41.6	41.6	41.6	41.6	41.5	41.4	42.2	41.5	41.7	42.1
Petroleum and coal products	43.8	41.8	43.3	42.6	42.5	42.6	43.9	43.6	43.5	43.7	43.0	44.4	43.1	43.0	43.6
Rubber and miscellaneous plastics products	40.5	40.1	41.6	41.0	40.2	40.7	40.4	40.9	40.9	40.0	40.4	39.8	40.2	40.0	40.1
Leather and leather products	36.5	36.7	36.9	36.5	36.7	36.8	36.3	37.4	38.1	36.6	36.9	36.0	36.7	36.7	36.8
TRANSPORTATION AND PUBLIC UTILITIES	39.9	39.6	40.0	39.4	39.5	39.4	39.3	39.3	39.8	39.8	39.5	39.2	39.1	39.3	39.4
WHOLESALE AND RETAIL TRADE	32.6	32.2	32.5	31.7	31.7	31.9	32.1	32.0	32.3	32.8	32.8	32.2	31.9	31.9	32.2
WHOLESALE TRADE	38.8	38.5	38.9	38.5	38.3	38.5	38.5	38.5	38.6	38.8	38.7	38.5	38.7	38.6	38.7
RETAIL TRADE	30.6	30.2	30.5	29.5	29.6	29.8	30.0	29.9	30.4	30.9	30.9	30.2	29.8	29.8	30.2
FINANCE, INSURANCE, AND REAL ESTATE	36.2	36.2	36.3	36.4	36.4	36.4	36.3	36.1	36.1	36.3	36.3	36.0	36.2	36.2	36.2
SERVICES	32.7	32.6	32.6	32.5	32.6	32.6	32.6	32.5	32.7	33.0	32.9	32.4	32.5	32.5	32.5

16. Weekly hours, by industry division and major manufacturing group, seasonally adjusted

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	1980	1981											
	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.[p]	Dec.[p]
TOTAL PRIVATE	35.3	35.3	35.2	35.3	35.4	35.3	35.2	35.3	35.2	34.9	35.0	35.0	34.9
MANUFACTURING	39.9	40.1	39.8	39.9	40.2	40.3	40.1	40.0	40.0	39.3	39.5	39.3	39.1
Overtime hours	3.0	3.0	2.8	2.8	2.9	3.2	3.0	3.0	3.0	2.7	2.7	2.5	2.4
Durable goods	40.4	40.6	40.1	40.4	40.8	40.8	40.5	40.5	40.5	39.7	39.9	39.7	39.4
Overtime hours	3.1	3.0	2.8	2.8	3.0	3.2	3.0	3.0	3.0	2.6	2.6	2.4	2.4
Lumber and wood products	39.3	39.8	39.1	39.1	39.6	39.8	39.0	38.8	38.6	37.3	37.6	37.5	37.7
Furniture and fixtures	38.4	38.5	38.6	38.6	38.8	39.0	38.9	38.5	38.6	37.5	38.1	37.8	37.7
Stone, clay, and glass products	41.0	41.3	40.6	40.7	41.2	41.0	40.8	40.9	40.8	40.3	40.0	40.2	39.9
Primary metal industries	41.2	41.1	40.7	41.0	41.2	41.0	40.8	40.5	40.7	40.6	39.8	39.6	39.0
Fabricated metal products	40.4	40.5	40.2	40.4	40.9	40.9	40.7	40.5	40.5	39.5	40.0	39.6	39.3
Machinery, except electrical	40.9	41.1	40.8	40.9	41.3	41.4	41.1	41.1	41.2	40.3	40.7	40.6	40.3
Electric and electronic equipment	40.0	40.1	39.6	40.0	40.2	40.4	40.2	40.5	40.4	39.6	39.9	39.3	39.2
Transportation equipment	41.0	41.3	40.5	40.9	42.0	41.8	41.4	41.2	41.3	39.9	40.5	40.3	39.5
Instruments and related products	40.4	40.6	40.5	40.5	40.1	40.4	40.4	40.5	40.8	40.5	40.4	40.3	40.3
Miscellaneous manufacturing	38.9	38.8	38.6	38.7	38.9	39.2	39.1	39.2	39.1	38.4	39.0	39.0	38.5
Nondurable goods	39.2	39.5	39.2	39.2	39.3	39.6	39.4	39.3	39.3	38.9	39.0	38.8	38.7
Overtime hours	2.9	3.0	2.9	2.8	2.9	3.1	3.0	2.9	2.9	2.8	2.8	2.7	2.4
Food and kindred products	39.7	40.3	39.9	39.7	40.1	40.0	39.8	39.4	39.4	39.2	39.5	39.5	39.7
Textile mill products	40.1	40.0	40.0	39.9	39.8	40.5	40.2	40.4	40.3	38.9	39.3	38.9	38.3
Apparel and other textile products	35.5	36.1	35.6	35.7	35.5	36.0	36.1	35.9	36.1	35.2	35.7	35.6	35.1
Paper and allied products	42.8	42.6	42.4	42.4	42.6	42.8	42.7	42.7	42.7	43.1	42.4	41.9	41.6
Printing and publishing	37.4	37.5	37.3	37.1	37.3	37.6	37.4	37.3	37.3	37.1	37.1	36.9	37.2
Chemicals and allied products	41.6	41.6	41.6	41.5	41.5	41.7	41.7	41.8	41.7	42.3	41.5	41.3	41.6
Petroleum and coal products	43.2	43.8	43.8	43.5	44.1	43.8	43.4	43.1	42.8	43.3	42.1	42.3	43.6
Rubber and miscellaneous plastics products	40.8	40.9	40.3	40.5	40.7	41.3	41.0	40.5	40.6	39.6	40.0	39.7	39.4
Leather and leather products	36.6	36.8	37.0	37.1	36.6	37.1	37.1	36.5	36.9	36.1	36.8	36.8	36.5
WHOLESALE AND RETAIL TRADE	32.1	32.2	32.2	32.2	32.3	32.1	32.1	32.2	32.1	32.1	31.9	32.0	31.9
WHOLESALE TRADE	38.6	38.8	38.6	38.6	38.6	38.5	38.5	38.7	38.6	38.5	38.5	38.6	38.4
RETAIL TRADE	30.0	30.1	30.2	30.2	30.3	30.1	30.1	30.1	30.1	30.1	29.9	29.9	29.8
SERVICES	32.7	32.7	32.8	32.8	32.8	32.7	32.5	32.5	32.4	32.4	32.5	32.6	32.6

NOTE: The industry divisions of mining; construction; tobacco manufactures (a major manufacturing group, nondurable goods); transportation and public utilities; and finance, insurance, and real estate are no longer shown. This is because the seasonal component in these is small relative to the trend-cycle, or irregular components, or both, and consequently cannot be precisely separated.

17. Hourly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1980	1981											
	1979	1980	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.p	Dec.p
TOTAL PRIVATE	$6.16	$6.66	$6.94	$7.03	$7.06	$7.10	$7.13	$7.17	$7.20	$7.24	$7.30	$7.40	$7.42	$7.46	$7.45
MINING	8.49	9.17	9.57	9.77	9.86	9.85	9.70	9.68	9.94	10.11	10.15	10.29	10.28	10.44	10.42
CONSTRUCTION	9.27	9.92	10.33	10.42	10.41	10.44	10.43	10.53	10.60	10.74	10.87	11.02	11.10	11.11	11.18
MANUFACTURING	6.70	7.27	7.70	7.73	7.75	7.80	7.88	7.92	7.97	8.02	8.02	8.15	8.15	8.19	8.26
Durable goods	7.13	7.75	8.23	8.23	8.26	8.32	8.40	8.45	8.52	8.55	8.57	8.68	8.71	8.75	8.83
Lumber and wood products	6.07	6.53	6.74	6.79	6.81	6.79	6.83	6.92	7.10	7.16	7.13	7.15	7.09	7.11	7.12
Furniture and fixtures	5.06	5.49	5.70	5.71	5.74	5.76	5.78	5.83	5.89	5.91	5.98	6.00	6.05	6.05	6.13
Stone, clay, and glass products	6.85	7.50	7.83	7.87	7.89	7.94	8.11	8.20	8.31	8.39	8.41	8.53	8.50	8.53	8.57
Primary metal industries	8.98	9.77	10.36	10.36	10.56	10.52	10.76	10.68	10.76	10.79	10.98	11.22	10.97	11.10	11.11
Fabricated metal products	6.85	7.45	7.88	7.89	7.91	8.01	8.05	8.17	8.23	8.22	8.27	8.34	8.39	8.42	8.53
Machinery, except electrical	7.32	8.00	8.50	8.53	8.56	8.62	8.67	8.75	8.81	8.85	8.86	8.98	9.05	9.10	9.20
Electric and electronic equipment	6.32	6.95	7.38	7.41	7.43	7.47	7.51	7.55	7.60	7.69	7.76	7.79	7.84	7.86	7.98
Transportation equipment	8.53	9.32	10.09	9.96	9.93	10.08	10.14	10.25	10.36	10.35	10.30	10.41	10.65	10.66	10.71
Instruments and related products	6.17	6.80	7.13	7.19	7.20	7.23	7.25	7.31	7.34	7.44	7.56	7.60	7.61	7.70	7.81
Miscellaneous manufacturing	5.03	5.47	5.73	5.82	5.83	5.85	5.91	5.93	5.93	5.98	5.97	6.07	6.06	6.12	6.22
Nondurable goods	6.01	6.56	6.89	6.97	6.98	7.01	7.08	7.11	7.14	7.23	7.24	7.37	7.34	7.39	7.44
Food and kindred products	6.27	6.86	7.13	7.21	7.24	7.29	7.37	7.43	7.43	7.47	7.50	7.58	7.53	7.64	7.74
Tobacco manufactures	6.67	7.73	8.10	8.50	8.56	8.61	8.90	9.03	9.33	9.43	8.61	8.66	8.58	8.91	8.82
Textile mill products	4.66	5.08	5.34	5.35	5.35	5.36	5.36	5.40	5.42	5.51	5.66	5.69	5.72	5.74	5.73
Apparel and other textile products	4.23	4.57	4.81	4.89	4.87	4.94	4.96	4.98	5.00	4.94	4.98	5.06	5.07	5.06	5.04
Paper and allied products	7.13	7.84	8.27	8.27	8.28	8.30	8.37	8.42	8.55	8.73	8.67	8.95	8.82	8.90	8.93
Printing and publishing	6.94	7.53	7.88	7.92	7.96	8.02	8.04	8.10	8.13	8.22	8.27	8.40	8.42	8.43	8.44
Chemicals and allied products	7.60	8.30	8.69	8.74	8.80	8.84	8.94	8.99	9.07	9.16	9.19	9.38	9.37	9.43	9.47
Petroleum and coal products	9.36	10.09	10.38	11.06	11.33	11.23	11.40	11.28	11.29	11.41	11.31	11.53	11.46	11.54	11.50
Rubber and miscellaneous plastics products	5.97	6.56	6.97	7.06	7.04	7.07	7.15	7.22	7.23	7.28	7.32	7.38	7.39	7.40	7.47
Leather and leather products	4.22	4.58	4.74	4.86	4.88	4.90	4.93	4.95	4.98	4.96	4.97	5.08	5.09	5.10	5.13
TRANSPORTATION AND PUBLIC UTILITIES	8.16	8.87	9.30	9.33	9.45	9.42	9.54	9.59	9.63	9.69	9.89	9.97	9.96	10.06	10.08
WHOLESALE AND RETAIL TRADE	5.06	5.48	5.62	5.80	5.84	5.85	5.87	5.89	5.89	5.91	5.94	6.04	6.00	6.03	6.00
WHOLESALE TRADE	6.39	6.96	7.23	7.32	7.38	7.42	7.47	7.51	7.51	7.59	7.67	7.71	7.74	7.80	7.83
RETAIL TRADE	4.53	4.88	4.99	5.18	5.20	5.20	5.22	5.23	5.23	5.24	5.26	5.37	5.29	5.32	5.29
FINANCE, INSURANCE, AND REAL ESTATE	5.27	5.78	6.00	6.10	6.21	6.19	6.20	6.24	6.24	6.27	6.37	6.38	6.42	6.52	6.48
SERVICES	5.36	5.85	6.12	6.21	6.27	6.29	6.30	6.33	6.33	6.34	6.41	6.51	6.57	6.66	6.66

18. Hourly Earnings Index for production or nonsupervisory workers on private nonagricultural payrolls, by industry division

[Seasonally adjusted data: 1977=100]

Industry	1980	1981												Nov. 1981 to Dec. 1981	Dec. 1980 to Dec. 1981
	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.p	Dec.p		
TOTAL PRIVATE (in current dollars)	132.6	133.8	135.0	135.8	136.7	137.7	138.4	139.0	140.7	141.5	141.9	143.2	143.3	0.1	8.1
Mining[1]	139.8	142.1	143.2	144.0	145.7	145.6	147.2	148.9	149.4	151.5	151.3	153.6	153.1	−.3	9.5
Construction	126.2	127.6	128.0	128.6	129.0	129.4	130.4	131.8	132.5	132.9	134.3	135.3	135.8	.4	7.5
Manufacturing	135.4	136.5	137.5	138.5	139.9	140.7	141.6	142.5	143.6	144.8	145.5	146.4	146.9	.4	8.5
Transportation and public utilities	132.8	133.7	135.4	136.1	137.3	138.9	139.8	139.3	141.8	141.7	142.0	143.9	144.2	.2	8.6
Wholesale and retail trade	132.4	133.7	135.0	135.8	136.4	137.4	137.8	138.4	140.0	141.2	140.5	141.5	141.4	([2])	6.9
Finance, insurance, and real estate	131.9	133.2	135.0	136.0	135.4	136.8	137.1	137.4	140.4	140.3	140.9	143.3	142.3	−.7	7.9
Services	131.1	132.0	133.2	134.0	134.8	136.4	136.6	136.9	139.4	139.8	140.7	142.5	142.5	([2])	8.7
TOTAL PRIVATE (in constant dollars)	92.7	92.8	92.7	92.8	93.0	93.1	92.9	92.2	92.7	92.1	92.0	92.4	...	...	...

[1] The unadjusted data are shown because the seasonal component is small relative to the trend-cycle, irregular components, or both, and consequently cannot be separated with sufficient precision.

[2] Less than 0.05.

19. Weekly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1980	1981											
	1979	1980	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.^{p}	Dec.^{p}
TOTAL PRIVATE	$219.91	$235.10	$247.06	$246.75	$247.10	$249.92	$250.98	$252.38	$254.88	$257.74	$259.88	$259.00	$260.44	$261.10	$262.24
MINING	365.07	396.14	422.04	425.97	422.01	415.66	422.92	423.98	418.47	439.79	447.62	450.70	457.46	458.32	466.82
CONSTRUCTION	342.99	367.04	384.28	379.29	364.35	388.37	384.87	388.56	394.32	404.90	405.45	393.41	416.25	407.74	410.88
MANUFACTURING	269.34	288.62	314.16	308.43	306.13	311.22	312.84	317.59	320.39	317.58	319.20	321.93	323.56	324.32	330.40
Durable goods	290.90	310.78	341.55	332.49	329.57	336.96	338.52	343.07	345.91	341.15	344.51	345.46	349.27	350.00	357.62
Lumber and wood products	239.16	252.06	267.58	263.45	262.19	264.81	267.05	274.03	280.45	277.09	278.07	270.99	270.84	267.34	271.98
Furniture and fixtures	195.82	209.17	225.72	217.55	219.84	223.49	220.80	224.46	229.12	223.40	230.83	226.20	233.53	231.11	238.46
Stone, clay, and glass products	284.28	306.00	325.73	317.16	312.44	322.36	331.70	337.02	342.37	342.31	344.81	346.32	344.25	347.17	347.09
Primary metal industries	371.77	391.78	430.98	425.80	429.79	432.37	443.31	436.81	440.08	434.84	442.90	457.78	434.41	439.56	437.73
Fabricated metal products	278.80	300.98	327.81	318.76	316.40	325.21	323.61	332.52	335.78	327.98	333.28	330.26	336.44	336.80	345.47
Machinery except electrical	305.98	328.00	358.70	351.44	349.25	355.14	353.74	360.50	362.09	357.54	360.60	362.79	367.43	372.19	381.80
Electric and electronic equipment	254.70	276.61	302.58	297.14	294.23	300.29	298.90	302.76	305.52	305.29	310.40	309.26	312.82	312.83	321.59
Transportation equipment	350.58	378.39	434.88	407.36	398.19	414.29	415.74	426.40	427.87	421.25	417.15	415.36	435.59	434.93	445.54
Instruments and related products	251.74	275.40	293.76	291.91	291.60	293.54	288.28	294.59	296.54	296.86	305.42	307.04	307.44	314.16	320.99
Miscellaneous manufacturing	195.16	211.69	226.34	224.65	223.87	227.57	228.13	230.68	231.27	230.23	232.83	234.91	238.16	241.74	243.82
Nondurable goods	236.19	255.84	274.91	273.22	271.52	274.09	275.41	280.13	282.03	282.69	285.26	288.17	286.99	288.95	292.39
Food and kindred products	250.17	272.34	287.34	288.40	284.53	285.77	289.64	295.71	295.71	295.81	300.00	301.68	298.19	304.07	311.92
Tobacco manufactures	253.46	294.51	308.61	328.10	329.56	320.28	331.08	348.56	359.21	364.00	350.43	348.13	338.05	345.71	341.33
Textile mill products	188.26	203.71	218.41	213.47	213.47	214.94	211.18	217.62	218.97	218.75	226.40	221.34	225.37	225.58	224.04
Apparel and other textile products	149.32	161.78	172.68	172.13	171.91	176.85	174.59	179.28	182.00	177.84	180.77	178.11	181.51	181.15	178.92
Paper and allied products	303.74	331.63	361.40	353.13	349.42	351.92	354.05	357.85	365.09	370.15	368.48	386.64	373.97	376.47	379.53
Printing and publishing	260.25	279.36	300.23	293.83	293.72	297.54	297.48	302.13	302.44	305.78	310.13	314.16	313.22	314.44	319.88
Chemicals and allied products	318.44	344.45	365.95	363.58	365.20	367.74	371.90	373.98	377.31	380.14	380.47	395.84	388.86	393.23	398.60
Petroleum and coal products	408.97	421.76	449.45	471.16	481.53	478.40	500.46	491.81	491.12	498.62	486.33	511.93	493.93	496.22	501.40
Rubber and miscellaneous plastics products	241.79	263.06	289.95	289.46	283.01	287.75	288.86	295.30	295.71	291.20	295.73	293.72	297.08	296.00	299.55
Leather and leather products	154.03	168.09	174.91	177.39	179.10	180.32	178.96	185.13	189.74	181.54	183.39	182.88	186.80	187.17	188.78
TRANSPORTATION AND PUBLIC UTILITIES	325.56	351.25	372.00	367.60	373.28	371.15	374.92	376.89	383.27	385.66	390.66	390.82	389.44	395.36	397.15
WHOLESALE AND RETAIL TRADE	164.96	176.46	182.65	183.86	185.13	186.52	188.43	188.48	190.25	193.85	194.83	194.49	191.40	192.36	193.20
WHOLESALE TRADE	247.93	267.96	281.25	281.82	282.65	285.67	287.60	289.14	289.89	294.49	296.83	296.84	299.54	301.08	303.02
RETAIL TRADE	138.62	147.38	152.20	152.81	153.92	154.96	156.60	156.38	158.99	161.92	162.53	162.17	157.64	158.54	159.76
FINANCE, INSURANCE, AND REAL ESTATE	190.77	209.24	217.80	222.04	226.04	225.32	225.06	225.26	225.26	227.60	231.23	229.68	232.40	236.02	234.58
SERVICES	175.27	190.71	199.51	201.63	204.40	205.05	205.38	206.73	206.99	209.22	210.89	210.92	213.53	216.45	216.45

20. Gross and spendable weekly earnings, in current and 1977 dollars, 1961 to date

[Averages for production or nonsupervisory workers on private nonagricultural payrolls]

Year and month	Private nonagricultural workers						Manufacturing workers					
	Gross average weekly earnings		Spendable average weekly earnings				Gross average weekly earnings		Spendable average weekly earnings			
			Worker with no dependents		Married worker with 3 dependents				Worker with no dependents		Married worker with 3 dependents	
	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars
1961	$82.60	$167.21	$67.08	$135.79	$74.48	$150.77	$92.34	$186.92	$74.60	$151.01	$82.18	$166.36
1962	85.91	172.16	69.56	139.40	76.99	154.29	96.56	193.51	77.86	156.03	85.53	171.40
1963	88.46	175.17	71.05	140.69	78.56	155.56	99.23	196.50	79.51	157.45	87.25	172.77
1964	91.33	178.38	75.04	146.56	82.57	161.27	102.97	201.11	84.40	164.84	92.18	180.04
1965	95.45	183.21	79.32	152.25	86.63	166.28	107.53	206.39	89.08	170.98	96.78	185.76
1966	98.82	184.37	81.29	151.66	88.66	165.41	112.19	209.31	91.45	170.62	99.33	185.32
1967	101.84	184.83	83.38	151.32	90.86	164.90	114.49	207.79	92.97	168.73	100.93	183.18
1968	107.73	187.68	86.71	151.06	95.28	165.99	122.51	312.43	97.70	170.21	105.75	185.98
1969	114.61	189.44	90.96	150.35	99.99	165.27	129.51	214.07	101.90	168.43	111.44	184.20
1970	119.83	186.94	96.21	150.09	104.90	163.65	133.33	208.00	106.32	165.87	115.58	180.31
1971	127.31	190.58	103.80	155.39	112.43	168.31	142.44	213.23	114.97	172.11	124.24	185.99
1972	136.90	198.41	112.19	162.59	121.68	176.35	154.71	224.22	125.34	181.65	135.57	196.48
1973	145.39	198.35	117.51	160.31	127.38	173.78	166.46	227.09	132.57	180.86	143.50	195.77
1974	154.76	190.12	124.37	152.79	134.61	165.37	176.80	217.20	140.19	172.22	151.56	186.19
1975	163.53	184.16	132.49	149.20	145.65	164.02	190.79	214.85	151.61	170.73	166.29	187.26
1976	175.45	186.85	143.30	152.61	155.87	166.00	209.32	222.92	167.83	178.73	181.32	193.10
1977	189.00	189.00	155.19	155.19	169.93	169.93	228.90	228.90	183.80	183.80	200.06	200.06
1978	203.70	189.31	165.39	153.71	180.71	167.95	249.27	231.66	197.40	183.46	214.87	199.69
1979	219.91	183.41	178.00	148.46	194.82	162.49	269.34	224.64	212.70	177.40	232.38	193.81
1980	235.10	172.74	188.82	138.74	206.06	151.65	288.62	212.06	225.79	165.90	247.01	181.49
1980: December	247.06	173.38	197.18	138.37	215.47	151.21	314.16	220.46	242.86	170.43	266.14	186.76
1981: January	246.75	171.83	195.68	136.27	213.96	149.00	308.43	214.78	237.60	165.46	260.36	181.31
February	247.10	170.18	195.92	134.93	214.22	147.53	306.13	210.83	236.08	162.59	258.70	178.17
March	249.92	171.06	197.88	135.44	216.34	148.08	311.22	213.02	239.37	163.84	262.38	179.59
April	250.98	170.73	198.61	135.11	217.14	147.71	312.84	212.82	240.39	163.53	263.55	179.29
May	252.38	170.18	199.59	134.59	218.20	147.13	317.59	214.15	243.40	164.13	266.99	180.03
June	254.88	170.49	201.32	134.66	220.08	147.21	320.39	214.31	245.18	164.00	269.01	179.94
July	257.74	170.35	203.30	134.37	222.24	146.89	317.59	209.91	243.40	160.87	266.99	176.46
August	259.88	170.64	204.79	134.46	223.85	146.98	319.20	209.59	244.42	160.49	268.15	176.07
September	259.00	168.40	204.18	132.76	223.19	145.12	321.93	209.32	246.15	160.05	270.13	175.64
October	260.44	169.01	207.07	134.37	225.23	146.16	323.56	209.97	249.93	162.19	272.84	177.05
November^p	261.10	169.00	207.54	134.33	225.73	146.10	324.32	209.92	250.42	162.08	273.40	176.96
December^p	262.24	...	208.34	...	226.60	...	330.40	...	254.36	...	277.86	...

[1] Not available.

NOTE: The earnings expressed in 1977 dollars have been adjusted for changes in price level as measured by the Bureau's Consumer Price Index for Urban Wage Earners and Clerical Workers. These series are described in "The Spendable Earnings Series: A Technical Note on its Calculation," **Employment and Earnings and Monthly Report on the Labor Force**, February 1969, pp. 6-13. See also "Spendable Earnings Formulas, 1979-81," **Employment and Earnings**, November 1981, pp. 7-8.

UNEMPLOYMENT INSURANCE DATA

NATIONAL UNEMPLOYMENT INSURANCE DATA are compiled monthly by the Employment and Training Administration of the U.S. Department of Labor from monthly records of unemployment insurance activity prepared by State agencies. Railroad unemployment insurance data are prepared by the U.S. Railroad Retirement Board.

Definitions

Data for **all programs** represent an unduplicated count of insured unemployment under State programs, Unemployment Compensation for Ex-Servicemen, and Unemployment Compensation for Federal Employees, and the Railroad Insurance Act.

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

An **application** for benefits is filed by a railroad worker at the beginning of his first period of unemployment in a benefit year; no application is required for subsequent periods in the same year. **Number of payments** are payments made in 14-day registration periods. The **average amount of benefit payment** is an average for all compensable periods, not adjusted for recovery of overpayments or settlement of underpayments. However, **total benefits** paid have been adjusted.

21. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1980		1981										
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
All programs:													
Insured unemployment	3,726	4,085	4,621	4,264	3,948	3,453	3,111	2,949	3,012	2,874	2,680	r2,753	3,220
State unemployment insurance program:[1]													
Initial claims[2]	1,673	2,544	2,653	1,806	1,684	1,647	1,417	1,741	2,114	1,610	1,981	1,994	p2,238
Insured unemployment (average weekly volume)	2,983	3,321	3,844	3,669	3,382	2,988	2,691	2,596	2,743	2,656	2,488	r2,592	3,050
Rate of insured unemployment	3.4	3.8	4.4	4.2	3.9	3.4	3.1	3.0	3.1	3.0	2.9	3.0	3.5
Weeks of unemployment compensated	9,524	12,603	14,228	12,882	13,504	11,671	9,790	9,926	10,486	9,594	9,505	9,405	p8,947
Average weekly benefit amount for total unemployment	$101.96	$101.43	$102.34	$101.89	$105.63	$105.96	$105.49	$99.02	$103.47	$105.94	$107.39	$108.93	p$110.10
Total benefits paid	$1,055,065	$1,242,957	$1,416,513	$1,313,507	$1,393,612	$1,226,815	$1,006,341	$1,012,764	r$1,061,899	$1,004,864	$1,001,020	$985,880	p$1,066,693
Unemployment compensation for ex-servicemen:[3]													
Initial claims[1]	17	21	19	17	18	16	15	19	22	19	15	r11	p9
Insured unemployment (average weekly volume)	54	55	57	54	51	46	43	42	44	44	34	26	22
Weeks of unemployment compensated	216	261	257	221	234	214	183	192	203	190	153	116	p92
Total benefits paid	$21,024	$27,015	$26,646	$22,517	$24,668	$23,048	$19,965	$21,145	$22,785	$21,425	$17,144	$12,963	p$10,193
Unemployment compensation for Federal civilian employees:[4]													
Initial claims	14	18	22	13	12	12	11	13	15	17	18	20	p17
Insured unemployment (average weekly volume)	35	37	41	40	36	31	27	25	25	25	29	r32	36
Weeks of unemployment compensated	118	150	160	148	156	135	107	105	105	102	100	112	p128
Total benefits paid	$11,365	$14,184	$15,432	$14,573	$15,561	$13,701	$11,023	$10,705	$10,805	$9,543	$10,495	$11,682	p$13,524
Railroad unemployment insurance:													
Applications	7	11	13	5	5	6	6	26	41	13	15	21	13
Insured unemployment (average weekly volume)	38	39	53	50	44	41	35	30	28	29	34	40	44
Number of payments	70	83	118	104	115	94	79	86	32	63	74	86	83
Average amount of benefit payment	$209.00	$212.27	$209.38	$214.56	$214.93	$201.12	$199.43	$201.06	$199.63	$202.53	$207.98	$197.26	$207.08
Total benefits paid	$14,269	$18,046	$20,303	$22,049	$23,233	$19,239	$15,428	$16,206	$11,541	$7,071	$15,046	$15,994	$16,377
Employment service:[5]													
New applications and renewals	....	4,476	....	....	8,778	....	....	12,868	....	....	....	....	....
Nonfarm placements	....	871	....	....	1,595	....	....	2,446	....	....	....	....	....

[1] Initial claims and State insured unemployment include data under the program for Puerto Rican sugarcane workers.

[2] Includes interstate claims for the Virgin Islands. Excludes transition claims under State programs.

[3] Excludes data on claims and payments made jointly with other programs.

[4] Includes the Virgin islands. Excludes data on claims and payments made jointly with State programs.

[5] Cumulative total for fiscal year (October 1-September 30). Data computed quarterly.

NOTE: Data for Puerto Rico included. Dashes indicate data not available.

r = revised.

PRICE DATA

PRICE DATA are gathered by the Bureau of Labor Statistics from retail and primary markets in the United States. Price indexes are given in relation to a base period (1967 = 100, unless otherwise noted).

Definitions

The **Consumer Price Index** is a monthly statistical measure of the average change in prices in a fixed market basket of goods and services. Effective with the January 1978 index, the Bureau of Labor Statistics began publishing CPI's for two groups of the population. One index, a new CPI for All Urban Consumers, covers 80 percent of the total noninstitutional population; and the other index, a revised CPI for Urban Wage Earners and Clerical Workers, covers about half the new index population. The All Urban Consumers index includes, in addition to wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctor's and dentist's fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items is kept essentially unchanged between major revisions so that only price changes will be measured. Prices are collected from over 18,000 tenants, 24,000 retail establishments, and 18,000 housing units for property taxes in 85 urban areas across the country. All taxes directly associated with the purchase and use of items are included in the index. Because the CPI's are based on the expenditures of two population groups in 1972–73, they may not accurately reflect the experience of individual families and single persons with different buying habits.

Though the CPI is often called the "Cost-of-Living Index," it measures only price change, which is just one of several important factors affecting living costs. Area indexes do not measure differences in the level of prices among cities. They only measure the average change in prices for each area since the base period.

Producer Price Indexes measure average changes in prices received in primary markets of the United States by producers of commodities in all stages of processing. The sample used for calculating these indexes contains about 2,800 commodities and about 10,000 quotations per month selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The universe includes all commodities produced or imported for sale in commercial transactions in primary markets in the United States.

Producer Price Indexes can be organized by stage of processing or by commodity. The stage of processing structure organizes products by degree of fabrication (that is, finished goods, intermediate or semifinished goods, and crude materials). The commodity structure organizes products by similarity of end-use or material composition.

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States, from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire. Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

In calculating Producer Price Indexes, price changes for the various commodities are averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1972. The detailed data are aggregated to obtain indexes for stage of processing groupings, commodity groupings, durability of product groupings, and a number of special composite groupings.

Price indexes for the output of selected SIC industries measure average price changes in commodities produced by particular industries, as defined in the *Standard Industrial Classification Manual 1972* (Washington, U.S. Office of Management and Budget, 1972). These indexes are derived from several price series, combined to match the economic activity of the specified industry and weighted by the value of shipments in the industry. They use data from comprehensive industrial censuses conducted by the U.S. Bureau of the Census and the U.S. Department of Agriculture.

Notes on the data

Beginning with the May 1978 issue of the *Review*, regional CPI's cross classified by population size, were introduced. These indexes will enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes will be published bimonthly. (See table 24.)

For further details about the new and the revised indexes and a comparison of various aspects of these indexes with the old unrevised CPI, see *Facts About the Revised Consumer Price Index*, a pamphlet in the Consumer Price Index Revision 1978 series. See also *The Consumer Price Index: Concepts and Content Over the Years*, Report 517, revised edition (Bureau of Labor Statistics, May 1978).

For interarea comparisons of living costs at three hypothetical standards of living, see the family budget data published in the *Handbook of Labor Statistics, 1977*, Bulletin 1966 (Bureau of Labor Statistics, 1977), tables 122–133. Additional data and analysis on price changes are provided in the *CPI Detailed Report* and *Producer Prices and Price Indexes*, both monthly publications of the Bureau.

As of January 1976, the Wholesale Price Index (as it was then called) incorporated a revised weighting structure reflecting 1972 values of shipments. From January 1967 through December 1975, 1963 values of shipments were used as weights.

For a discussion of the general method of computing consumer, producer, and industry price indexes, see *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976), chapters 13–15. See also John F. Early, "Improving the measurement of producer price change," *Monthly Labor Review*, April 1978, pp. 7–15. For industry prices, see also Bennett R. Moss, "Industry and Sector Price Indexes," *Monthly Labor Review*, August 1965, pp. 974–82.

22. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967–80

[1967 = 100]

Year	All items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	116.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.2	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	6.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	267.2	11.3	203.7	8.5	213.6	8.8

23. Consumer Price Index for All Urban Consumers and revised CPI for Urban Wage Earners and Clerical Workers, U.S. city average—general summary and groups, subgroups, and selected items

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Nov.	June	July	Aug.	Sept.	Oct.	Nov.	Nov.	June	July	Aug.	Sept.	Oct.	Nov.
All items	256.2	271.3	274.4	276.5	297.3	279.9	280.7	256.4	271.4	274.6	276.5	279.1	279.7	280.4
Food and beverages	257.4	266.5	268.9	270.1	270.7	270.3	269.9	258.7	267.0	269.4	270.6	271.0	270.7	270.3
Housing	273.8	292.2	297.0	299.7	303.7	303.5	304.2	273.7	291.9	297.0	299.6	303.6	303.3	303.8
Apparel and upkeep	184.8	185.8	184.7	187.4	190.7	191.5	191.3	183.3	185.8	185.5	187.9	190.5	190.6	190.5
Transportation	259.0	279.9	282.6	283.7	285.2	287.2	289.1	259.7	281.0	283.9	285.1	286.6	288.9	290.8
Medical care	274.5	291.5	295.6	299.3	301.7	304.8	308.2	276.3	292.9	295.4	298.6	300.9	304.0	307.1
Entertainment	211.2	220.8	221.1	222.3	224.0	225.5	226.8	209.9	218.3	218.7	219.9	221.5	223.4	224.3
Other goods and services	222.8	233.4	234.4	235.6	243.0	245.2	245.9	221.0	231.4	232.4	233.5	239.3	241.4	242.5
Commodities	242.5	253.2	255.0	256.2	257.7	257.9	258.0	242.9	253.8	255.7	256.9	258.2	258.4	258.5
Commodities less food and beverages	232.0	243.1	244.7	245.8	247.6	248.0	248.3	232.0	243.8	245.5	246.7	248.4	248.7	249.1
Nondurables less food and beverages	245.3	263.5	262.9	263.9	265.8	266.4	266.7	247.1	266.3	266.0	266.8	268.5	268.6	269.0
Durables	220.6	226.6	229.6	230.9	232.6	232.9	233.2	218.9	225.2	228.4	229.9	231.5	232.0	232.3
Services	280.9	303.5	308.8	312.2	317.3	318.6	320.6	281.5	303.9	309.6	312.7	317.7	319.2	321.1
Rent, residential	198.3	206.8	207.8	210.3	211.9	213.6	215.0	198.0	206.4	207.4	209.9	211.5	213.2	214.5
Household services less rent	331.9	366.7	374.8	379.9	387.4	387.2	389.2	334.8	370.1	379.4	384.2	392.2	391.8	393.6
Transportation services	253.3	269.6	275.0	275.7	277.7	281.0	283.2	252.2	268.2	273.8	274.3	276.3	279.9	282.3
Medical care services	296.6	314.4	319.2	323.4	326.1	329.7	333.7	298.7	315.8	318.5	322.1	324.7	328.3	332.0
Other services	227.2	236.3	237.6	239.1	245.8	247.8	248.7	227.9	235.6	236.8	238.3	243.6	246.6	247.2
Special indexes:														
All items less food	253.2	269.5	272.7	274.9	278.2	279.0	280.1	253.4	269.7	273.1	275.2	278.2	279.1	280.1
All items less mortgage interest costs	244.5	256.9	259.3	260.9	262.9	263.6	264.2	245.1	257.5	260.0	261.5	263.3	264.0	264.6
Commodities less food	230.0	241.1	242.6	243.8	245.5	245.9	246.2	230.1	241.8	243.5	244.7	246.3	246.6	247.0
Nondurables less food	240.5	258.0	257.5	258.4	260.3	260.7	261.1	242.2	260.7	260.4	261.2	262.9	263.0	263.4
Nondurables less food and apparel	272.1	298.0	297.8	298.0	299.1	299.5	300.1	273.9	300.0	299.8	300.0	301.3	301.5	302.0
Nondurables	252.4	266.2	267.1	268.1	269.5	269.5	269.5	253.8	267.6	268.7	269.7	270.7	270.7	270.7
Services less rent	296.4	321.9	328.1	331.7	337.5	338.7	340.8	297.4	322.6	329.3	332.6	338.3	339.7	341.6
Services less medical care	277.2	300.1	305.4	308.8	314.1	315.1	316.9	277.7	300.4	306.3	309.4	314.6	315.8	317.5
Domestically produced farm foods	249.2	255.9	259.5	260.6	260.8	259.5	258.3	251.1	255.3	259.0	259.9	259.9	258.6	257.8
Selected beef cuts	278.9	271.6	275.3	276.7	277.9	275.5	271.9	278.4	274.3	277.9	277.2	279.7	276.5	273.2
Energy	366.1	414.0	415.7	416.1	417.1	414.9	414.1	369.5	417.3	418.9	418.9	420.1	417.9	417.3
All items less energy	247.7	260.2	263.5	265.6	268.6	269.4	270.4	247.2	259.3	262.7	264.7	267.5	268.3	269.2
All items less food and energy	242.4	255.6	259.0	261.3	264.8	265.9	267.2	241.5	254.5	258.1	260.3	263.6	264.8	265.9
Commodities less food and energy	211.2	217.5	219.4	220.9	222.9	223.4	223.8	209.9	216.6	218.7	220.2	222.1	222.6	223.0
Energy commodities	400.2	453.1	451.3	449.9	449.3	448.2	448.2	401.3	453.7	451.9	450.6	450.0	448.9	449.0
Services less energy	278.6	299.8	304.9	308.3	313.6	315.3	317.7	279.3	300.2	305.7	308.9	314.0	316.0	318.2
Purchasing power of the consumer dollar, 1967 = $1	$0.390	$0.369	$0.364	$0.362	$0.358	$0.357	$0.356	$0.390	$0.368	$0.364	$0.362	$0.358	$0.358	$0.357

23. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Nov.	June	July	Aug.	Sept.	Oct.	Nov.	Nov.	June	July	Aug.	Sept.	Oct.	Nov.
FOOD AND BEVERAGES	257.4	268.5	268.9	270.1	270.7	270.3	269.9	258.7	267.0	269.4	270.6	271.0	270.7	270.3
Food	264.5	273.6	276.2	277.4	278.0	277.6	277.1	265.7	274.0	276.6	277.7	278.1	277.8	277.4
Food at home	262.1	268.7	271.6	272.8	273.2	272.1	271.0	262.0	268.2	271.1	272.2	272.3	271.3	270.4
Cereals and bakery products	255.8	271.5	272.4	272.6	274.3	275.0	276.3	256.8	270.7	271.5	272.0	273.2	274.0	275.5
Cereals and cereal products (12/77 = 100)	138.7	148.3	149.0	149.5	150.1	150.0	149.9	139.7	150.0	150.6	151.3	151.2	151.5	152.1
Flour and prepared flour mixes (12/77 = 100)	132.9	139.0	139.5	139.6	139.5	139.3	138.4	133.6	141.4	141.9	142.0	141.1	140.9	140.2
Cereal (12/77 = 100)	141.1	152.4	153.4	154.6	155.7	156.1	157.4	141.5	154.0	154.8	156.4	157.2	157.9	158.9
Rice, pasta, and cornmeal (12/77 = 100)	140.5	150.9	151.2	151.4	151.6	151.1	149.6	142.7	152.7	153.2	153.1	152.6	152.7	153.9
Bakery products (12/77 = 100)	134.3	142.1	142.5	142.4	143.5	144.0	144.9	134.7	141.0	141.4	141.5	142.4	142.8	143.7
White bread	224.9	236.0	236.4	235.6	238.2	238.4	241.3	225.2	233.1	233.9	233.0	235.9	235.5	237.6
Other breads (12/77 = 100)	133.1	140.2	140.6	140.8	141.5	141.6	142.8	137.0	142.5	142.9	143.4	143.4	143.6	144.9
Fresh biscuits, rolls, and muffins (12/77 = 100)	134.6	141.7	142.4	143.4	143.3	144.8	145.2	134.1	139.7	141.7	141.0	140.1	141.7	141.9
Fresh cakes and cupcakes (12/77 = 100)	133.4	142.3	142.7	142.7	144.4	143.9	145.0	133.1	141.2	141.4	141.2	142.3	141.7	143.2
Cookies (12/77 = 100)	133.1	143.3	143.0	143.1	143.9	145.7	146.3	134.5	143.3	142.6	144.1	144.6	146.4	146.8
Crackers, bread, and cracker products (12/77 = 100)	125.6	130.7	131.6	130.6	132.0	133.2	133.1	125.7	131.5	131.2	130.9	132.2	134.0	133.4
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	135.3	142.9	143.9	143.9	144.3	144.4	144.8	136.1	142.3	142.8	143.4	144.8	144.9	145.8
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	136.2	146.1	147.2	147.1	148.0	148.9	149.2	132.4	140.3	140.9	141.5	142.1	142.8	143.1
Meats, poultry, fish, and eggs	254.9	248.7	254.1	255.8	257.7	256.4	254.2	254.2	248.4	254.1	255.5	257.5	256.0	254.0
Meats, poultry, and fish	260.7	255.0	260.7	262.2	263.4	262.2	259.2	259.9	254.5	260.5	261.8	263.2	261.7	258.8
Meats	261.1	254.2	259.6	262.0	263.4	262.5	259.6	260.3	253.9	259.7	261.3	263.3	262.1	259.3
Beef and veal	277.9	271.1	274.5	275.9	277.1	274.9	271.5	279.1	273.0	276.5	275.9	278.3	275.3	272.2
Ground beef other than canned	277.1	264.6	264.5	267.4	270.3	267.4	266.1	280.4	267.9	267.9	269.4	273.8	268.6	268.0
Chuck roast	291.7	281.0	283.5	285.3	289.4	287.8	282.6	301.9	288.9	295.5	295.5	299.9	297.2	292.6
Round roast	251.2	246.2	245.6	247.2	244.1	245.1	245.0	249.9	249.5	249.8	247.3	249.1	250.1	248.2
Round steak	263.8	255.1	258.9	256.0	255.9	259.0	256.7	261.8	253.6	257.0	251.5	252.5	254.9	254.8
Sirloin steak	271.8	274.6	284.3	282.2	281.9	273.3	262.0	274.9	278.7	285.6	279.2	281.9	275.1	260.7
Other beef and veal (12/77 = 100)	161.8	159.9	163.5	164.3	164.9	163.4	161.1	160.3	159.2	162.4	162.6	162.8	161.3	159.2
Pork	228.6	221.2	231.5	235.3	238.1	238.6	235.6	228.5	221.3	232.6	236.5	239.4	239.3	235.9
Bacon	229.5	216.5	228.1	231.1	237.1	240.1	238.1	232.3	220.5	230.5	234.5	241.1	245.1	242.9
Chops	208.5	209.8	221.8	224.1	225.1	223.1	217.0	204.8	209.8	222.4	224.4	224.7	221.3	216.2
Ham other than canned (12/77 = 100)	107.9	98.0	102.0	105.3	106.8	109.4	108.9	106.0	95.1	100.4	103.7	105.6	107.5	106.6
Sausage	283.5	278.9	289.7	297.2	300.7	298.7	298.1	285.9	278.7	293.4	298.6	302.3	302.1	299.2
Canned ham	237.7	229.8	233.0	234.9	239.5	241.9	243.1	242.2	230.1	234.4	238.0	242.9	244.7	247.0
Other pork (12/77 = 100)	128.4	126.7	133.6	135.0	135.4	134.1	131.1	128.8	127.7	134.5	136.3	136.7	134.5	130.9
Other meats	261.8	255.9	258.4	261.4	260.7	261.6	260.5	259.0	253.1	255.6	259.6	258.7	260.5	258.9
Frankfurters	262.6	250.7	251.8	259.8	256.4	261.2	259.9	262.6	249.8	251.9	260.4	259.1	262.4	260.9
Bologna, liverwurst, and salami (12/77 = 100)	148.4	143.9	145.9	147.0	147.5	147.6	146.7	145.7	141.9	144.6	145.7	144.8	146.9	145.9
Other lunchmeats (12/77 = 100)	129.7	127.6	129.1	130.6	131.8	131.8	132.1	127.5	126.0	126.5	128.8	129.5	130.2	130.6
Lamb and organ meats (12/77 = 100)	146.1	146.5	147.6	146.8	144.4	143.4	141.7	147.7	147.1	148.9	148.3	146.0	145.0	144.6
Poultry	204.1	196.8	204.8	202.0	199.7	196.6	192.3	201.4	194.4	203.1	201.2	198.1	194.7	190.6
Fresh whole chicken	208.7	193.8	206.9	201.4	197.3	194.0	190.9	203.5	190.3	202.9	199.6	194.0	189.9	186.5
Fresh and frozen chicken parts (12/77 = 100)	131.8	128.3	133.0	131.8	130.5	129.2	127.3	131.6	127.0	133.3	131.6	130.1	129.7	126.5
Other poultry (12/77 = 100)	128.0	128.9	130.0	129.7	129.9	127.2	122.2	126.5	128.2	129.3	129.9	129.6	126.1	121.5
Fish and seafood	343.0	352.1	356.9	356.8	362.6	360.8	358.9	340.0	349.8	353.5	356.4	358.6	358.2	356.6
Canned fish and seafood (12/77 = 100)	136.0	139.3	140.6	139.8	140.9	140.5	141.5	133.5	137.9	139.0	138.5	139.4	140.3	141.0
Fresh and frozen fish and seafood (12/77 = 100)	127.5	131.0	133.1	133.6	136.5	135.6	133.9	127.0	130.4	131.9	134.1	134.9	134.0	132.7
Eggs	185.2	172.1	174.2	177.6	188.8	185.9	194.7	185.7	173.0	175.0	177.7	189.5	187.2	196.7
Dairy products	235.4	243.8	244.2	243.8	244.3	244.6	245.0	235.9	243.9	243.9	243.9	244.1	244.2	244.7
Fresh milk and cream (12/77 = 100)	130.4	134.8	134.9	134.5	134.7	134.7	134.9	130.4	134.5	134.4	134.3	134.3	134.4	134.6
Fresh whole milk	213.3	220.7	220.7	220.2	220.0	220.2	220.8	213.0	220.0	219.9	219.8	219.4	219.5	220.1
Other fresh milk and cream (12/77 = 100)	130.5	134.6	134.9	134.2	135.4	135.2	134.9	131.0	135.1	134.5	134.4	135.3	135.2	134.9
Processed dairy products (12/77 = 100)	136.9	142.0	142.5	142.5	143.0	143.3	143.5	137.9	142.9	143.1	143.3	143.4	143.6	144.0
Butter	241.5	245.1	245.8	246.2	247.1	247.2	248.0	244.4	248.7	247.7	248.5	249.9	249.7	250.2
Cheese (12/77 = 100)	135.9	140.5	140.7	140.8	140.8	140.9	141.1	136.2	140.9	141.3	141.5	140.9	140.7	141.1
Ice cream and related products (12/77 = 100)	139.1	146.4	147.6	147.9	148.7	149.9	149.3	140.9	147.8	148.0	147.9	149.1	149.9	149.4
Other dairy products (12/77 = 100)	130.6	136.3	136.6	135.6	137.3	137.0	136.7	131.9	136.8	137.2	137.2	137.6	138.1	140.2
Fruits and vegetables	253.3	278.1	284.4	286.1	281.6	275.2	272.0	251.4	275.3	281.7	282.5	276.3	270.8	268.1
Fresh fruits and vegetables	258.3	285.2	294.0	295.8	286.9	273.5	267.8	255.7	281.0	290.2	290.4	278.2	267.2	261.9
Fresh fruits	258.6	278.9	292.1	306.9	306.4	291.4	276.1	255.5	272.1	285.5	298.4	293.7	279.5	266.0
Apples	213.5	239.9	251.9	282.1	262.9	237.0	248.7	213.0	241.0	253.1	284.6	261.8	236.5	249.1
Bananas	235.7	260.5	240.6	245.2	250.7	254.9	249.4	232.0	259.0	233.8	239.9	251.3	253.3	248.3
Oranges	316.6	287.1	327.8	353.7	346.2	328.5	314.0	300.4	274.0	307.0	325.1	314.6	299.9	286.0
Other fresh fruits (12/77 = 100)	134.9	154.4	160.4	163.5	168.4	160.9	144.7	136.4	149.9	158.9	160.5	161.5	154.7	139.7
Fresh vegetables	258.0	291.1	295.9	285.5	268.6	256.8	260.1	256.0	289.0	294.4	283.2	264.4	256.1	258.2
Potatoes	293.0	414.3	414.9	375.1	329.1	290.4	286.3	289.9	402.7	404.2	362.8	316.8	287.7	281.5
Lettuce	273.5	238.7	261.3	290.6	293.5	258.3	257.1	267.2	237.1	259.2	290.0	292.9	257.2	247.4
Tomatoes	192.2	205.2	194.0	209.9	193.9	207.3	206.9	188.9	200.8	195.5	211.0	191.3	206.4	209.7
Other fresh vegetables (12/77 = 100)	139.6	151.8	154.5	143.6	137.9	139.6	145.0	140.0	153.6	155.8	144.1	136.6	140.0	145.8
Processed fruits and vegetables	250.1	272.8	276.4	277.9	278.3	279.4	279.2	248.8	271.4	274.6	276.2	276.7	277.2	277.3
Processed fruits (12/77 = 100)	129.1	142.0	143.1	143.4	143.7	144.9	145.1	129.4	142.1	142.8	143.4	143.7	144.2	144.6
Frozen fruit and fruit juices (12/77 = 100)	120.5	143.4	144.0	143.5	143.6	144.7	144.9	120.7	142.3	142.9	142.8	142.8	143.4	144.1
Fruit juices other than frozen (12/77 = 100)	131.9	145.5	146.8	147.4	147.5	148.4	148.6	132.3	145.8	146.1	147.1	147.8	147.6	147.4
Canned and dried fruits (12/77 = 100)	133.3	137.1	138.4	139.1	139.8	141.2	141.6	133.5	137.9	139.1	139.8	140.1	141.1	141.8
Processed vegetables (12/77 = 100)	122.2	132.1	134.6	135.7	135.9	135.9	135.4	121.0	131.2	133.6	134.6	134.8	134.9	134.7
Frozen vegetables (12/77 = 100)	121.8	130.8	133.2	134.9	135.7	136.9	137.4	121.7	131.9	134.1	135.7	136.6	137.5	139.2

23. Continued — Consumer Price Index — U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Nov.	June	July	Aug.	Sept.	Oct.	Nov.	Nov.	June	July	Aug.	Sept.	Oct.	Nov.
FOOD AND BEVERAGES — Continued														
Food — Continued														
Food at home — Continued														
Fruits and vegetables — Continued														
Cut corn and canned beans except lima (12/77 = 100)	124.1	134.6	136.0	137.4	136.8	137.7	138.3	121.8	133.6	134.8	135.4	135.1	135.5	136.0
Other canned and dried vegetables (12/77 = 100)	121.5	131.4	134.6	135.4	135.6	134.6	133.1	120.3	129.7	132.8	133.7	133.8	133.3	131.8
Other foods at home	314.8	323.6	323.3	325.1	325.7	326.4	326.0	315.7	324.5	324.2	326.1	326.2	327.1	327.0
Sugar and sweets	361.3	361.3	360.0	361.3	361.4	359.9	359.1	363.9	363.0	362.8	362.7	363.1	360.2	359.0
Candy and chewing gum (12/77 = 100)	135.7	145.2	145.9	146.1	146.8	148.8	149.3	136.8	146.5	147.3	147.4	147.6	148.7	149.9
Sugar and artificial sweeteners (12/77 = 100)	225.9	168.2	164.6	164.3	163.0	157.1	155.2	225.9	169.3	166.6	165.3	164.9	158.4	157.0
Other sweets (12/77 = 100)	132.5	142.6	142.9	145.0	145.3	145.2	144.9	131.9	140.8	141.8	142.9	143.8	144.0	143.1
Fats and oils (12/77 = 100)	247.4	269.6	269.0	269.2	268.5	268.5	262.2	248.2	269.5	269.0	268.7	267.4	268.1	263.1
Margarine	254.9	256.1	255.9	258.2	256.7	256.6	255.2	256.9	258.0	256.6	255.7	254.5	255.9	254.9
Nondairy substitutes and peanut butter (12/77 = 100)	127.4	181.8	181.0	179.8	178.5	176.5	163.0	128.0	180.5	179.4	178.8	177.2	175.2	163.0
Other fats, oils, and salad dressings (12/77 = 100)	129.0	129.6	129.4	129.4	129.6	130.5	129.8	128.8	129.6	129.4	129.6	129.2	130.3	130.4
Nonalcoholic beverages	405.5	412.8	410.3	413.1	413.7	414.8	413.4	407.8	414.6	411.3	415.2	414.7	416.0	415.2
Cola drinks, excluding diet cola	294.0	297.0	294.7	298.2	298.9	301.1	298.8	293.6	294.1	290.8	296.6	295.6	297.7	296.1
Carbonated drinks, including diet cola (12/77 = 100)	133.8	140.8	139.6	141.5	142.4	142.3	141.4	133.2	139.3	138.3	138.9	140.3	139.6	139.3
Roasted coffee	389.2	353.1	351.4	346.0	345.1	343.1	341.0	385.5	348.5	346.6	342.8	340.5	338.9	337.3
Freeze dried and instant coffee	364.9	335.2	334.3	333.3	330.8	329.9	330.8	364.0	337.1	334.9	333.8	331.4	332.7	333.2
Other noncarbonated drinks (12/77 = 100)	126.7	134.5	134.2	134.9	134.9	135.6	136.4	126.2	134.4	134.0	135.0	134.6	135.5	136.4
Other prepared foods	239.9	254.4	258.3	257.9	259.0	260.5	262.7	240.4	255.8	257.9	258.7	260.5	262.3	264.5
Canned and packaged soup (12/77 = 100)	125.1	132.6	133.2	133.6	134.9	133.1	133.4	125.6	133.5	134.5	134.8	136.4	135.6	136.1
Frozen prepared foods (12/77 = 100)	136.6	142.2	143.7	143.5	144.8	144.1	146.5	133.5	140.8	142.3	142.5	142.7	142.8	145.1
Snacks (12/77 = 100)	135.2	147.2	147.5	148.8	149.6	152.0	152.5	136.1	149.1	150.0	151.5	152.6	155.3	155.6
Seasonings, olives, pickles, and relish (12/77 = 100)	133.5	141.1	142.0	144.4	144.4	146.2	148.9	132.8	140.3	141.4	142.8	142.7	144.8	147.4
Other condiments (12/77 = 100)	133.3	140.8	142.3	142.9	143.3	143.5	145.0	136.5	143.2	144.4	145.6	145.3	145.5	146.5
Miscellaneous prepared foods (12/77 = 100)	133.5	139.3	140.7	142.0	142.3	144.5	144.8	133.8	139.9	141.0	142.1	142.8	143.9	145.2
Other canned and packaged prepared foods (12/77 = 100)	128.6	137.7	139.0	138.5	139.9	140.5	141.8	129.9	138.5	139.8	140.8	141.1	141.9	143.0
Food away from home	275.3	290.6	292.4	293.7	294.8	296.2	297.2	279.5	293.5	295.2	296.4	297.6	299.0	299.6
Lunch (12/77 = 100)	134.3	141.5	142.6	143.2	143.6	143.9	144.4	135.7	142.8	143.6	144.2	144.6	145.3	145.6
Dinner (12/77 = 100)	133.4	140.7	141.3	141.9	142.4	143.2	143.6	136.1	142.6	143.0	143.7	144.3	144.8	145.1
Other meals and snacks (12/77 = 100)	132.5	140.3	141.6	142.1	143.1	143.9	144.6	134.5	141.3	142.7	143.1	143.9	144.8	145.1
Alcoholic beverages	190.9	198.8	200.5	201.4	202.5	201.4	202.3	192.8	202.1	202.8	203.8	204.6	204.3	204.6
Alcoholic beverages at home (12/77 = 100)	124.4	129.7	130.1	130.6	131.4	130.5	131.2	125.9	131.5	131.9	132.4	132.8	132.5	132.8
Beer and ale	192.0	202.0	201.8	202.6	203.6	202.5	204.0	192.2	202.4	202.4	203.2	203.5	203.1	203.6
Whiskey	138.9	143.0	143.7	144.7	145.4	144.0	144.8	139.8	144.0	144.7	145.6	146.2	146.4	146.2
Wine	215.2	224.6	227.5	227.4	229.7	228.2	227.5	224.0	233.4	236.9	235.5	237.6	238.1	237.4
Other alcoholic beverages (12/77 = 100)	112.9	116.1	116.3	117.0	117.5	116.3	117.3	112.0	115.7	155.9	117.0	117.1	115.7	116.8
Alcoholic beverages away from home (12/77 = 100)	125.3	133.1	134.1	134.7	135.4	135.5	135.7	125.5	133.4	134.0	135.4	136.2	136.4	136.6
HOUSING	273.8	292.2	297.0	299.7	303.7	303.5	304.2	273.7	291.9	297.0	299.6	303.6	303.3	303.8
Shelter	294.7	312.6	318.5	322.0	326.9	326.6	327.2	296.4	313.7	320.2	323.6	328.6	328.1	328.5
Rent, residential	198.3	206.8	207.8	210.3	211.9	213.6	215.0	198.0	206.4	207.4	209.9	211.5	213.2	214.5
Other rental costs	288.3	289.5	293.6	298.5	308.1	308.7	305.3	288.4	289.7	293.3	299.0	308.0	308.4	305.0
Lodging while out of town	284.2	311.8	318.3	325.7	328.3	324.2	318.6	283.3	310.6	316.3	324.4	325.3	323.3	317.9
Tenants' insurance (12/77 = 100)	126.5	133.1	133.3	133.9	135.9	140.0	140.4	126.8	133.4	133.7	134.5	136.4	140.1	140.3
Homeownership	329.4	350.4	358.0	361.8	367.8	366.7	367.2	332.3	352.7	361.2	364.8	371.0	369.7	369.8
Home purchase	267.3	268.6	271.4	272.6	274.5	272.5	270.2	268.2	268.2	271.2	272.3	273.8	271.4	268.6
Financing, taxes, and insurance	416.9	467.2	480.0	488.3	501.8	501.8	505.6	423.1	473.8	486.9	495.3	509.0	508.3	511.9
Property insurance	384.5	386.6	387.1	389.0	389.7	392.5	393.3	387.8	388.1	388.3	390.5	391.9	394.7	395.5
Property taxes	192.8	200.3	201.4	205.2	206.2	207.4	208.0	194.7	202.2	203.2	207.1	208.0	209.2	210.0
Contracted mortgage interest cost	536.7	610.4	630.1	641.3	662.0	661.3	666.8	539.7	612.9	632.6	643.8	664.4	662.5	667.7
Mortgage interest rates	198.0	226.4	229.4	232.4	238.2	239.5	244.1	198.4	227.2	230.3	233.3	239.2	240.5	245.3
Maintenance and repairs	294.2	315.5	319.3	320.5	321.6	320.8	322.8	291.1	308.2	316.2	315.8	318.1	319.2	319.8
Maintenance and repair services	318.6	344.4	349.0	350.6	352.5	351.1	353.8	315.9	338.7	350.5	349.5	352.5	354.2	354.9
Maintenance and repair commodities	237.1	247.6	249.3	249.5	248.7	249.3	249.7	235.6	241.5	242.4	243.1	244.1	244.0	244.5
Paint and wallpaper, supplies, tools, and equipment (12/77 = 100)	137.4	145.3	146.7	146.9	146.2	146.7	146.5	134.7	138.4	138.2	138.2	139.1	139.9	140.0
Lumber, awnings, glass, and masonry (12/77 = 100)	122.3	124.7	125.0	124.2	125.0	124.4	124.1	122.0	122.7	123.0	122.0	123.2	122.3	121.8
Plumbing, electrical, heating, and cooling supplies (12/77 = 100)	124.2	131.2	132.7	132.0	131.2	132.4	133.1	124.6	128.5	130.1	130.6	131.7	132.1	132.4
Miscellaneous supplies and equipment (12/77 = 100)	123.7	128.5	129.2	130.5	131.2	131.7	131.6	126.4	131.7	132.5	133.3	134.3	133.7	134.2
Fuel and other utilities	285.7	320.2	325.1	327.8	331.1	330.1	329.8	286.3	321.2	326.4	328.7	332.3	330.9	330.9
Fuels	358.7	411.7	417.2	419.5	422.4	419.0	417.6	358.2	411.2	417.0	418.7	422.2	418.4	417.4
Fuel oil, coal, and bottled gas	567.0	682.0	677.9	674.6	673.4	672.7	678.1	568.3	685.1	681.1	677.9	677.0	675.9	679.3
Fuel oil	589.8	715.7	711.0	707.3	705.7	704.3	706.8	590.3	718.4	713.8	710.2	709.0	707.1	709.6
Other fuels (6/78 = 100)	145.7	164.3	164.0	163.6	163.8	165.0	167.7	147.3	165.5	165.4	165.1	165.3	166.4	169.1
Gas (piped) and electricity	310.5	350.2	357.6	360.8	364.5	360.6	358.3	309.8	349.0	356.7	359.4	363.6	359.3	357.5
Electricity	258.7	296.7	306.2	311.9	309.8	303.0	298.6	258.4	296.6	306.2	312.1	309.9	302.7	297.7
Utility (piped) gas	379.0	416.9	418.6	416.2	431.7	434.5	437.0	376.7	413.2	415.8	411.2	428.5	430.8	436.0

23. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Nov.	June	July	Aug.	Sept.	Oct.	Nov.	Nov.	June	July	Aug.	Sept.	Oct.	Nov.
HOUSING – Continued														
Fuel and other utilities – Continued														
Other utilities and public services	169.0	177.1	180.8	183.7	187.4	189.4	190.7	169.1	177.3	181.3	184.3	187.8	189.8	191.0
Telephone services	138.7	143.5	147.2	149.2	152.5	154.3	155.6	138.7	143.6	147.5	149.5	152.7	154.5	155.8
Local charges (12/77 = 100)	108.3	114.9	116.7	117.3	120.5	121.5	123.5	108.3	115.1	116.9	117.6	120.7	121.8	123.8
Interstate toll calls (12/77 = 100)	[1]01.7	101.8	109.1	113.4	114.9	116.6	116.7	101.8	101.9	108.6	113.8	115.1	116.6	116.8
Intrastate toll calls (12/77 = 100)	100.6	101.5	101.5	101.8	103.9	105.5	105.3	100.5	101.3	101.3	101.6	103.7	105.3	105.0
Water and sewerage maintenance	267.0	291.2	294.0	299.2	304.1	305.2	306.1	268.0	292.5	295.8	301.4	306.0	307.3	307.9
Household furnishings and operations	211.0	221.1	222.4	222.9	224.5	225.6	227.2	208.1	217.8	219.1	219.8	221.2	222.2	223.6
Housefurnishings	178.1	185.2	186.0	186.2	187.9	188.7	189.4	176.4	182.8	184.1	184.5	185.7	186.6	187.3
Textile housefurnishings	192.4	202.5	202.9	203.4	207.7	210.4	211.7	195.7	204.4	206.2	207.3	213.0	214.1	214.7
Household linens (12/77 = 100)	117.3	125.1	123.3	124.6	127.7	130.1	130.8	122.6	125.7	126.0	126.8	129.7	132.0	131.9
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	122.7	127.4	129.8	129.1	131.4	132.2	133.1	121.2	129.5	131.5	132.1	136.3	135.2	136.1
Furniture and bedding	196.5	204.6	206.0	205.4	207.7	207.9	209.2	193.9	200.1	202.3	201.4	202.7	203.8	205.3
Bedroom furniture (12/77 = 100)	128.6	134.6	135.0	135.9	137.6	137.4	139.6	125.5	129.2	130.7	132.2	132.9	132.3	135.2
Sofas (12/77 = 100)	114.2	116.2	117.6	116.0	118.6	119.3	118.7	113.6	116.0	116.2	115.0	117.4	119.0	118.8
Living room chairs and tables (12/77 = 100)	113.3	116.9	117.9	116.7	116.8	117.0	118.8	115.6	118.2	119.5	116.9	117.2	118.5	118.9
Other furniture (12/77 = 100)	127.9	135.4	136.2	135.9	137.3	137.3	137.1	124.6	130.5	132.9	132.2	132.3	133.0	133.1
Appliances including TV and sound equipment	142.6	146.3	147.1	147.3	147.7	147.8	148.2	141.4	145.6	146.3	146.6	146.7	147.2	147.7
Television and sound equipment (12/77 = 100)	107.4	108.2	108.8	108.6	108.7	109.1	109.0	106.1	107.3	107.7	107.8	107.8	108.1	108.3
Television	105.1	105.3	105.6	105.0	104.6	105.0	104.8	103.8	104.3	104.5	104.2	103.6	103.8	103.6
Sound equipment (12/77 = 100)	110.6	111.9	112.7	112.8	113.4	113.8	113.9	109.1	110.9	111.4	111.9	112.4	112.8	113.4
Household appliances	166.2	173.2	174.2	174.9	175.7	175.3	176.1	165.2	172.6	173.6	174.1	174.4	175.1	175.9
Refrigerators and home freezers	166.1	172.4	174.2	175.8	177.5	177.0	178.7	169.2	177.1	178.1	178.9	180.6	181.6	182.7
Laundry equipment (12/77 = 100)	122.0	128.0	128.1	129.2	129.7	130.5	130.7	120.2	127.1	128.3	129.1	128.8	129.8	130.8
Other household appliances (12/77 = 100)	114.2	118.9	119.6	119.5	119.7	118.9	119.4	112.4	116.6	117.1	117.0	117.1	117.1	117.4
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	113.0	118.4	119.2	118.5	118.8	118.2	118.7	112.6	116.5	117.1	116.4	116.0	115.9	116.8
Office machines, small electric appliances, and air conditioners (12/77 = 100)	115.5	119.4	120.1	120.6	120.8	119.8	120.1	112.1	116.7	117.1	117.7	118.3	118.4	118.1
Other household equipment (12/77 = 100)	124.6	131.0	131.2	131.7	133.1	134.2	134.4	123.2	129.3	129.8	131.0	131.6	132.4	132.4
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	124.3	132.1	132.4	133.4	134.8	135.4	136.1	119.0	125.3	127.1	129.3	129.6	129.6	129.7
Clocks, lamps, and decor items (12/77 = 100)	121.4	124.6	125.0	125.8	128.2	128.7	129.5	119.2	121.9	122.9	122.5	123.8	124.5	125.2
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	130.6	139.5	139.5	138.9	140.4	141.1	141.2	127.4	136.0	136.4	137.0	137.8	137.9	137.5
Lawn equipment, power tools, and other hardware (12/77 = 100)	118.4	122.6	122.7	124.0	124.5	127.2	126.9	122.3	127.1	126.7	128.8	129.2	131.2	131.6
Housekeeping supplies	256.0	269.8	271.5	272.0	273.3	274.3	275.4	253.5	266.9	267.9	268.6	270.4	271.2	271.9
Soaps and detergents	252.4	266.0	266.5	267.0	268.9	269.3	269.7	248.2	263.6	263.1	263.6	265.6	265.3	265.2
Other laundry and cleaning products (12/77 = 100)	126.7	133.4	134.8	134.8	135.7	136.7	137.3	126.2	132.3	133.6	134.7	135.8	136.6	137.0
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	135.6	137.6	138.8	138.4	139.9	141.8	143.6	136.6	138.2	139.0	138.7	140.4	142.4	143.9
Stationery, stationery supplies, and gift wrap (12/77 = 100)	118.3	125.8	126.6	126.6	127.2	128.1	128.5	118.8	127.2	127.9	128.2	129.7	130.8	131.3
Miscellaneous household products (12/77 = 100)	131.1	139.5	140.5	141.7	142.8	142.8	143.0	128.4	136.1	136.6	136.9	138.1	137.8	137.4
Lawn and garden supplies (12/77 = 100)	128.0	138.4	138.8	139.2	137.8	136.6	136.8	122.5	131.3	131.7	131.8	131.1	129.0	129.6
Housekeeping services	276.1	292.9	295.3	296.9	298.3	300.5	305.2	272.5	291.7	293.4	295.1	296.9	298.9	303.9
Postage	257.3	308.0	308.0	308.0	308.0	308.0	337.5	257.3	308.1	308.1	308.1	308.1	308.1	337.5
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	134.6	141.9	143.1	143.9	144.7	145.5	147.0	131.4	141.8	142.8	143.8	144.9	145.2	146.7
Appliance and furniture repair (12/77 = 100)	120.7	126.3	127.8	128.5	129.0	131.3	132.3	119.7	125.4	126.4	127.2	128.3	130.5	131.2
APPAREL AND UPKEEP	184.8	185.8	184.7	187.4	190.7	191.5	191.3	183.3	185.8	185.5	187.9	190.5	190.6	190.5
Apparel commodities	177.2	176.4	175.1	178.0	181.4	182.1	181.8	176.0	177.0	176.6	179.0	181.6	181.5	181.5
Apparel commodities less footwear	173.9	172.5	171.2	174.3	178.0	178.4	177.9	172.5	173.0	172.8	175.2	178.1	177.7	177.3
Men's and boys'	174.8	176.6	175.6	177.6	181.1	183.6	183.6	174.8	177.2	176.9	178.4	181.4	182.9	183.2
Men's (12/77 = 100)	110.1	111.0	110.3	111.7	114.3	115.9	115.9	110.2	111.6	111.6	112.8	115.0	115.8	115.9
Suits, sport coats, and jackets (12/77 = 100)	104.7	104.3	102.5	105.6	108.8	109.8	109.9	99.4	98.4	97.4	99.7	102.1	102.0	102.0
Coats and jackets (12/77 = 100)	100.5	98.1	98.7	97.7	101.0	102.4	102.8	101.9	101.2	100.8	102.4	106.1	104.9	105.1
Furnishings and special clothing (12/77 = 100)	123.3	129.7	129.6	129.5	132.7	134.3	133.6	119.7	124.1	124.8	125.3	128.5	130.0	129.8
Shirts (12/77 = 100)	119.6	117.9	115.5	117.9	120.6	123.0	123.0	120.4	120.4	118.8	122.1	123.9	125.5	125.4
Dungarees, jeans, and trousers (12/77 = 100)	103.5	105.0	106.5	106.6	107.8	109.2	109.8	108.7	111.8	113.2	112.5	113.5	114.7	115.5
Boys' (12/77 = 100)	113.3	115.4	115.1	115.8	116.4	118.1	118.0	112.7	114.3	113.6	113.8	114.8	116.4	116.5
Coats, jackets, sweaters, and shirts (12/77 = 100)	109.4	108.7	107.0	109.2	111.3	111.9	111.6	112.5	109.8	107.5	109.5	112.3	113.5	112.8
Furnishings (12/77 = 100)	118.4	123.9	124.5	124.3	125.0	125.6	127.0	115.2	119.5	120.6	120.3	120.9	121.8	123.3
Suits, trousers, sport coats, and jackets (12/77 = 100)	114.3	117.3	117.7	117.5	117.0	119.9	119.3	111.9	115.9	115.6	114.7	114.4	116.6	116.9
Women's and girls'	150.9	155.4	153.5	157.8	162.9	161.2	160.6	159.9	158.1	157.9	161.2	164.9	162.7	162.1
Women's (12/77 = 100)	106.3	102.7	101.2	104.4	108.1	106.8	106.3	106.6	104.9	104.5	107.1	109.8	108.1	107.6
Coats and jackets	164.7	149.5	153.9	162.1	170.8	167.3	164.0	175.5	148.9	159.0	168.7	177.8	171.4	166.3
Dresses	168.1	163.7	162.2	166.2	170.8	166.9	165.0	157.7	156.6	154.1	153.4	155.5	151.5	151.9
Separates and sportswear (12/77 = 100)	102.9	98.0	95.1	97.4	101.1	100.4	101.1	102.8	101.0	99.1	101.1	103.3	102.3	101.9
Underwear, nightwear, and hosiery (12/77 = 100)	116.7	119.8	120.0	121.2	122.8	123.0	124.1	116.4	120.0	120.1	121.0	122.7	123.4	124.0
Suits (12/77 = 100)	97.4	86.3	78.6	87.0	95.4	92.4	89.5	102.8	103.6	100.6	109.8	115.0	110.2	108.5
Girls' (12/77 = 100)	106.5	106.4	106.5	107.9	109.7	109.2	109.2	105.3	106.2	106.9	107.6	108.8	108.4	108.4
Coats, jackets, dresses, and suits (12/77 = 100)	102.7	100.4	100.0	101.6	103.3	99.8	100.3	99.1	98.1	98.9	101.5	103.3	99.8	99.9
Separates and sportswear (12/77 = 100)	105.9	105.9	106.1	108.7	111.0	112.0	111.3	106.8	108.1	108.9	108.9	110.0	110.6	110.2
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	114.0	117.2	117.6	117.0	117.9	119.6	120.0	112.6	116.2	116.3	115.1	115.5	118.5	119.0

23. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Nov.	June	July	Aug.	Sept.	Oct.	Nov.	Nov.	June	July	Aug.	Sept.	Oct.	Nov.
APPAREL AND UPKEEP—Continued														
Apparel commodities—Continued														
Apparel commodities less footwear—Continued														
Infants' and toddlers'	248.9	260.0	258.8	263.6	268.4	268.5	264.9	254.0	273.0	272.9	279.3	279.8	281.6	274.1
Other apparel commodities	213.7	212.2	212.4	214.0	213.3	216.2	214.8	204.0	204.8	204.8	206.1	206.0	206.2	206.1
Sewing materials and notions (12/77 = 100)	110.3	114.5	115.3	117.5	118.3	118.1	118.6	110.2	113.2	113.6	115.3	116.4	116.3	116.4
Jewelry and luggage (12/77 = 100)	149.9	146.8	146.6	147.2	146.2	149.0	147.5	141.8	141.2	141.0	141.4	140.9	141.1	141.0
Footwear	195.5	200.4	199.0	200.0	202.4	204.2	205.4	196.4	200.6	199.2	200.8	202.3	204.1	206.2
Men's (12/77 = 100)	125.4	127.7	128.0	128.3	128.8	129.3	130.3	126.7	129.5	129.5	129.8	129.7	130.3	132.3
Boys' and girls' (12/77 = 100)	126.2	129.1	130.1	129.1	129.7	131.1	132.1	127.4	128.6	128.7	130.4	130.7	132.2	134.0
Women's (12/77 = 100)	119.4	121.6	118.7	120.6	123.5	124.9	125.2	116.5	120.2	117.8	118.9	121.2	122.5	122.9
Apparel services	241.9	257.8	258.9	260.2	262.0	263.2	264.6	239.9	255.7	256.3	258.2	260.0	262.1	262.3
Laundry and drycleaning other than coin operated (12/77 = 100)	142.4	153.2	153.8	154.7	155.7	157.1	158.2	141.6	152.5	153.1	153.9	155.0	156.4	156.3
Other apparel services (12/77 = 100)	130.0	136.0	136.7	137.2	138.2	137.5	137.9	129.1	135.0	136.1	136.5	137.4	138.3	138.6
TRANSPORTATION	258.0	279.9	282.6	283.7	285.2	287.2	289.1	259.7	281.0	283.9	285.1	286.6	288.9	290.8
Private	257.4	277.9	279.6	280.5	281.9	283.9	285.8	258.6	279.7	281.6	282.6	284.1	286.4	288.3
New cars	184.3	192.2	192.5	191.9	191.3	192.5	195.3	184.5	192.5	192.9	192.1	191.4	192.7	195.2
Used cars	230.8	252.9	260.3	266.9	272.8	278.2	281.4	230.8	252.9	260.3	266.9	272.8	278.2	281.4
Gasoline	370.5	414.4	412.9	411.7	411.2	409.9	409.5	371.7	415.6	414.0	412.9	412.4	411.3	410.9
Automobile maintenance and repair	278.4	291.9	293.5	295.5	298.7	301.3	302.8	278.9	292.6	293.4	296.1	299.3	301.8	303.4
Body work (12/77 = 100)	136.1	142.3	144.1	145.8	147.4	148.7	149.9	135.9	142.2	143.3	145.4	146.1	147.2	148.3
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	131.6	138.9	139.9	140.9	143.1	144.0	144.2	135.0	141.7	141.4	142.6	145.5	146.5	147.3
Maintenance and servicing (12/77 = 100)	131.0	137.1	137.4	137.8	138.9	140.3	140.9	131.1	136.9	137.3	138.2	139.2	140.3	140.5
Power plant repair (12/77 = 100)	131.3	138.2	139.9	141.2	142.6	144.0	144.9	130.8	138.3	139.1	140.5	141.9	143.5	144.7
Other private transportation	228.6	241.0	242.9	243.0	244.2	247.5	249.5	230.6	243.9	246.0	245.6	246.9	250.6	253.0
Other private transportation commodities	203.1	208.5	208.8	212.1	212.6	212.7	213.4	203.4	211.1	210.8	213.4	215.5	216.1	216.8
Motor oil, coolant, and other products (12/77 = 100)	137.8	144.5	144.8	146.8	147.7	148.0	148.5	137.3	142.7	143.4	144.1	145.3	144.8	146.7
Automobile parts and equipment (12/77 = 100)	130.3	133.4	133.6	135.7	136.0	136.0	136.4	130.6	135.5	135.2	137.0	138.4	138.9	139.2
Tires	181.7	186.1	185.6	189.3	189.7	189.4	189.7	182.5	189.9	188.4	191.5	194.1	194.6	195.1
Other parts and equipment (12/77 = 100)	127.3	130.2	131.7	132.4	132.8	133.4	134.1	128.9	130.7	132.2	132.9	133.2	134.3	134.1
Other private transportation services	237.9	252.0	254.3	253.6	255.0	259.1	261.5	240.1	255.0	257.7	256.6	257.7	262.2	265.1
Automobile insurance	251.9	257.4	258.8	260.3	262.0	264.6	265.4	251.5	256.9	258.6	260.1	261.8	264.3	265.0
Automobile finance charges (12/77 = 100)	154.4	178.5	180.9	177.3	178.0	184.4	188.7	153.2	177.2	179.9	176.3	176.5	183.1	187.6
Automobile rental, registration, and other fees (12/77 = 100)	115.0	117.8	118.0	119.5	120.1	120.2	120.7	116.7	118.2	118.4	119.5	119.8	120.0	121.1
State registration	146.6	148.0	147.9	147.9	147.9	147.9	149.0	146.6	148.1	147.9	148.0	148.0	148.0	149.0
Drivers' licenses (12/77 = 100)	105.0	105.8	105.9	108.2	109.6	109.9	110.4	104.7	105.6	105.6	105.9	109.5	109.8	110.3
Vehicle inspection (12/77 = 100)	123.2	125.7	128.6	(1)	(1)	(1)	(1)	123.9	126.5	129.3	(1)	(1)	(1)	(1)
Other vehicle-related fees (12/77 = 100)	130.7	136.3	136.6	140.0	140.9	141.2	141.3	140.0	142.6	143.1	145.8	145.9	146.5	148.6
Public	277.0	303.9	323.1	326.5	329.1	330.8	333.2	269.2	293.6	317.7	320.9	324.5	326.6	328.2
Airline fare	321.8	360.7	367.3	371.4	372.5	372.0	374.5	319.8	359.3	365.6	370.0	371.8	372.9	373.1
Intercity bus fare	308.0	337.6	343.5	347.5	351.4	361.3	362.2	308.0	336.8	343.6	347.3	351.7	362.1	362.9
Intracity mass transit	236.1	253.5	290.7	294.0	298.6	301.7	304.4	235.6	251.5	291.0	293.9	299.2	301.3	303.6
Taxi fare	269.2	281.7	287.1	288.1	288.6	289.3	291.3	275.6	289.2	295.7	296.7	297.1	298.1	300.4
Intercity train fare	255.6	304.1	304.6	304.6	305.0	315.0	319.2	255.7	304.6	304.9	305.0	305.2	314.9	318.9
MEDICAL CARE	274.5	291.5	295.6	299.3	301.7	304.8	308.2	276.3	292.9	295.4	298.6	300.9	304.0	307.1
Medical care commodities	173.8	186.3	187.7	189.4	190.8	192.1	193.1	174.1	187.3	189.2	190.6	191.9	192.9	193.8
Prescription drugs	159.6	172.3	173.7	175.4	176.5	178.6	179.6	160.2	173.5	175.0	176.5	178.0	179.4	180.3
Anti-infective drugs (12/77 = 100)	124.6	132.2	133.9	134.8	136.5	136.8	136.3	125.6	134.3	135.8	137.0	139.2	139.6	138.9
Tranquilizers and sedatives (12/77 = 100)	128.9	137.3	138.4	139.6	140.0	141.9	143.6	127.7	136.5	137.6	138.8	139.7	141.3	143.3
Circulatories and diuretics (12/77 = 100)	118.3	125.5	126.5	127.6	127.8	129.5	130.4	119.9	128.8	127.9	128.6	129.0	130.5	131.0
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	140.4	157.2	158.1	160.4	160.6	161.9	163.3	139.6	158.1	158.2	160.3	161.4	162.8	164.1
Pain and symptom control drugs (12/77 = 100)	126.7	137.7	139.1	140.2	141.7	144.1	144.9	128.3	138.9	141.8	142.7	143.8	144.2	145.4
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	121.2	131.1	131.8	133.1	134.1	136.8	137.5	122.3	132.0	132.5	133.9	134.6	136.1	136.8
Nonprescription drugs and medical supplies (12/77 = 100)	125.3	133.5	134.5	135.6	136.7	137.0	137.8	125.5	134.4	135.8	136.7	137.4	137.9	138.5
Eyeglasses (12/77 = 100)	121.2	125.3	125.8	126.3	126.9	127.4	127.8	120.2	124.7	125.0	125.3	126.0	126.0	126.7
Internal and respiratory over-the-counter drugs	195.8	211.5	213.1	215.5	217.8	217.3	218.6	195.8	212.6	215.4	217.5	218.9	219.5	220.2
Nonprescription medical equipment and supplies (12/77 = 100)	121.5	128.6	129.9	130.4	131.4	132.7	133.7	123.0	130.7	132.2	132.3	132.6	133.8	134.7
Medical care services	296.6	314.4	319.2	323.4	326.1	329.7	333.7	298.7	315.8	318.5	322.1	324.7	328.3	332.0
Professional services	260.4	275.8	280.4	282.9	284.3	286.4	288.4	263.8	279.4	280.8	282.7	284.5	286.2	288.2
Physicians' services	278.0	297.5	300.7	302.7	304.9	307.9	311.3	283.8	302.4	304.7	306.7	308.6	310.9	314.1
Dental services	248.0	260.2	266.5	269.9	270.8	271.6	272.3	250.4	264.0	264.6	266.6	268.4	269.5	270.1
Other professional services (12/77 = 100)	128.5	134.2	136.8	137.3	137.7	138.9	139.5	126.7	132.6	132.7	133.6	134.3	134.9	136.2
Other medical care services	340.5	361.1	366.1	372.5	376.5	382.1	388.4	341.6	360.3	364.6	370.6	374.1	380.3	386.2
Hospital and other medical services (12/77 = 100)	141.1	149.6	151.7	154.7	156.6	159.0	161.9	140.5	148.6	150.3	153.1	154.8	157.9	160.6
Hospital room	441.0	470.4	478.0	489.4	494.6	503.0	515.4	439.8	467.1	472.2	482.6	488.5	491.9	509.6
Other hospital and medical care services (12/77 = 100)	140.9	148.7	150.4	152.9	155.0	157.2	159.2	140.2	147.6	149.4	151.8	153.4	156.1	158.3

23. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Nov.	June	July	Aug.	Sept.	Oct.	Nov.	Nov.	June	July	Aug.	Sept.	Oct.	Nov.
ENTERTAINMENT	211.2	220.8	221.1	222.3	224.0	225.5	226.8	208.9	218.3	218.7	219.9	221.5	223.4	224.3
Entertainment commodities	214.5	225.4	225.5	226.5	227.9	228.9	230.3	210.2	220.8	221.1	222.2	224.0	224.2	225.5
Reading materials (12/77 = 100)	127.6	136.2	136.0	136.0	138.1	138.7	139.8	127.1	136.1	135.9	135.9	137.8	138.3	139.3
Newspapers	245.6	264.9	265.0	265.5	266.3	267.1	267.6	244.9	264.8	265.0	265.4	266.2	266.9	267.5
Magazines, periodicals, and books (12/77 = 100)	130.7	137.9	137.3	137.2	141.1	141.9	143.9	130.8	138.2	137.4	137.1	141.2	141.9	143.7
Sporting goods and equipment (12/77 = 100)	122.8	126.8	127.0	127.2	127.3	128.3	130.2	117.0	120.4	120.6	120.8	121.3	121.4	122.8
Sport vehicles (12/77 = 100)	124.0	128.7	129.0	128.6	128.4	129.4	(1)	115.4	118.4	118.5	118.3	118.7	118.6	(1)
Indoor and warm weather sport equipment (12/77 = 100)	114.7	116.9	117.7	118.2	119.1	119.2	119.6	112.2	116.9	117.0	116.7	117.2	117.3	118.2
Bicycles	185.7	191.0	191.0	192.2	193.2	194.4	194.3	185.8	192.0	192.1	193.5	193.9	195.9	196.3
Other sporting goods and equipment (12/77 = 100)	119.9	122.7	122.7	124.1	125.0	126.6	126.7	119.1	122.2	122.9	124.9	125.8	126.2	126.9
Toys, hobbies, and other entertainment (12/77 = 100)	122.8	129.3	129.3	130.5	131.0	131.3	131.3	121.6	128.1	128.5	129.6	130.6	130.5	130.8
Toys, hobbies, and music equipment (12/77 = 100)	120.7	127.9	127.9	129.3	129.4	129.6	129.7	118.4	125.3	125.3	126.6	127.1	126.2	126.7
Photographic supplies and equipment (12/77 = 100)	121.8	126.2	125.7	126.0	126.4	126.0	125.5	122.7	126.5	127.0	127.1	127.7	127.8	127.5
Pet supplies and expenses (12/77 = 100)	127.3	134.2	134.5	136.2	137.2	138.3	138.3	128.8	134.3	135.1	136.6	138.8	139.9	140.1
Entertainment services	208.9	214.7	215.2	216.7	218.9	221.0	222.3	210.5	215.1	215.8	217.0	218.3	223.3	223.4
Fees for participant sports (12/77 = 100)	125.2	131.3	131.6	132.0	134.3	136.4	137.3	126.7	131.4	131.6	132.4	134.0	136.9	139.1
Admissions (12/77 = 100)	122.6	124.9	125.9	128.1	128.0	128.3	128.9	124.3	124.8	125.7	126.9	127.3	128.2	128.3
Other entertainment services (12/77 = 100)	118.7	122.2	121.7	121.7	122.5	123.1	123.4	121.6	123.4	123.2	123.1	122.7	124.2	124.1
OTHER GOODS AND SERVICES	222.8	233.4	234.4	235.6	243.0	245.2	245.9	221.0	231.4	232.4	233.5	239.3	241.4	242.5
Tobacco products	207.3	219.1	219.3	219.9	221.7	225.3	226.2	206.8	218.4	218.4	219.1	220.9	224.5	225.4
Cigarettes	200.6	221.4	221.6	222.2	224.2	228.1	228.9	209.3	220.8	220.7	221.4	223.4	227.2	228.1
Other tobacco products and smoking accessories (12/77 = 100)	124.3	132.3	132.5	132.9	133.1	134.0	134.7	123.9	132.7	133.4	133.9	134.4	134.7	136.0
Personal care	219.0	232.1	233.4	235.1	236.3	236.9	237.7	218.5	229.7	231.2	232.4	233.6	234.1	235.5
Toilet goods and personal care appliances	212.4	228.6	228.7	230.1	231.2	231.6	232.5	212.7	227.2	228.4	229.4	231.1	231.4	233.1
Products for the hair, hairpieces, and wigs (12/77 = 100)	124.5	132.8	133.9	134.1	134.1	134.9	135.4	123.2	130.4	131.7	132.5	133.3	131.8	133.3
Dental and shaving products (12/77 = 100)	127.2	139.4	139.0	140.0	140.0	139.8	140.5	125.9	136.6	137.1	137.6	138.0	138.0	138.3
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	120.8	129.0	127.7	128.9	130.7	131.2	131.8	121.0	128.0	128.3	128.9	130.4	131.6	132.2
Other toilet goods and small personal care appliances (12/77 = 100)	122.2	132.0	133.0	133.9	134.2	133.7	134.3	125.3	135.4	135.9	136.4	137.4	138.2	139.1
Personal care services	225.5	236.0	238.4	240.3	241.5	242.3	243.1	224.4	232.5	234.4	235.7	236.3	237.1	238.1
Beauty parlor services for women	227.5	237.7	240.5	241.9	243.0	243.9	244.8	226.1	232.7	235.1	235.7	236.1	236.7	237.8
Haircuts and other barber shop services for men (12/77 = 100)	125.6	131.9	132.7	134.4	135.3	135.6	135.9	125.2	131.3	131.8	133.3	133.9	134.5	134.9
Personal and educational expenses	251.3	257.8	259.2	260.4	261.5	264.6	264.9	251.4	258.5	260.1	261.7	261.8	264.8	265.6
Schoolbooks and supplies	221.9	230.9	231.3	231.4	252.1	254.5	254.6	225.6	234.7	235.2	235.2	255.9	258.3	258.3
Personal and educational services	258.1	264.2	265.8	267.2	288.5	291.7	292.1	257.8	264.6	266.4	268.4	289.5	291.6	292.5
Tuition and other school fees	132.2	132.9	133.5	134.2	147.4	149.0	149.1	132.4	133.1	133.7	134.7	147.7	149.3	149.4
College tuition (12/77 = 100)	131.5	132.4	133.0	133.2	146.3	148.2	148.3	131.5	132.4	132.9	133.1	146.1	148.1	148.1
Elementary and high school tuition (12/77 = 100)	134.4	134.4	135.3	137.8	151.5	151.6	152.0	134.3	134.4	135.4	138.7	152.1	152.2	152.7
Personal expenses (12/77 = 100)	133.0	146.3	147.9	148.7	150.0	152.3	152.8	131.6	144.8	146.6	147.6	148.5	150.4	152.1
Special indexes:														
Gasoline, motor oil, coolant, and other products	365.5	408.4	407.1	405.9	405.4	404.3	403.9	368.7	409.5	408.0	406.9	406.5	405.4	405.1
Insurance and finance	355.3	393.4	402.7	408.1	417.6	419.0	422.2	355.6	393.1	402.4	407.3	416.4	417.6	420.9
Utilities and public transportation	253.1	278.5	286.5	289.7	293.3	292.7	292.6	251.6	276.7	285.6	288.5	292.4	291.6	291.5
Housekeeping and home maintenance services	306.4	328.6	332.3	334.0	335.7	335.9	339.6	303.5	325.1	322.8	333.0	335.5	337.3	338.9

[1] Not available.

24. Consumer Price Index for All Urban Consumers: Cross classification of region and population size class by expenditure category and commodity and service group

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000-1.250 million)			Size class C (75,000-385,000)			Size class D (75,000 or less)		
	1981			1981			1981			1981		
	June	Aug.	Oct.	June	Aug.	Oct.	June	Aug.	Oct.	June	Aug.	Oct.
	Northeast											
EXPENDITURE CATEGORY												
All items	139.1	142.1	143.8	146.8	150.5	152.3	152.5	155.3	158.2	146.3	147.7	149.2
Food and beverages	137.5	138.4	139.7	139.2	138.9	138.9	141.1	142.3	142.6	136.1	137.6	137.4
Housing	142.1	146.2	147.8	153.2	160.4	161.4	169.0	170.4	170.1	154.0	155.2	158.6
Apparel and upkeep	116.2	117.6	118.9	118.9	118.3	124.8	123.1	123.5	124.8	122.9	125.7	126.5
Transportation	151.5	154.5	158.3	159.1	161.3	164.0	158.4	160.5	162.0	156.6	158.3	159.7
Medical care	134.8	137.6	140.0	134.0	139.2	143.6	137.8	140.8	146.5	137.2	138.9	142.3
Entertainment	127.9	129.3	131.8	129.6	129.1	129.6	125.9	127.8	129.5	130.2	131.7	133.2
Other goods and services	125.9	127.2	134.6	132.1	132.2	138.0	134.1	135.8	141.5	128.8	129.5	137.5
COMMODITY AND SERVICE GROUP												
Commodities	139.0	141.0	142.1	146.5	148.6	149.8	148.1	148.1	149.8	145.0	146.0	146.4
Commodities less food and beverages	139.9	142.0	143.7	150.0	152.7	154.3	151.4	152.3	153.1	149.3	150.0	150.7
Services	139.4	143.5	146.0	147.2	153.6	158.5	159.7	165.4	166.7	148.3	150.5	153.5
	North Central region											
EXPENDITURE CATEGORY												
All items	150.0	152.3	152.6	146.6	148.1	148.8	142.3	145.4	145.9	143.1	145.3	146.7
Food and beverages	138.1	139.4	139.7	137.5	139.2	139.3	139.6	140.8	140.3	140.7	142.4	143.3
Housing	162.9	165.9	164.4	152.6	154.7	153.6	143.5	148.5	147.5	144.0	147.0	148.3
Apparel and upkeep	110.8	112.9	115.5	118.9	120.2	127.2	115.3	116.9	123.4	115.6	121.6	123.1
Transportation	156.4	158.9	161.2	157.3	158.4	159.5	157.0	159.3	161.2	155.9	157.6	158.6
Medical care	139.1	141.3	142.8	139.9	144.5	145.6	140.4	143.9	145.3	144.0	146.9	147.7
Entertainment	130.6	130.9	132.2	124.4	128.4	123.8	129.8	129.8	131.3	126.9	128.1	128.4
Other goods and services	130.1	131.2	136.0	136.0	138.5	142.4	129.3	131.5	135.1	134.3	133.6	140.4
COMMODITY AND SERVICE GROUP												
Commodities	144.4	145.7	145.7	142.5	142.9	142.9	139.9	141.7	141.4	138.0	139.4	140.7
Commodities less food and beverages	147.4	148.7	148.5	144.6	144.5	144.4	140.0	142.1	141.9	136.9	138.1	138.6
Services	158.3	162.1	162.9	153.2	156.4	158.3	146.2	151.6	153.3	151.1	154.8	156.2
	South											
EXPENDITURE CATEGORY												
All items	146.2	148.2	150.9	148.7	151.6	153.4	145.9	148.5	149.2	144.8	147.2	149.4
Food and beverages	138.2	140.2	141.2	139.4	141.7	141.1	138.7	141.6	141.2	141.9	143.9	144.0
Housing	152.3	154.9	158.6	156.4	160.5	162.5	151.9	155.3	154.7	147.5	150.9	153.5
Apparel and upkeep	121.1	121.9	124.4	119.9	120.6	122.6	115.3	115.1	118.3	109.5	108.6	111.8
Transportation	158.1	158.9	160.6	158.3	160.3	162.3	158.6	158.6	160.2	157.7	159.1	160.6
Medical care	135.0	138.3	141.6	138.8	141.6	145.9	142.1	145.6	148.8	148.1	149.9	158.3
Entertainment	124.9	125.3	127.1	130.7	132.2	133.4	132.1	132.1	134.8	133.5	138.6	139.8
Other goods and services	133.1	135.3	138.2	134.1	134.6	139.5	131.5	132.7	138.5	134.1	134.8	139.5
COMMODITY AND SERVICE GROUP												
Commodities	142.1	143.5	145.0	143.2	144.7	145.7	141.3	143.1	143.6	142.1	143.2	144.1
Commodities less food and beverages	143.8	144.9	146.6	144.8	146.0	147.7	142.4	143.8	144.6	142.2	143.0	144.2
Services	152.1	154.9	159.3	157.0	161.9	164.9	153.1	156.9	157.9	149.0	153.1	157.4
	West											
EXPENDITURE CATEGORY												
All items	147.5	152.4	156.3	149.1	151.2	155.0	143.9	146.4	149.2	146.9	147.7	152.1
Food and beverages	138.3	140.3	140.3	142.6	144.6	144.9	137.5	141.2	141.4	143.2	145.2	145.5
Housing	153.2	160.6	167.1	155.1	158.6	162.6	146.7	148.9	153.5	146.1	145.6	153.9
Apparel and upkeep	120.7	121.2	121.8	123.1	124.5	127.6	113.4	114.6	116.5	133.5	134.4	135.9
Transportation	157.4	159.3	161.8	157.5	161.1	163.5	158.7	160.6	162.1	159.3	161.0	162.5
Medical care	141.0	149.2	150.5	141.2	148.1	148.1	141.5	147.0	149.4	146.2	149.9	150.4
Entertainment	127.7	130.2	133.0	128.9	130.1	132.5	130.8	130.8	131.4	143.7	145.4	144.4
Other goods and services	134.8	136.4	140.1	134.7	137.3	141.4	130.2	131.3	136.1	137.8	141.0	145.5
COMMODITY AND SERVICE GROUP												
Commodities	140.5	143.4	145.1	143.4	145.2	147.0	140.2	142.6	144.4	144.7	144.5	146.2
Commodities less food and beverages	141.4	144.7	147.1	143.8	145.5	147.8	141.3	143.2	145.6	145.3	144.2	146.5
Services	156.8	164.3	171.2	156.8	159.4	166.0	149.2	151.7	156.1	150.1	152.5	160.9

25. Consumer Price Index—U.S. city average, and selected areas

[1967 = 100 unless otherwise specified]

Area[1]	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Nov.	June	July	Aug.	Sept.	Oct.	Nov.	Nov.	June	July	Aug.	Sept.	Oct.	Nov.
U.S. city average[2]	256.2	271.3	274.4	276.5	279.3	279.9	280.7	256.4	271.4	274.6	276.5	279.1	279.7	280.4
Anchorage, Alaska (10/67 = 100)	236.5	...	246.1	...	250.5	...	253.7	232.0	...	241.7	...	245.9	...	249.3
Atlanta, Ga.	...	269.2	...	276.1	...	281.5	...	...	272.6	...	278.1	...	283.0	...
Baltimore, Md.	258.4	...	272.5	...	279.9	...	280.7	257.4	...	273.7	...	281.6	...	280.9
Boston, Mass.	248.8	...	266.3	...	272.8	...	274.2	249.2	...	266.5	...	273.6	...	274.3
Buffalo, N.Y.	...	257.2	...	260.3	...	262.5	...	...	256.1	...	259.4	...	261.2	...
Chicago, Ill.-Northwestern Ind.	258.9	269.1	272.7	275.8	276.9	276.1	277.0	258.9	267.9	271.7	274.6	275.8	276.3	277.3
Cincinnati, Ohio-Ky.-Ind.	262.1	...	273.3	...	275.2	...	276.6	263.5	...	276.3	...	277.1	...	279.0
Cleveland, Ohio	...	285.3	...	284.4	...	282.8	...	...	283.8	...	283.0	...	282.3	...
Dallas-Ft. Worth, Tex.	...	286.0	...	288.2	...	292.5	...	...	284.0	...	285.1	...	288.8	...
Denver-Boulder, Colo.	271.9	...	294.2	...	298.9	...	297.8	270.7	...	290.9	...	304.2	...	302.8
Detroit, Mich.	266.4	280.5	283.1	283.5	284.2	281.5	279.6	263.6	275.9	278.9	279.1	280.2	278.2	276.4
Honolulu, Hawaii	...	252.8	...	256.6	...	259.3	...	...	253.8	...	256.6	...	259.1	...
Houston, Tex.	...	282.9	...	294.7	...	300.0	...	...	280.4	...	291.8	...	295.9	...
Kansas City, Mo.-Kansas	...	270.5	...	271.3	...	272.6	...	...	269.1	...	270.2	...	271.3	...
Los Angeles-Long Beach, Anaheim, Calif.	255.5	267.9	272.2	274.8	279.3	281.3	281.8	258.4	271.7	276.3	278.6	282.9	284.9	285.5
Miami, Fla. (11/77 = 100)	133.9	...	146.1	...	150.2	...	153.6	135.6	...	143.7	...	151.0	...	154.7
Milwaukee, Wis.	262.1	...	285.6	...	286.9	...	287.5	267.5	...	291.2	...	292.1	...	291.5
Minneapolis-St. Paul, Minn.-Wis.	...	276.1	...	286.6	...	291.6	...	...	275.6	...	287.0	...	291.6	...
New York, N.Y.-Northeastern N.J.	244.7	258.6	262.5	264.8	266.8	268.0	267.8	244.2	257.9	262.3	264.0	267.8	267.0	266.9
Northeast, Pa. (Scranton)	247.0	...	266.0	...	271.5	...	272.2	249.5	...	269.0	...	275.0	...	275.2
Philadelphia, Pa.-N.J.	249.2	265.4	267.8	270.5	274.4	274.7	274.1	251.1	265.6	268.5	271.6	274.5	275.2	274.5
Pittsburgh, Pa.	...	271.3	...	277.7	...	277.7	...	...	273.0	...	278.1	...	278.4	...
Portland, Oreg.-Wash.	261.9	...	280.8	...	291.1	...	278.7	260.7	...	279.2	...	288.8	...	276.3
St. Louis, Mo.-Ill.	253.8	...	269.4	...	273.4	...	273.8	254.2	...	269.2	...	273.0	...	273.0
San Diego, Calif.	279.1	...	305.4	...	313.9	...	321.3	275.1	...	300.5	...	308.0	...	315.1
San Francisco-Oakland, Calif.	...	274.0	...	287.9	...	297.0	...	...	274.3	...	287.2	...	295.6	...
Seattle-Everett, Wash.	262.6	...	282.3	...	286.6	...	289.2	259.4	...	277.8	...	284.3	...	285.7
Washington, D.C.-Md.-Va.	253.6	...	267.1	...	271.8	...	275.5	255.7	...	271.4	...	275.7	...	279.3

[1] The areas listed include not only the central city but the entire portion of the Standard Metropolitan Statistical Area, as defined for the 1970 Census of Population, except that the Standard Consolidated Area is used for New York and Chicago.

[2] Average of 85 cities.

26. Producer Price Indexes, by stage of processing

[1967=100]

Commodity grouping	Annual average 1980	1980	1981											
		Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.[1]	Sept.	Oct.	Nov.	Dec.
FINISHED GOODS														
Finished goods	247.0	257.2	260.9	263.3	266.0	268.5	269.6	270.5	271.8	r271.5	271.1	274.0	274.5	275.3
Finished consumer goods	248.9	258.9	262.5	265.0	268.2	270.6	271.5	272.3	273.5	r273.0	272.6	274.7	274.9	275.6
Finished consumer foods	238.5	249.3	251.0	251.3	252.6	251.9	252.8	253.8	257.6	r256.3	255.5	253.7	252.7	253.0
Crude	237.2	254.8	257.9	265.6	279.7	279.3	283.1	258.9	262.7	r256.9	253.0	253.3	259.5	273.4
Processed	237.8	246.7	248.4	247.9	248.1	247.4	249.8	251.3	255.0	r254.2	253.7	251.7	250.0	249.1
Nondurable goods less foods	283.9	296.2	302.7	308.4	316.0	320.4	321.0	322.0	322.5	r322.1	323.5	323.8	325.0	325.9
Durable goods	208.2	213.5	214.9	215.1	214.0	216.6	218.1	218.2	218.1	r218.3	215.6	224.3	224.3	225.0
Consumer nondurable goods less food and energy	191.2	197.6	201.9	203.5	204.8	207.3	207.7	208.4	209.5	r210.4	211.0	212.2	213.3	213.4
Capital equipment	239.8	250.9	254.6	256.7	258.1	260.8	262.5	263.8	265.4	r265.8	266.6	271.4	272.9	274.1
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	280.3	291.9	296.1	298.3	302.0	305.8	306.7	307.2	308.5	r310.1	309.6	309.3	309.0	308.6
Materials and components for manufacturing	265.7	275.7	278.6	280.3	281.6	284.1	285.1	285.8	287.9	r288.8	290.2	290.3	289.6	289.7
Materials for food manufacturing	264.4	279.6	280.7	273.2	267.5	263.1	259.0	262.4	260.5	r261.0	254.7	252.7	249.2	247.3
Materials for nondurable manufacturing	259.5	268.5	274.0	276.5	279.4	284.3	287.0	287.7	289.2	r291.0	291.2	290.8	289.7	289.5
Materials for durable manufacturing	301.0	304.3	306.9	305.4	306.9	310.6	311.2	310.7	314.4	r316.0	317.4	317.1	315.1	314.4
Components for manufacturing	231.8	248.3	250.3	253.0	254.2	255.4	256.3	257.3	259.5	r261.8	263.4	264.7	266.3	267.7
Materials and components for construction	268.3	276.6	279.2	280.3	282.7	286.0	288.5	289.6	290.4	r290.7	288.9	289.8	289.9	290.8
Processed fuels and lubricants	503.0	539.4	551.9	569.6	598.3	608.5	608.7	605.7	602.0	r607.8	600.1	595.1	594.2	597.7
Manufacturing industries	425.7	457.9	469.5	482.8	503.9	509.0	510.7	505.4	500.3	r508.3	499.3	495.6	495.4	498.6
Nonmanufacturing industries	570.9	611.4	624.7	646.7	681.6	696.2	695.2	694.3	692.0	r695.6	689.3	683.1	681.5	685.3
Containers	254.5	260.6	264.6	268.2	270.9	274.3	276.4	277.2	278.8	280.3	280.8	281.1	280.7	280.6
Supplies	244.5	255.0	257.8	257.8	258.9	262.4	264.0	264.6	266.0	266.1	266.1	267.1	267.4	268.7
Manufacturing industries	231.9	239.5	242.5	244.8	246.8	250.6	252.3	253.4	255.0	256.0	256.7	258.9	259.5	261.5
Nonmanufacturing industries	251.1	263.0	265.7	264.6	265.2	268.7	270.2	270.5	272.0	r271.6	271.1	271.5	271.7	272.7
Feeds	229.0	251.5	252.0	237.5	231.7	239.2	242.9	235.4	232.8	r229.1	221.7	216.3	212.0	214.7
Other supplies	253.6	262.4	266.6	268.3	270.6	272.9	273.8	276.3	278.7	r279.3	280.6	282.5	283.9	284.4
CRUDE MATERIALS														
Crude materials for further processing	304.6	323.5	328.0	336.5	334.2	336.3	334.4	335.4	337.3	r333.0	327.7	320.3	314.1	311.6
Foodstuffs and feedstuffs	259.2	271.6	270.7	267.1	262.1	263.5	260.6	264.3	267.2	261.8	253.4	245.6	238.3	233.7
Nonfood materials	401.0	433.8	450.1	484.9	488.4	492.1	492.4	487.4	487.2	r485.3	486.8	480.5	476.9	479.1
Nonfood materials except fuel	346.1	373.3	391.0	427.9	430.9	432.5	428.3	418.1	413.1	r413.9	410.7	405.5	398.5	398.4
Manufacturing industries	357.4	386.5	405.1	445.5	448.6	450.2	445.5	434.2	428.7	r429.6	425.8	420.0	412.2	409.9
Construction	237.6	247.4	254.8	257.2	259.2	261.5	261.7	262.6	262.6	r263.1	265.7	266.7	266.7	267.1
Crude fuel	615.0	670.2	677.4	687.7	703.6	716.6	738.4	759.2	781.2	r786.7	790.6	779.7	792.6	814.7
Manufacturing industries	690.5	762.9	771.9	798.1	805.8	821.9	850.6	877.2	902.6	r883.0	913.8	899.1	915.8	944.5
Nonmanufacturing industries	567.0	608.9	614.9	630.6	635.0	645.8	662.2	678.5	698.1	r687.8	706.3	698.4	708.4	725.3
SPECIAL GROUPINGS														
Finished goods excluding foods	247.8	258.2	262.4	265.5	268.7	272.1	273.3	274.1	274.7	r274.6	274.4	278.7	279.7	280.6
Finished consumer goods excluding foods	250.8	260.9	265.1	268.5	272.5	276.1	277.0	277.7	277.9	r277.7	277.4	281.3	282.0	282.8
Finished consumer goods less energy	218.0	226.0	233.8	229.6	230.2	231.8	232.8	233.4	235.0	r235.0	234.2	236.8	237.0	237.3
Intermediate materials less foods and feeds	282.3	293.5	298.0	301.0	305.4	309.5	310.7	311.2	312.7	r314.5	314.5	314.5	314.3	315.1
Intermediate materials less energy	265.3	274.9	278.3	279.1	280.5	283.7	284.7	285.5	287.2	r288.5	288.7	288.9	288.6	289.0
Intermediate foods and feeds	252.6	270.0	270.9	261.3	255.6	254.9	253.1	253.2	251.1	r250.2	243.7	240.6	236.0	236.4
Crude materials less agricultural products	446.4	482.8	504.0	547.6	551.8	556.0	557.5	551.3	550.6	r549.1	552.4	544.3	540.9	544.1
Crude materials less energy	256.1	267.5	266.0	262.6	259.6	261.1	257.9	258.7	261.8	r258.0	250.5	243.6	235.9	231.6

[1] Data for August 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

r = revised.

27. Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1980	1980	1981											
			Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.[1]	Sept.	Oct.	Nov.	Dec.
	All commodities	268.8	280.8	[c]284.8	287.6	290.3	293.4	294.1	294.8	296.2	[r]296.4	295.5	296.0	295.5	295.9
	All commodities (1957-59 = 100)	285.2	297.9	302.2	305.1	308.0	311.3	312.0	312.8	314.3	[r]314.5	313.5	314.1	313.5	313.9
	Farm products and processed foods and feeds	244.7	257.0	257.9	255.1	253.5	253.8	252.9	254.3	256.8	[r]254.2	250.0	246.1	242.7	241.2
	Industrial commodities	274.8	286.6	291.5	295.7	299.6	303.5	304.7	305.1	306.2	[r]307.2	307.2	308.8	309.1	310.1
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	249.4	265.3	264.5	262.4	260.7	263.3	259.6	260.7	263.3	[r]257.9	251.0	243.3	237.4	234.5
01-1	Fresh and dried fruits and vegetables	238.6	245.1	258.7	271.5	292.8	286.1	275.3	263.3	266.6	[r]258.1	251.9	247.9	253.2	279.8
01-2	Grains	239.0	265.2	277.7	267.5	261.8	264.7	257.7	257.1	257.4	242.7	227.0	227.6	226.5	213.6
01-3	Livestock	252.7	251.4	244.3	244.6	239.3	246.6	251.8	263.0	266.5	262.0	257.3	244.4	231.1	225.0
01-4	Live poultry	202.1	218.9	213.1	220.8	213.5	195.4	207.2	210.0	215.3	210.3	196.7	195.7	175.0	171.4
01-5	Plant and animal fibers	271.1	294.1	284.1	288.4	270.1	274.2	258.3	259.6	251.3	232.5	206.5	211.7	198.5	188.4
01-6	Fluid milk	271.2	290.5	288.4	289.5	289.5	287.2	283.6	285.0	284.3	285.0	287.3	294.3	298.2	296.7
01-7	Eggs	171.0	217.5	195.7	184.8	180.4	196.2	165.0	174.6	185.1	180.7	193.2	193.8	209.7	195.5
01-8	Hay, hayseeds, and oilseeds	247.1	310.2	311.8	295.0	289.5	296.3	299.0	285.3	290.0	284.3	267.2	230.4	221.1	218.8
01-9	Other farm products	299.0	296.0	296.1	295.1	285.9	295.9	259.7	242.7	250.2	263.9	268.9	267.8	275.8	280.2
02	Processed foods and feeds	241.2	251.5	253.3	250.2	248.5	247.6	248.2	249.9	252.2	[r]251.2	248.4	246.6	244.7	244.0
02-1	Cereal and bakery products	236.0	248.7	251.5	252.1	252.2	253.9	256.3	256.4	258.3	[r]257.7	258.0	256.6	257.5	255.9
02-2	Meats, poultry, and fish	243.1	248.1	248.1	243.6	242.0	239.1	245.2	248.6	257.1	[r]254.4	253.3	246.6	240.0	236.3
02-3	Dairy products	230.6	242.3	244.7	245.0	245.1	245.4	244.6	245.2	245.1	[r]245.3	246.0	247.4	246.9	247.2
02-4	Processed fruits and vegetables	228.7	236.6	238.4	243.7	255.2	258.0	259.4	262.5	265.9	[r]267.3	270.3	271.3	270.1	271.4
02-5	Sugar and confectionery	322.5	338.8	344.6	323.7	302.0	284.5	262.8	274.8	266.0	[r]267.3	246.8	250.0	249.0	250.9
02-6	Beverages and beverage materials	233.0	240.5	243.0	244.8	245.4	246.0	247.6	248.1	249.0	[r]249.4	245.6	248.3	250.8	251.5
02-7	Fats and oils	226.8	234.1	230.2	228.2	229.8	232.4	228.2	227.3	234.8	[r]229.5	224.6	223.6	221.7	219.3
02-8	Miscellaneous processed foods	227.2	240.5	244.2	248.0	249.2	249.9	251.1	251.5	252.2	[r]252.1	253.0	249.8	250.1	250.1
02-9	Prepared animal feeds	226.8	247.1	248.9	235.9	231.1	237.7	241.0	234.3	232.2	[r]228.9	223.2	218.4	214.6	217.2
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	183.5	190.4	193.1	193.9	195.2	197.6	199.2	200.1	201.3	[r]202.4	202.5	203.0	203.2	203.1
03-1	Synthetic fibers (12/75 = 100)	134.7	140.8	146.5	147.1	148.9	151.5	156.4	157.9	159.7	[r]161.2	162.3	163.5	162.5	162.4
03-2	Processed yarns and threads (12/75 = 100)	122.5	128.2	129.8	130.3	134.6	135.0	138.6	139.3	140.3	[r]142.0	141.8	142.0	140.3	139.8
03-3	Gray fabrics (12/75 = 100)	138.1	144.0	143.6	144.0	144.7	146.6	145.8	147.4	148.2	[r]149.0	148.1	147.8	147.9	147.7
03-4	Finished fabrics (12/75 = 100)	115.7	120.1	122.2	122.9	123.2	124.9	125.7	125.6	126.0	[r]126.8	126.2	126.1	126.5	125.8
03-81	Apparel	172.4	177.5	179.9	180.7	181.4	184.3	185.2	186.2	187.2	[r]187.8	187.2	187.9	188.7	189.1
03-82	Textile housefurnishings	206.9	214.3	219.8	221.3	221.3	222.1	224.0	223.9	227.1	[r]228.8	236.6	237.4	237.9	238.1
04	Hides, skins, leather, and related products	248.9	256.9	258.2	257.7	261.2	263.5	263.7	261.6	261.1	[r]261.3	263.0	262.7	261.7	262.7
04-2	Leather	310.6	332.4	332.6	310.0	322.5	337.8	330.0	321.0	319.0	[r]313.7	311.7	312.1	311.3	311.9
04-3	Footwear	233.1	236.9	238.4	240.7	240.4	241.1	241.4	241.5	242.4	[r]242.5	242.0	241.6	241.1	241.7
04-4	Other leather and related products	218.3	225.3	230.1	236.9	238.4	238.5	244.2	244.3	242.9	[r]245.1	250.1	250.1	250.5	250.5
05	Fuels and related products and power	574.0	615.7	634.6	667.5	696.5	707.2	709.0	707.6	704.9	[r]704.3	703.2	697.2	697.5	702.7
05-1	Coal	467.3	475.3	477.8	480.8	481.1	486.1	487.3	491.7	505.5	[r]507.0	510.6	511.1	513.1	515.6
05-2	Coke	430.6	430.1	430.1	430.1	430.1	430.1	467.9	469.7	469.7	[r]469.7	470.3	470.3	470.3	470.3
05-3	Gas fuels[3]	780.7	844.3	857.1	881.6	889.9	907.8	933.9	954.6	969.4	[r]949.3	979.7	964.7	981.4	1007.7
05-4	Electric power	321.6	337.6	341.4	346.2	351.2	355.5	360.4	366.6	374.6	[r]385.8	382.0	375.9	377.6	383.8
05-61	Crude petroleum[4]	556.4	632.8	704.4	842.7	842.8	842.5	839.9	815.9	798.9	[r]796.8	797.0	788.4	786.0	787.4
05-7	Petroleum products, refined[5]	674.7	717.0	736.9	769.6	825.5	840.9	835.3	828.1	816.3	813.4	805.7	802.0	797.9	798.3
06	Chemicals and allied products	260.3	268.1	274.3	277.6	280.4	286.0	288.6	290.5	291.3	[r]293.3	293.3	292.8	292.5	292.7
06-1	Industrial chemicals[6]	324.0	334.6	344.5	352.1	354.5	362.4	368.5	369.7	370.4	[r]371.5	372.0	369.4	365.6	364.6
06-21	Prepared paint	235.3	241.4	242.9	246.6	246.6	248.1	250.0	250.0	250.7	[r]250.7	251.0	251.0	254.8	256.7
06-22	Paint materials	273.9	281.0	284.0	287.0	290.5	295.4	300.3	300.8	304.5	[r]308.5	307.8	308.0	307.4	307.9
06-3	Drugs and pharmaceuticals	174.5	182.6	184.7	187.3	189.3	191.0	192.4	193.2	195.5	[r]195.0	197.1	198.1	198.1	198.7
06-4	Fats and oils, inedible	298.0	317.1	310.7	290.7	295.7	312.7	312.1	303.1	290.9	305.6	285.6	277.7	282.5	280.4
06-5	Agricultural chemicals and chemical products	257.1	263.3	267.6	271.6	275.8	277.8	279.1	288.9	288.9	[r]293.4	292.3	292.3	295.4	294.5
06-6	Plastic resins and materials	279.2	274.1	[c]274.7	276.1	279.4	285.1	287.9	290.0	295.9	[r]297.5	298.5	297.6	290.9	287.0
06-7	Other chemicals and allied products	224.5	234.1	244.4	245.1	248.3	255.3	254.8	256.3	254.8	[r]257.3	257.0	258.0	260.9	260.2
07	Rubber and plastic products	217.4	223.3	224.8	226.4	228.4	230.8	231.8	233.4	232.1	[r]234.1	236.0	237.7	238.7	239.0
07-1	Rubber and rubber products	237.5	244.9	246.2	248.5	252.1	253.0	254.4	256.8	254.7	[r]256.9	261.3	264.3	266.2	266.4
07-11	Crude rubber	264.3	268.5	279.1	281.9	281.2	279.8	283.2	285.2	284.2	[r]284.7	280.6	280.5	278.9	280.7
07-12	Tires and tubes	236.9	245.2	240.9	243.5	246.6	250.7	251.2	251.2	246.8	[r]249.9	256.5	257.7	257.5	255.9
07-13	Miscellaneous rubber products	226.6	234.0	238.6	240.4	243.5	243.8	245.7	250.9	251.4	[r]253.1	257.1	263.4	269.5	271.4
07-2	Plastic products (6/78 = 100)	121.1	123.9	125.0	125.5	126.0	128.2	128.6	129.1	128.7	[r]129.8	129.6	130.0	130.1	130.3
08	Lumber and wood products	288.9	299.4	296.5	294.7	294.4	299.4	298.4	298.1	296.5	[r]294.5	289.1	284.4	283.0	285.2
08-1	Lumber	325.8	333.0	331.3	326.9	326.2	333.6	336.3	335.8	332.4	[r]329.9	319.7	312.0	306.8	309.7
08-2	Millwork	260.4	273.3	273.6	273.8	275.7	276.5	274.8	272.2	273.6	[r]272.3	271.3	271.2	272.0	273.6
08-3	Plywood	246.5	263.5	251.1	251.2	248.8	256.0	248.3	251.5	247.8	[r]245.6	241.2	234.4	233.0	239.2
08-4	Other wood products	239.1	236.2	238.5	238.1	236.9	238.3	238.2	239.8	240.7	[r]239.8	240.6	240.0	239.7	239.5

See footnotes at end of table.

27. Continued—Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1980	1980	1981											
			Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.[1]	Sept	Oct.	Nov.	Dec.
	INDUSTRIAL COMMODITIES — Continued														
09	Pulp, paper, and allied products	249.2	256.7	264.4	267.2	269.0	271.4	272.1	272.9	274.9	r275.9	276.9	279.1	280.2	280.7
09-1	Pulp, paper, and products, excluding building paper and board	250.6	257.9	260.9	264.5	266.8	268.6	269.9	271.2	272.3	r273.7	275.5	276.5	276.3	276.2
09-11	Woodpulp	380.3	390.2	390.2	390.2	390.2	394.1	394.2	394.2	394.2	r394.2	396.6	404.7	417.0	417.0
09-12	Wastepaper	208.7	191.5	191.5	186.1	185.1	184.2	182.7	182.9	182.1	182.1	178.5	165.1	144.5	143.4
09-13	Paper	256.8	269.4	271.7	272.9	273.8	275.2	275.9	278.5	279.7	r282.1	287.1	288.6	287.1	287.5
09-14	Paperboard	234.6	239.6	250.2	252.8	255.1	255.7	258.8	259.2	259.4	r260.6	262.5	262.6	261.6	259.3
09-15	Converted paper and paperboard products	238.5	244.7	246.9	252.1	256.3	257.3	258.8	259.9	261.2	r262.4	263.0	263.9	263.9	263.9
09-2	Building paper and board	206.2	219.7	219.7	225.7	227.9	232.5	237.3	237.4	235.5	r234.2	233.7	232.5	231.5	227.7
10	Metals and metal products	286.4	290.6	294.0	294.0	296.4	298.8	299.1	298.4	302.0	r304.1	305.1	305.5	303.9	303.6
10-1	Iron and steel	305.2	316.4	323.0	323.2	328.2	331.0	330.4	330.1	338.8	r339.9	339.7	341.5	339.8	339.7
10-13	Steel mill products	302.7	313.7	322.6	322.9	328.7	331.6	331.8	332.2	344.9	344.9	345.3	348.7	348.6	348.9
10-2	Nonferrous metals	305.0	293.4	292.1	287.4	286.5	288.4	287.7	284.5	282.8	r287.3	290.0	288.8	281.4	277.5
10-3	Metal containers	298.6	303.3	311.4	313.8	314.1	314.1	314.1	314.1	315.2	r318.7	319.6	319.0	318.2	318.2
10-4	Hardware	240.5	251.7	254.5	258.0	258.6	258.5	259.4	259.7	263.8	r265.3	265.7	267.5	268.9	269.4
10-5	Plumbing fixtures and brass fittings	246.7	254.9	256.7	259.2	259.5	265.3	266.2	268.9	270.9	r271.2	271.4	272.8	273.0	273.9
10-6	Heating equipment	206.5	214.0	216.6	217.6	219.5	219.8	222.3	223.5	226.4	r227.9	227.9	228.4	227.6	229.2
10-7	Fabricated structural metal products	270.5	279.3	283.1	285.4	289.4	293.1	294.0	295.0	297.9	r299.3	300.5	302.2	302.2	302.7
10-8	Miscellaneous metal products	250.0	257.6	260.5	263.1	264.7	267.2	269.7	269.4	272.0	r272.9	274.5	276.2	277.5	281.4
11	Machinery and equipment	239.8	249.8	253.3	255.3	257.5	259.6	260.7	262.1	264.8	r266.2	267.8	268.8	270.0	271.6
11-1	Agricultural machinery and equipment	259.2	272.9	276.4	278.4	279.8	282.5	285.7	286.8	288.1	r290.3	292.0	292.1	298.7	301.3
11-2	Construction machinery and equipment	289.4	301.4	305.9	310.0	312.8	317.0	318.4	320.1	323.8	r325.0	326.6	329.0	329.6	332.0
11-3	Metalworking machinery and equipment	274.4	285.7	289.7	291.6	294.9	298.7	299.9	301.3	302.9	r303.5	305.3	306.5	307.5	312.2
11-4	General purpose machinery and equipment	264.6	275.6	278.6	280.2	282.3	284.4	285.9	287.0	290.6	r292.3	293.5	294.4	295.6	297.2
11-6	Special industry machinery and equipment	275.8	290.9	295.6	299.2	301.0	303.2	307.2	308.8	311.0	r310.3	312.7	314.7	315.2	316.5
11-7	Electrical machinery and equipment	201.7	208.9	211.9	213.7	216.0	217.4	217.5	219.2	221.1	222.8	224.1	225.0	226.0	226.9
11-9	Miscellaneous machinery	229.9	239.6	243.3	245.2	247.0	248.5	248.8	250.1	254.0	r256.0	257.8	258.3	259.1	259.8
12	Furniture and household durables	187.7	193.1	194.0	195.2	195.8	196.4	197.4	197.3	199.5	r199.6	200.7	201.4	201.6	202.2
12-1	Household furniture	204.8	212.1	212.9	213.8	214.5	216.5	216.4	218.6	220.0	r220.7	223.3	224.1	225.4	227.0
12-2	Commercial furniture	236.0	242.4	246.7	251.6	253.4	254.5	257.7	257.9	258.7	r259.1	261.5	262.5	263.2	264.1
12-3	Floor coverings	163.0	170.7	172.3	171.9	174.1	175.3	179.5	180.7	182.8	r181.9	181.5	181.5	180.8	180.7
12-4	Household appliances	174.2	179.5	182.2	183.5	184.2	185.1	185.5	186.1	188.8	r189.1	188.3	189.5	189.7	190.2
12-5	Home electronic equipment	91.4	91.0	c91.1	91.3	91.4	90.9	90.8	86.7	87.4	r87.6	87.8	88.3	88.0	87.8
12-6	Other household durable goods	278.6	285.7	278.9	280.8	278.1	275.3	276.7	276.4	282.1	r280.9	285.4	285.3	284.6	285.5
13	Nonmetallic mineral products	283.0	291.2	296.6	297.9	300.9	310.8	312.0	313.6	314.3	r314.1	313.1	313.1	313.5	313.6
13-11	Flat glass	196.5	203.0	203.9	204.3	204.8	210.2	210.2	210.3	218.3	r218.3	218.8	218.5	218.5	218.5
13-2	Concrete ingredients	274.0	279.7	290.0	291.4	292.6	297.4	297.5	297.5	297.7	r298.0	298.4	298.3	298.3	298.5
13-3	Concrete products	273.9	277.6	c286.2	286.6	288.9	289.9	291.2	293.5	293.4	r293.4	292.9	293.3	293.2	293.5
13-4	Structural clay products excluding refractories	231.5	233.6	239.5	239.8	244.6	246.0	250.1	250.7	250.9	r250.9	254.8	255.6	255.9	257.1
13-5	Refractories	264.6	273.2	282.6	293.5	296.1	296.4	304.0	307.1	307.1	r307.1	308.0	308.8	309.8	309.8
13-6	Asphalt roofing	386.8	384.6	394.8	389.5	390.5	415.9	407.4	426.5	421.9	r420.9	400.0	401.3	408.9	404.2
13-7	Gypsum products	256.3	252.7	259.6	257.3	257.6	256.8	261.1	230.7	259.7	255.3	252.9	252.4	251.3	249.7
13-8	Glass containers	292.7	311.4	311.4	311.4	311.4	326.7	335.3	335.3	335.5	r335.5	334.8	334.8	334.8	334.8
13-9	Other nonmetallic minerals	394.6	418.9	418.7	424.7	441.7	479.1	477.6	476.8	476.2	r475.3	474.2	473.2	473.5	475.4
14	Transportation equipment (12/68 = 100)	207.0	224.3	227.4	229.1	228.1	231.9	233.6	234.3	235.0	r235.9	231.7	244.4	246.2	246.7
14-1	Motor vehicles and equipment	208.8	226.2	c229.0	230.9	229.5	233.9	236.0	236.7	237.4	r238.4	232.6	247.5	248.6	249.2
14-4	Railroad equipment	313.1	323.9	332.5	332.5	333.9	335.7	331.2	331.4	338.1	r338.7	345.0	345.0	347.5	346.3
15	Miscellaneous products	258.8	265.3	264.3	264.9	264.0	266.0	266.9	266.3	263.2	262.6	266.7	268.0	267.2	267.3
15-1	Toys, sporting goods, small arms, ammunition	198.6	205.7	208.4	210.5	211.1	211.3	211.4	211.2	213.2	r212.7	215.1	213.7	213.4	213.8
15-2	Tobacco products	245.7	254.8	254.8	256.1	256.3	268.7	268.7	268.7	268.8	r268.8	274.2	278.0	278.0	277.9
15-3	Notions	217.2	225.0	227.2	247.3	247.3	248.4	267.8	268.0	267.5	267.7	267.8	267.3	269.7	269.7
15-4	Photographic equipment and supplies	202.9	206.6	207.4	209.6	211.2	212.4	212.5	212.5	211.4	r207.1	209.0	209.1	209.1	209.5
15-5	Mobile homes (12/74 = 100)	150.2	153.0	153.0	153.1	155.0	(2)	(2)	(2)	158.1	r158.3	158.1	158.6	158.8	159.0
15-9	Other miscellaneous products	363.4	370.5	363.3	358.1	351.3	349.0	349.4	346.9	333.1	r334.6	343.4	346.7	343.4	343.2

[1] Data for August 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

[3] Prices for natural gas are lagged 1 month.

[4] Includes only domestic production.

[5] Most prices for refined petroleum products are lagged 1 month.

[6] Some prices for industrial chemicals are lagged 1 month.

r = revised.

c = corrected.

28. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1980	1980	1981											
		Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.[1]	Sept.	Oct.	Nov.	Dec.
All commodities — less farm products	269.6	281.2	285.4	288.8	291.9	295.0	296.1	296.7	298.0	[r]298.7	298.3	299.4	299.3	300.0
All foods	244.7	254.3	255.8	253.7	253.4	251.4	250.3	252.2	255.2	253.7	251.7	249.4	247.8	248.0
Processed foods	246.6	255.5	257.0	253.9	252.3	250.3	250.5	253.1	256.0	[r]255.0	252.8	250.6	248.2	246.9
Industrial commodities less fuels	243.5	252.3	255.4	257.2	258.6	261.8	262.9	263.5	265.0	[r]266.1	266.3	266.6	266.9	269.4
Selected textile mill products (Dec. 1975 = 100)	124.3	129.3	131.8	132.5	132.2	134.5	135.7	135.9	136.8	137.2	138.2	138.5	138.6	138.3
Hosiery	123.2	126.4	129.5	130.3	130.5	134.2	134.6	135.7	135.8	135.3	135.5	136.5	136.5	136.7
Underwear and nightwear	185.4	190.6	199.2	200.9	202.0	202.1	202.3	203.5	204.7	[r]204.7	205.0	205.0	206.0	206.6
Chemicals and allied products, including synthetic rubber and synthetic fibers and yarns	250.7	258.2	264.8	268.3	271.0	276.1	279.0	281.2	282.3	[r]284.0	284.4	284.2	283.8	284.0
Pharmaceutical preparations	167.1	174.6	177.1	179.7	182.1	184.0	185.7	186.6	189.0	[r]188.4	190.8	192.7	192.4	193.0
Lumber and wood products, excluding millwork	304.0	314.2	309.2	306.0	304.8	312.3	311.5	312.2	308.7	[r]306.2	297.9	290.3	287.7	290.4
Special metals and metal products	258.5	268.6	271.8	272.7	273.5	276.8	277.9	277.9	280.2	[r]281.9	280.1	286.6	286.4	286.6
Fabricated metal products	258.2	266.3	269.9	272.5	274.7	277.0	278.5	279.0	281.7	[r]283.1	284.2	285.6	286.2	287.9
Copper and copper products	222.0	210.8	207.4	205.0	204.8	207.7	206.6	203.7	202.5	[r]206.2	205.4	203.8	199.3	195.9
Machinery and motive products	230.4	244.1	247.4	249.4	250.2	253.1	254.4	255.6	257.4	[r]258.6	[illegible]	264.0	265.5	266.7
Machinery and equipment, except electrical	263.0	276.7	277.3	279.7	281.9	284.3	285.9	287.3	290.4	[r]291.7	293.4	294.4	295.8	297.8
Agricultural machinery, including tractors	267.3	281.4	285.0	287.3	288.3	289.6	293.7	294.8	295.6	[r]298.2	300.5	300.4	309.1	312.4
Metalworking machinery	299.4	314.1	318.9	320.5	323.5	325.9	327.1	328.3	330.1	[r]331.4	333.7	335.6	338.1	339.8
Numerically controlled machine tools (Dec. 1971 = 100)	225.6	230.6	234.6	235.0	235.7	235.7	237.3	241.4	241.7	[r]241.8	242.1	242.1	242.5	242.3
Total tractors	287.3	301.2	305.8	311.1	311.8	316.8	322.0	322.5	325.5	[r]327.8	330.5	332.9	340.4	340.4
Agricultural machinery and equipment less parts	261.2	274.3	278.0	280.2	281.5	283.2	286.7	287.9	288.6	[r]291.1	293.0	293.1	300.6	303.9
Farm and garden tractors less parts	268.8	282.4	284.4	287.2	287.6	289.3	297.7	298.0	298.0	[r]301.4	305.0	305.0	316.5	316.5
Agricultural machinery excluding tractors less parts	266.5	280.9	285.7	287.7	289.1	290.2	290.8	292.5	293.9	[r]295.8	297.1	297.0	303.3	309.3
Industrial valves	287.8	297.8	300.7	305.5	310.1	314.0	314.3	315.3	317.5	[r]319.8	319.3	319.0	320.0	321.9
Industrial fittings	291.8	298.6	298.6	296.0	298.9	302.7	303.0	303.0	303.0	303.0	304.3	304.1	304.1	304.1
Construction materials	266.4	274.1	276.7	277.2	279.0	283.9	284.2	285.0	285.7	[r]285.5	284.4	284.5	284.1	285.1

[1] Data for August 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

29. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1980	1980	1981											
		Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.[1]	Sept.	Oct.	Nov.	Dec.
Total durable goods	251.5	261.0	262.7	263.8	264.9	267.8	268.6	269.1	270.8	[r]271.9	271.7	274.9	275.2	275.9
Total nondurable goods	282.4	296.3	302.6	306.8	310.9	314.2	314.8	315.7	316.8	[r]316.2	314.6	312.7	311.5	311.6
Total manufactures	261.5	272.0	277.3	279.3	282.3	285.3	286.2	286.9	288.0	[r]288.6	288.1	289.7	289.6	290.0
Durable	250.8	260.4	262.3	263.4	264.4	267.2	268.2	268.9	270.6	[r]271.7	271.6	274.9	275.5	276.3
Nondurable	273.0	284.3	293.5	296.4	301.7	304.9	305.7	306.4	306.9	[r]306.9	305.9	305.4	304.6	304.5
Total raw or slightly processed goods	306.7	326.2	322.9	330.3	331.2	334.6	334.2	335.4	337.9	[r]335.8	332.7	326.2	323.2	323.8
Durable	278.2	284.0	275.9	275.5	281.7	286.0	280.4	272.4	271.2	[r]275.9	271.1	264.3	253.8	248.4
Nondurable	306.7	328.2	325.5	333.3	333.8	337.1	337.1	338.9	341.8	[r]339.1	336.2	329.7	327.3	328.3

[1] Data for August 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

30. Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1980	1980	1981											
			Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.[1]	Sept.	Oct.	Nov.	Dec.
	MINING														
1011	Iron ores (12/75 = 100)	152.9	155.8	155.8	168.1	168.1	168.1	168.1	168.1	168.1	168.1	168.1	168.1	168.1	171.3
1092	Mercury ores (12/75 = 100)	331.2	325.0	297.9	324.5	335.4	354.1	347.9	352.0	358.3	365.4	364.5	354.1	354.1	343.7
1211	Bituminous coal and lignite	466.7	473.9	476.1	476.1	478.5	483.5	484.5	488.4	502.1	[r]503.4	506.3	506.6	508.2	510.7
1311	Crude petroleum and natural gas	643.8	731.7	786.5	897.9	901.7	908.6	919.7	713.7	911.5	[r]900.3	914.6	901.0	907.4	922.6
1442	Construction sand and gravel	252.7	264.3	270.1	272.3	275.2	278.0	278.4	278.4	278.4	[r]278.2	279.4	279.6	279.6	280.4
1455	Kaolin and ball clay (6/76 = 100)	136.0	133.7	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	143.4	143.4	143.4
	MANUFACTURING														
2011	Meatpacking plants	244.0	249.0	244.7	237.2	236.1	237.8	243.6	245.9	252.6	[r]250.9	252.9	244.3	236.9	234.5
2013	Sausages and other prepared meats	220.1	247.4	235.3	232.9	230.4	227.5	230.4	238.1	246.0	[r]254.0	253.7	252.0	248.6	245.7
2016	Poultry dressing plants	191.9	201.8	201.9	208.3	203.9	186.7	196.2	196.3	203.6	201.2	188.8	175.5	172.8	166.7
2021	Creamery butter	258.5	274.8	273.6	273.5	273.6	273.4	273.4	273.5	273.8	273.7	275.0	279.2	279.5	275.0

See footnotes at end of table.

30. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1980	1980	1981											
			Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.[1]	Sept.	Oct.	Nov.	Dec.
	MANUFACTURING — Continued														
2022	Cheese, natural and processed (12/72 = 100)	204.4	216.1	215.9	215.6	215.7	216.2	216.2	216.1	213.8	r214.5	217.0	215.6	215.9	217.1
2024	Ice cream and frozen desserts (12/72 = 100)	193.3	207.5	210.1	210.6	210.6	211.4	212.4	212.4	212.7	212.7	212.7	212.5	212.5	212.8
2033	Canned fruits and vegetables	221.4	232.0	233.3	237.4	241.5	244.0	245.9	248.9	251.6	r252.9	255.6	258.1	255.6	258.8
2034	Dehydrated food products (12/73 = 100)	160.2	170.4	174.1	171.3	172.9	174.2	175.3	175.0	180.5	178.7	183.4	182.3	181.6	182.1
2041	Flour mills (12/71 = 100)	189.1	199.5	203.8	198.4	195.1	201.5	199.4	199.3	196.5	181.0	194.8	190.6	181.5	189.3
2044	Rice milling	243.4	287.2	289.6	289.6	298.0	300.9	300.3	300.3	297.4	284.3	268.2	247.3	235.4	215.1
2048	Prepared foods, n.e.c. (12/75 = 100)	124.2	133.9	132.6	129.3	126.6	128.5	129.8	127.5	125.9	r124.8	120.0	117.5	116.4	116.4
2061	Raw cane sugar	414.1	402.9	418.0	367.1	318.8	275.7	224.8	283.3	272.2	254.6	212.3	218.9	224.3	290.8
2063	Beet sugar	358.0	423.3	414.5	398.1	370.7	350.5	334.4	339.7	274.1	r287.5	271.0	272.2	262.1	272.4
2067	Chewing gum	290.7	322.9	323.0	323.0	323.1	323.1	303.1	303.1	303.1	303.2	303.2	303.2	303.2	303.2
2074	Cottonseed oil mills	182.9	228.0	221.2	193.7	204.4	218.4	216.6	212.3	212.0	206.0	182.3	172.0	167.2	182.3
2075	Soybean oil mills	244.3	270.5	272.0	252.5	253.2	259.1	258.1	248.4	253.7	r245.8	234.6	230.1	221.1	221.5
2077	Animal and marine fats and oils	290.2	311.8	310.8	287.2	284.2	301.7	304.3	291.3	288.8	294.1	281.4	274.1	272.3	288.6
2083	Malt	240.9	267.4	286.1	286.1	286.1	286.1	286.1	286.1	286.1	286.1	275.4	275.4	275.4	275.4
2085	Distilled liquor, except brandy (12/75 = 100)	123.0	129.2	129.2	133.9	133.9	133.9	134.3	134.6	134.6	135.5	135.5	135.5	137.9	137.9
2091	Canned and cured seafoods (12/73 = 100)	174.0	183.4	187.3	187.1	187.6	187.7	187.3	187.5	187.4	r188.4	188.8	188.2	188.3	188.5
2092	Fresh or frozen packaged fish	366.9	353.9	374.9	386.7	385.2	383.5	378.2	375.5	367.6	r347.1	356.0	358.4	362.3	371.1
2095	Roasted coffee (12/72 = 100)	269.3	248.5	238.2	238.3	238.3	238.5	238.6	238.6	236.4	r235.7	235.6	236.6	236.4	240.4
2098	Macaroni and spaghetti	233.8	243.6	243.6	243.6	243.6	243.6	246.6	246.6	258.5	258.5	258.5	258.5	258.5	258.5
2111	Cigarettes	254.6	263.6	263.6	264.1	264.2	278.3	278.3	278.3	278.3	278.3	284.2	288.4	288.4	288.4
2121	Cigars	158.6	165.1	165.1	165.3	167.0	168.5	168.5	168.5	169.7	r169.7	171.6	171.6	171.6	171.6
2131	Chewing and smoking tobacco	279.8	298.8	298.7	320.7	320.7	320.8	320.8	320.8	321.0	r321.3	325.2	327.6	327.6	328.0
2211	Weaving mills, cotton (12/72 = 100)	215.8	225.0	227.9	230.9	232.3	235.3	233.5	234.3	234.7	r237.4	235.5	236.1	236.3	235.2
2221	Weaving mills, synthetic (12/77 = 100)	124.8	132.5	131.9	132.3	133.3	134.9	135.7	137.1	138.0	r138.3	138.4	139.1	139.2	139.5
2251	Women's hosiery, except socks (12/75 = 100)	106.3	108.6	109.1	109.2	108.9	114.1	114.2	115.6	115.5	115.0	115.1	115.2	115.2	115.3
2254	Knit underwear mills	190.1	195.0	205.6	208.7	209.7	209.8	210.0	210.0	210.7	r210.8	210.8	210.8	212.7	212.9
2257	Circular knit fabric mills (6/76 = 100)	104.6	107.5	109.3	108.6	109.1	110.8	110.5	110.4	111.0	r112.0	111.0	112.3	112.1	111.7
2261	Finishing plants, cotton (6/76 = 100)	135.1	140.2	142.4	144.5	144.6	146.9	147.0	146.2	146.3	r146.2	145.3	144.9	143.4	141.4
2262	Finishing plants, synthetics, silk (6/76 = 100)	113.6	120.5	121.7	123.1	124.3	125.2	126.6	126.6	127.1	r127.8	129.0	129.0	129.1	128.8
2272	Tufted carpets and rugs	138.1	145.7	148.1	147.8	150.2	151.5	154.5	155.6	158.3	r157.4	157.9	157.9	158.4	158.3
2281	Yarn mills, except wool (12/71 = 100)	203.5	215.1	218.9	218.1	220.7	220.9	224.1	225.8	225.1	r225.4	223.9	222.3	220.1	217.9
2282	Throwing and winding mills (6/76 = 100)	115.5	120.1	123.2	123.2	131.3	131.5	139.1	139.3	142.7	r148.8	148.7	148.0	145.5	148.0
2284	Thread mills (6/76 = 100)	139.1	143.9	144.1	144.3	148.4	150.8	150.9	151.1	151.1	151.1	154.8	157.0	158.9	158.8
2298	Cordage and twine (12/77 = 100)	123.6	129.3	129.3	129.3	130.9	132.7	134.3	134.3	134.3	134.3	138.3	139.3	139.3	140.7
2311	Men's and boys' suits and coats	212.8	216.1	218.2	219.7	220.1	220.3	220.4	224.6	225.9	r229.2	226.1	227.0	227.1	230.7
2321	Men's and boys' shirts and nightwear	204.4	209.5	208.3	207.3	207.1	207.6	207.1	207.5	210.5	r210.6	209.6	210.2	210.4	211.2
2322	Men's and boys' underwear	208.0	212.9	224.9	229.1	231.0	231.0	231.0	230.7	230.8	r230.8	230.7	230.8	232.9	233.0
2323	Men's and boys' neckwear (12/75 = 100)	112.6	115.4	115.4	115.4	115.4	115.4	115.4	115.4	113.9	113.9	113.9	113.9	113.9	113.9
2327	Men's and boys' separate trousers	175.3	180.3	185.3	185.3	185.3	186.0	186.1	186.1	186.4	186.4	186.4	186.6	186.6	186.8
2328	Men's and boys' work clothing	240.5	244.4	242.2	242.2	242.3	247.0	248.2	248.3	250.8	r251.1	251.4	252.4	252.5	252.5
2331	Women's and misses' blouses and waists (6/78 = 100)	110.3	115.4	116.3	116.3	116.4	118.3	118.4	118.5	121.0	r121.2	120.1	123.6	123.8	123.9
2335	Women's and misses' dresses (12/77 = 100)	114.7	116.3	116.5	116.9	118.5	118.4	122.3	122.5	123.0	r124.3	122.5	122.5	123.6	122.5
2341	Women's and children's underwear (12/72 = 100)	154.4	158.1	165.5	167.5	168.8	169.0	169.2	170.5	170.6	r170.6	171.2	171.2	172.2	172.2
2342	Brassieres and allied garments (12/75 = 100)	126.5	129.1	131.7	132.8	134.9	135.0	135.0	136.9	138.8	r138.8	139.2	139.2	139.3	140.5
2361	Children's dresses and blouses (12/77 = 100)	109.9	117.4	118.1	118.9	119.2	120.7	120.5	120.5	121.6	r121.7	120.5	120.9	121.3	118.6
2381	Fabric dress and work gloves	268.6	272.1	284.9	289.1	289.1	289.1	292.1	292.1	289.2	289.2	289.2	289.2	289.2	289.2
2394	Canvas and related products (12/77 = 100)	123.8	126.1	126.8	126.8	127.8	129.3	130.0	130.1	130.1	r133.1	135.2	138.1	138.1	140.3
2396	Automotive and apparel trimmings (12/77 = 100)	122.4	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
2421	Sawmills and planing mills (12/71 = 100)	227.7	233.5	232.3	229.6	228.6	233.3	234.8	234.8	233.5	r231.2	224.9	219.7	217.7	218.3
2436	Softwood veneer and plywood (12/75 = 100)	144.6	158.2	149.8	149.3	147.2	152.6	145.7	148.1	143.8	r138.6	135.7	129.4	128.6	134.1
2439	Structural wood members, n.e.c. (12/75 = 100)	155.6	157.1	157.1	157.0	157.1	158.3	158.2	158.2	157.8	r158.9	158.2	154.6	154.7	153.0
2448	Wood pallets and skids (12/75 = 100)	160.1	154.1	153.8	152.8	152.7	153.1	153.1	153.0	153.1	r152.8	152.7	152.0	150.7	150.2
2451	Mobile homes (12/74 = 100)	150.3	153.1	153.1	153.2	155.0	156.8	155.9	156.1	158.1	r158.3	158.1	158.1	158.0	160.1
2492	Particleboard (12/75 = 100)	161.5	165.9	163.9	170.3	172.3	180.9	184.5	182.3	179.6	r173.6	169.3	166.8	165.7	164.7
2511	Wood household furniture (12/71 = 100)	183.8	190.0	c191.2	192.1	193.3	195.4	196.2	197.5	198.6	r199.2	200.8	201.6	200.9	201.9
2512	Upholstered household furniture (12/71 = 100)	163.6	170.5	c169.8	170.1	170.1	171.8	169.7	173.9	175.1	r175.1	177.7	178.3	182.3	184.9
2515	Mattresses and bedsprings	179.1	186.5	186.3	188.3	189.5	190.5	190.4	190.5	191.3	r194.8	199.4	199.4	201.8	202.2
2521	Wood office furniture	235.2	240.9	244.1	250.4	253.5	254.5	255.4	254.6	254.7	r254.7	258.1	258.1	258.0	258.6
2611	Pulp mills (12/73 = 100)	240.0	246.8	246.9	246.9	246.9	251.2	251.3	251.3	251.3	r251.3	253.5	257.2	265.5	265.5
2621	Paper mills, except building (12/74 = 100)	145.5	150.7	152.0	152.6	153.3	153.9	154.3	155.7	157.0	r157.4	158.6	158.8	158.8	158.8
2631	Paperboard mills (12/74 = 100)	139.0	142.4	148.2	149.2	150.8	151.0	152.1	152.3	151.7	r152.4	153.6	153.7	153.8	152.7
2647	Sanitary paper products	322.0	338.2	338.3	342.5	343.0	343.2	344.3	344.4	344.2	r344.3	345.3	345.3	345.3	345.8
2654	Sanitary food containers	216.0	225.3	232.0	235.2	237.9	239.2	239.2	242.2	246.0	r252.9	254.5	254.8	254.7	254.7
2655	Fiber cans, drums, and similar products (12/75 = 100)	150.6	155.0	157.7	160.6	160.7	160.8	160.9	160.9	163.2	163.2	163.2	167.8	167.8	168.1
2812	Alkalies and chlorine (12/73 = 100)	247.5	262.3	277.9	289.2	295.6	294.4	302.2	309.3	306.2	r310.4	313.1	314.5	317.0	323.9
2821	Plastics materials and resins (6/76 = 100)	143.0	140.9	142.4	143.5	144.8	148.1	149.7	150.7	155.0	r155.6	158.9	155.5	152.3	156.7
2822	Synthetic rubber	255.8	282.5	275.9	280.7	283.9	288.1	293.3	296.3	297.3	r299.4	296.3	289.9	301.1	302.7
2824	Organic fiber, noncellulosic	132.5	138.9	144.0	144.7	147.4	149.0	156.2	156.8	159.2	r160.3	161.6	163.6	162.5	161.9
2873	Nitrogenous fertilizers (12/75 = 100)	124.4	131.8	135.0	138.1	141.7	147.1	148.5	143.4	143.5	r143.9	142.7	143.1	144.4	141.3
2874	Phosphatic fertilizers	237.3	245.4	247.9	248.2	253.5	251.6	251.5	250.9	249.4	r250.0	258.8	259.0	258.9	259.0
2875	Fertilizers, mixing only	246.9	252.2	255.8	266.8	270.0	271.1	273.6	273.1	275.3	r273.0	272.5	271.2	271.6	268.5
2892	Explosives	269.7	282.8	288.8	295.4	303.9	324.8	314.5	312.6	315.7	r319.8	318.4	318.3	316.4	318.0
2911	Petroleum refining (6/76 = 100)	248.6	261.4	268.3	279.5	299.0	306.0	304.1	302.6	299.1	297.5	295.8	294.5	293.2	293.2
2951	Paving mixtures and blocks (12/75 = 100)	171.4	181.5	183.1	185.4	188.1	188.1	198.8	198.4	197.1	r196.3	195.8	196.1	196.4	196.8
2952	Asphalt felts and coatings (12/75 = 100)	173.4	172.5	172.4	170.0	169.7	180.4	176.3	185.7	182.8	r182.3	173.7	174.2	177.6	175.5
3011	Tires and inner tubes (12/73 = 100)	203.1	210.1	207.0	209.3	213.8	215.5	216.2	216.2	213.1	r215.5	220.5	221.3	221.2	221.5

30. Continued—Producer Price Indexes for the output of selected SIC industries

[1967=100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1980	1980	1981											
			Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.[1]	Sept.	Oct.	Nov.	Dec.
3021	Rubber and plastic footwear (12/71 = 100)	177.9	182.3	182.8	183.4	183.6	183.6	184.0	184.1	185.0	r185.4	185.2	185.0	185.0	185.2
3031	Reclaimed rubber (12/73 =100)	184.7	188.7	190.4	190.4	187.6	187.7	187.7	187.7	192.9	r200.3	198.1	198.1	198.1	198.1
3079	Miscellaneous plastic products (6/78 = 100)	121.7	124.5	125.4	125.4	126.3	128.7	129.1	129.6	129.2	r130.2	130.0	130.5	130.5	130.8
3111	Leather tanning and finishing (12/77 = 100)	148.6	156.6	157.0	145.5	151.4	158.6	154.7	150.7	151.3	r148.5	147.6	147.5	146.9	147.3
3143	Men's footwear, except athletic (12/75 = 100)	158.8	162.4	164.8	166.5	167.6	168.7	168.9	169.6	170.7	r171.4	169.8	169.6	170.6	171.5
3144	Women's footwear, except athletic	213.5	217.1	217.8	220.2	218.7	218.7	219.3	218.5	218.9	r217.8	217.8	217.0	214.5	214.6
3171	Women's handbags and purses (12/75 = 100)	137.9	140.9	149.5	149.5	149.7	149.7	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4
3211	Flat glass (12/71 = 100)	161.3	166.3	167.1	167.5	168.1	174.5	174.5	174.6	180.0	r180.0	180.2	180.1	180.1	180.1
3221	Glass containers	292.6	311.4	311.4	311.4	311.4	326.6	335.2	335.2	335.4	r335.4	334.7	334.7	334.7	334.8
3241	Cement, hydraulic	310.8	310.5	324.3	324.3	r324.4	332.4	332.3	331.0	331.6	r331.6	328.9	327.2	327.2	327.2
3251	Brick and structural clay tile	277.3	282.9	286.6	286.1	295.3	296.0	297.4	298.5	298.9	r298.9	300.9	300.8	301.4	301.8
3253	Ceramic wall and floor tile (12/75 = 100)	122.5	120.1	127.1	127.1	127.1	129.6	132.1	132.1	132.1	r132.1	137.7	137.7	137.7	137.8
3255	Clay refractories	273.6	280.7	291.5	305.2	308.1	308.6	311.0	312.2	312.3	r312.3	314.2	315.7	317.0	317.1
3259	Structural clay products, n.e.c.	202.7	205.1	209.5	212.8	213.0	212.7	223.9	223.9	223.9	r223.9	227.9	232.2	232.2	237.0
3261	Vitreous plumbing fixtures	234.8	245.0	244.7	248.9	249.4	252.0	252.5	255.8	258.7	r258.6	258.9	258.9	259.3	260.1
3262	Vitreous china food utensils	317.3	327.4	327.4	327.4	328.0	328.2	336.6	336.6	336.6	336.6	336.8	336.8	344.7	344.7
3263	Fine earthenware food utensils	295.5	297.9	298.6	298.6	307.9	308.2	308.6	308.6	308.6	r308.6	313.3	313.3	314.4	314.4
3269	Pottery products, n.e.c. (12/75 = 100)	152.6	156.5	155.5	155.5	158.5	158.6	160.6	160.7	160.7	r160.7	161.7	161.7	163.6	163.6
3271	Concrete block and brick	257.3	259.4	264.1	265.0	263.2	267.4	271.2	271.2	271.2	274.0	274.2	274.0	274.5	275.3
3273	Ready-mixed concrete	278.9	282.9	294.8	295.4	296.0	298.5	299.4	301.7	300.7	r300.0	298.5	299.7	299.2	299.5
3274	Lime (12/75 = 100)	157.7	161.8	165.7	171.7	172.6	172.4	172.6	173.0	173.1	r173.9	173.9	173.9	173.8	174.0
3275	Gypsum products	256.7	253.1	258.9	257.6	257.9	257.1	261.4	260.9	261.8	258.9	257.0	251.5	252.5	250.6
3291	Abrasive products (12/71 = 100)	212.6	220.6	222.8	221.7	223.1	232.7	233.2	234.1	235.0	r235.1	235.6	237.5	238.6	240.0
3297	Nonclay refractories (12/74 = 100)	161.1	167.6	172.4	177.5	178.9	178.9	186.6	189.7	189.7	r189.7	189.8	189.8	190.2	190.2
3312	Blast furnaces and steel mills	310.5	320.7	328.7	328.9	334.0	336.7	337.3	338.2	350.1	r350.0	350.3	353.1	352.9	353.2
3313	Electrometallurgical products (12/75 = 100)	117.7	117.3	119.9	120.0	120.0	120.8	120.6	120.7	121.2	121.5	121.4	125.4	125.4	125.3
3316	Cold finishing of steel shapes	284.0	293.3	302.8	303.1	306.1	308.2	308.2	309.5	325.0	325.7	326.2	326.4	326.4	326.7
3317	Steel pipes and tubes	290.9	308.4	315.5	316.3	326.1	333.1	334.1	336.3	348.2	r350.6	350.6	362.0	362.3	363.1
3321	Gray iron foundries (12/68 = 100)	282.5	290.7	295.2	296.1	295.6	297.0	298.4	298.4	298.8	r299.9	301.9	304.6	303.9	304.7
3333	Primary zinc	270.5	288.7	300.3	300.0	299.7	311.9	332.7	335.1	335.4	r353.8	351.5	332.0	337.5	327.3
3334	Primary aluminum	297.9	328.0	331.7	332.3	332.2	332.8	334.2	332.5	334.2	r334.4	336.4	335.8	332.5	332.8
3351	Copper rolling and drawing	227.5	222.8	218.7	215.3	211.8	213.1	212.6	210.6	209.4	r212.9	213.7	212.9	209.4	208.6
3353	Aluminum sheet, plate, and foil (12/75 = 100)	158.2	165.1	169.3	170.7	172.1	173.8	174.4	176.1	177.3	r177.4	178.7	180.7	179.9	180.9
3354	Aluminum extruded products (12/75 = 100)	167.7	176.4	176.8	177.1	177.3	180.6	180.7	180.8	181.2	181.3	181.2	181.3	181.4	181.1
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	148.2	151.1	155.3	157.1	157.2	157.3	157.4	157.3	157.2	r157.2	158.1	163.3	166.2	166.1
3411	Metal cans	291.6	297.3	302.1	303.0	304.7	304.7	304.7	304.7	305.5	r306.7	307.4	307.2	308.6	308.6
3425	Hand saws and saw blades (12/72 = 100)	182.1	190.5	195.4	198.3	198.0	198.1	200.2	200.2	204.1	r204.2	204.2	204.5	204.6	205.6
3431	Metal sanitary ware	248.3	253.8	256.0	256.4	258.5	262.8	264.8	265.2	269.2	r269.7	267.5	267.7	270.6	272.0
3465	Automotive stampings (12/75 = 100)	136.9	141.2	143.0	143.9	144.2	145.0	145.0	145.2	146.2	r146.4	147.2	147.7	148.7	153.7
3482	Small arms ammunition (12/75 = 100)	145.6	160.9	157.9	157.8	157.2	157.8	157.8	157.8	157.8	r159.9	165.3	165.3	165.3	165.3
3493	Steel springs, except wire	230.3	234.3	238.4	238.2	238.5	241.2	241.7	241.9	243.7	r248.9	249.5	249.6	253.8	254.3
3494	Valves and pipe fittings (12/71 = 100)	230.0	238.3	240.2	242.1	244.8	247.6	247.9	248.5	250.0	r251.0	251.2	251.4	251.9	253.8
3498	Fabricated pipe and fittings	315.5	329.9	335.7	335.7	338.5	358.8	359.9	361.6	364.6	r370.0	374.7	379.1	378.8	379.4
3519	Internal combustion engines, n.e.c.	275.4	289.9	298.2	299.4	302.6	308.0	308.2	307.2	312.0	r314.2	320.9	321.6	322.4	321.5
3531	Construction machinery (12/76 = 100)	141.1	147.5	150.0	151.4	152.6	154.4	155.3	156.9	158.0	158.5	160.0	161.5	161.6	162.1
3532	Mining machinery (12/72 = 100)	258.5	270.0	272.5	273.5	276.2	279.5	280.0	280.8	282.7	r285.3	286.0	288.7	290.3	291.8
3533	Oilfield machinery and equipment	338.1	360.9	367.0	374.2	378.2	382.2	384.6	390.3	401.3	r406.5	408.7	413.3	418.3	420.1
3534	Elevators and moving stairways	239.3	249.5	250.3	250.3	250.3	251.2	251.2	251.2	252.1	r252.8	254.6	257.1	259.9	261.4
3542	Machine tools, metal forming types (12/71 = 100)	279.5	292.0	297.5	298.0	301.9	303.0	304.5	305.7	307.6	r309.5	312.0	312.3	312.3	313.0
3546	Power driven hand tools (12/76 = 100)	132.2	137.9	142.6	144.9	145.2	146.4	147.0	147.1	148.2	r148.4	148.6	148.8	148.7	149.3
3552	Textile machinery (12/69 = 100)	216.6	226.0	235.7	235.0	240.0	240.4	241.2	244.4	245.2	r245.4	247.0	248.1	247.9	250.0
3553	Woodworking machinery (12/72 = 100)	212.5	221.5	222.5	223.1	224.7	225.5	219.1	219.7	224.0	r225.4	225.3	226.9	229.0	229.0
3576	Scales and balances, excluding laboratory	215.0	217.9	220.5	221.1	224.2	230.2	230.2	230.3	226.6	r226.6	226.1	226.1	226.1	229.4
3592	Carburetors, pistons, rings, valves (6/76 = 100)	156.6	167.6	168.9	170.9	171.5	172.0	172.0	176.5	180.8	r181.3	181.9	185.2	187.0	187.1
3612	Transformers	184.9	193.3	194.9	197.1	204.3	206.0	207.8	208.6	210.7	r212.8	215.9	216.2	221.5	219.8
3623	Welding apparatus, electric (12/72 = 100)	208.9	215.8	218.9	220.9	222.1	224.3	225.9	227.2	228.3	r229.6	230.8	231.8	232.4	234.7
3631	Household cooking equipment (12/75 = 100)	133.1	137.5	140.1	141.0	141.1	140.5	140.7	141.0	140.5	r141.5	141.2	141.6	142.0	142.8
3632	Household refrigerators, freezers (6/76 = 100)	121.4	125.1	127.5	127.5	127.6	129.4	129.5	130.8	135.5	r135.5	135.0	136.4	136.4	136.4
3633	Household laundry equipment (12/73 = 100)	162.0	167.4	169.8	170.2	170.9	173.5	173.9	173.6	174.1	r174.6	176.0	176.8	178.5	178.8
3635	Household vacuum cleaners	154.4	159.1	159.1	158.3	158.5	158.4	158.5	158.6	158.6	r158.8	152.2	154.5	154.2	154.0
3636	Sewing machines (12/75 = 100)	129.1	130.3	130.3	130.3	131.9	131.8	153.8	153.8	153.8	r153.8	153.1	155.4	155.4	155.4
3641	Electric lamps	260.3	268.2	265.8	271.2	272.6	275.5	275.1	276.5	275.2	r280.0	283.2	285.9	286.6	282.7
3644	Noncurrent-carrying wiring devices (12/72 = 100)	219.7	229.2	233.1	236.3	240.6	242.6	242.8	251.5	253.3	r253.8	261.0	261.2	264.6	264.6
3646	Commercial lighting fixtures (12/75 = 100)	139.3	144.7	145.1	148.0	151.4	156.1	156.2	156.2	154.4	r155.5	157.2	158.8	157.3	158.4
3648	Lighting equipment, n.e.c. (12/75 = 100)	139.9	145.0	146.3	148.8	152.7	153.2	153.3	153.7	153.8	161.3	161.5	161.4	162.0	162.7
3671	Electron tubes receiving type	251.8	272.7	284.3	284.4	285.0	285.0	285.1	312.5	327.4	327.5	327.5	327.6	327.8	342.3
3674	Semiconductors and related devices	90.7	91.6	91.1	90.8	91.3	91.2	90.6	90.3	89.2	r89.2	89.5	89.2	91.0	91.9
3675	Electronic capacitors (12/75 = 100)	162.7	170.3	170.3	171.1	173.2	168.7	168.5	171.2	171.4	r178.8	169.9	172.4	169.2	168.0
3676	Electronic resistors (12/75 = 100)	134.2	137.8	138.0	139.9	139.9	140.0	140.8	141.2	142.1	r142.5	142.6	142.8	142.8	142.5
3678	Electronic connectors (12/75 = 100)	148.1	149.7	152.2	153.5	154.5	154.4	153.7	154.3	155.0	r155.8	156.3	156.3	155.8	156.6
3692	Primary batteries, dry and wet	176.5	176.9	179.0	183.3	184.2	182.6	181.0	181.0	181.6	182.7	183.4	182.7	182.7	182.7
3711	Motor vehicles and car bodies (12/75 = 100)	138.7	144.0	145.3	145.7	144.2	148.4	149.6	150.3	150.3	r150.1	143.2	158.3	158.5	158.9
3942	Dolls (12/75 = 100)	127.4	128.3	130.7	132.3	132.4	132.4	130.9	130.9	130.9	r130.9	130.6	130.6	130.6	130.6
3944	Games, toys, and children's vehicles	205.2	207.1	213.9	220.2	221.2	221.2	221.8	221.9	222.0	r222.0	220.1	220.1	220.5	221.5
3955	Carbon paper and inked ribbons (12/75 = 100)	132.8	136.0	133.0	136.4	136.4	136.9	136.9	140.4	140.4	140.6	140.6	140.6	140.6	140.7
3995	Burial caskets (6/76 = 100)	131.2	135.0	135.0	135.0	138.0	138.1	138.3	138.3	138.3	140.8	143.4	143.4	143.4	142.7
3996	Hard surface floor coverings (12/75 = 100)	143.7	148.6	148.6	148.6	148.7	151.5	151.5	151.5	153.3	153.6	153.7	153.7	153.7	153.7

[1] Data for August 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.
c = corrected.

PRODUCTIVITY DATA

PRODUCTIVITY DATA are compiled by the Bureau of Labor Statistics from establishment data and from estimates of compensation and output supplied by the U.S. Department of Commerce and the Federal Reserve Board.

Definitions

Output is the constant dollar gross domestic product produced in a given period. Indexes of **output per hour of labor input**, or labor productivity, measure the value of goods and services produced per hour of labor. **Compensation per hour** includes wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. The data also include an estimate of wages, salaries, and supplementary payments for the self-employed, except for nonfinancial corporations, in which there are no self-employed. **Real compensation per hour** is compensation per hour adjusted by the Consumer Price Index for All Urban Consumers.

Unit labor cost measures the labor compensation cost required to produce one unit of output and is derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from the current dollar gross domestic product and dividing by output. In these tables, **unit nonlabor costs** contain all the components of unit nonlabor payments except unit profits. **Unit profits** include corporate profits and inventory valuation adjustments per unit of output.

The **implicit price deflator** is derived by dividing the current dollar estimate of gross product by the constant dollar estimate, making the deflator, in effect, a price index for gross product of the sector reported.

The use of the term "man hours" to identify the labor component of productivity and costs, in tables 31 through 34, has been discontinued. **Hours of all persons** is now used to describe the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all-employee hour** is now used to describe labor productivity in nonfinancial corporations where there are no self-employed.

Notes on the data

In the private business sector and the nonfarm business sector, the basis for the output measure employed in the computation of output per hour is Gross Domestic Product rather than Gross National Product. Computation of hours includes estimates of nonfarm and farm proprietor hours.

Output data are supplied by the Bureau of Economic Analysis, U.S. Department of Commerce, and the Federal Reserve Board. Quarterly manufacturing output indexes are adjusted by the Bureau of Labor Statistics to annual estimates of output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are from the Bureau of Economic Analysis and the Bureau of Labor Statistics.

Beginning with the September 1976 issue of the *Review*, tables 31–34 were revised to reflect changeover to the new series—private business sector and nonfarm business sector—which differ from the previously published total private economy and nonfarm sector in that output imputed for owner-occupied dwellings and the household and institutions sectors, as well as the statistical discrepancy, are omitted. For a detailed explanation, see J. R. Norsworthy and L. J. Fulco, "New sector definitions for productivity series," *Monthly Labor Review*, October 1976, pages 40–42.

31. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950–80

[1977=100]

Item	1950	1955	1960	1965	1970	1973	1974	1975	1976	1977	1978	1979	1980
Private business sector:													
Output per hour of all persons	50.3	58.2	65.1	78.2	86.1	94.8	92.7	94.8	97.9	100.0	99.8	99.5	98.3
Compensation per hour	20.0	26.3	33.9	41.7	58.2	71.3	78.0	85.5	92.9	100.0	108.4	119.3	131.5
Real compensation per hour	50.4	59.6	68.4	80.0	90.8	97.3	95.9	96.3	98.8	100.0	100.7	99.6	96.7
Unit labor cost	39.8	45.2	52.1	53.3	67.6	75.2	84.2	90.2	94.8	100.0	108.6	119.9	132.4
Unit nonlabor payments	43.5	47.8	50.8	57.8	63.4	75.8	78.9	90.7	94.4	100.0	105.1	110.9	116.3
Implicit price deflator	41.0	46.1	51.7	54.8	66.2	75.3	82.4	90.4	94.7	100.0	107.4	116.9	127.6
Nonfarm business sector:													
Output per hour of all persons	56.2	62.7	68.2	80.4	86.7	95.3	93.1	95.0	98.1	100.0	99.8	99.1	98.8
Compensation per hour	21.8	29.3	35.6	42.8	58.8	71.7	78.4	86.0	93.0	100.0	108.5	119.0	130.8
Real compensation per hour	55.0	63.9	73.0	82.2	91.5	97.7	95.4	96.8	99.0	100.0	100.7	99.3	96.2
Unit labor cost	38.8	45.1	52.3	53.2	67.6	75.2	84.3	90.5	94.8	100.0	108.7	120.0	132.4
Unit nonlabor payments	42.8	47.9	50.5	58.2	64.0	71.9	78.1	88.9	94.0	100.0	103.6	108.5	117.6
Implicit price deflator	40.2	46.0	51.7	54.9	66.4	74.1	81.6	89.9	94.5	100.0	107.0	116.2	127.4
Nonfinancial corporations:													
Output per hour of all employees	(1)	(1)	66.3	79.9	85.4	94.5	91.3	94.4	97.4	100.0	100.4	100.4	101.0
Compensation per hour	(1)	(1)	38.3	43.0	58.3	70.8	77.6	85.5	92.5	100.0	108.2	118.7	130.7
Real compensation per hour	(1)	(1)	74.2	82.6	91.0	98.5	95.4	96.3	98.5	100.0	100.5	98.1	96.2
Unit labor cost	(1)	(1)	54.7	53.8	68.3	74.9	85.1	90.6	95.0	100.0	107.8	118.2	129.4
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	70.7	75.7	90.9	95.0	100.0	103.8	108.3	117.3
Implicit price deflator	(1)	(1)	54.7	56.2	66.5	73.4	81.8	90.7	95.0	100.0	106.4	114.8	125.2
Manufacturing:													
Output per hour of all persons	49.5	58.5	60.1	74.6	79.2	93.1	90.9	93.5	97.7	100.0	100.9	102.0	101.7
Compensation per hour	21.5	29.8	36.7	42.9	57.6	69.1	76.4	85.5	92.4	100.0	108.2	118.8	131.6
Real compensation per hour	54.1	65.2	75.1	82.3	89.9	94.2	93.9	96.3	98.3	100.0	100.5	99.2	96.7
Unit labor cost	43.4	51.0	61.1	57.4	72.7	74.2	84.1	91.4	94.6	100.0	107.3	118.5	129.4
Unit nonlabor payments	55.1	59.4	62.0	70.3	68.0	71.6	70.4	88.5	95.1	100.0	104.7	105,7	108.7
Implicit price deflator	46.8	53.4	61.3	61.2	70.7	73.4	80.1	90.6	94.7	100.0	108.5	113.4	123.4

[1] Not available.

32. Annual changes in productivity, hourly compensation, unit costs, and prices, 1970-80

Item	Year											Annual rate of change	
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1950-80	1960-80
Private business sector:													
Output per hour of all persons	0.9	3.6	3.5	2.7	−2.3	2.3	3.3	2.1	−0.2	−0.3	−0.2	2.5	2.2
Compensation per hour	7.4	6.6	6.5	8.0	9.4	9.5	8.6	7.7	8.4	10.1	10.2	6.0	7.1
Real compensation per hour	1.4	2.2	3.1	1.7	−1.4	0.4	2.7	1.2	0.7	−1.1	−3.0	2.4	1.9
Unit labor cost	6.4	2.9	2.9	5.2	11.9	7.2	5.1	5.5	8.6	10.4	10.4	3.5	4.8
Unit nonlabor payments	0.7	7.6	4.5	5.9	4.4	15.0	4.1	5.9	5.1	5.5	6.6	3.2	4.4
Implicit price deflator	4.5	4.4	3.4	5.4	9.4	9.7	4.7	5.6	7.4	8.8	9.2	3.4	4.7
Nonfarm business sector:													
Output per hour of all persons	0.3	3.3	3.7	2.5	−2.4	2.1	3.2	2.0	−0.2	−0.7	−0.3	2.1	1.9
Compensation per hour	7.0	6.6	6.7	7.6	9.4	9.6	8.1	7.6	8.5	9.7	9.9	5.7	6.8
Real compensation per hour	1.0	2.2	3.3	1.3	−1.4	0.4	2.2	1.0	0.7	−1.4	−3.2	2.1	1.6
Unit labor cost	6.6	3.1	2.8	4.9	12.1	7.4	4.7	5.5	8.7	10.4	10.3	3.5	4.8
Unit nonlabor payments	1.1	7.4	3.2	1.3	5.9	16.7	5.7	6.4	3.6	4.9	8.4	3.1	4.2
Implicit price deflator	4.6	4.5	3.0	3.7	10.1	10.3	5.1	5.8	7.0	8.6	9.7	3.4	4.6
Nonfinancial corporations:													
Output per hour of all employees	0.4	4.6	3.0	2.6	−3.4	3.4	3.2	2.7	0.4	−0.0	0.6	(1)	2.1
Compensation per hour	6.8	6.5	5.8	7.7	9.7	10.1	8.2	8.1	8.2	9.7	10.1	(1)	6.7
Real compensation per hour	0.8	2.1	2.5	1.4	−1.1	0.9	2.3	1.5	0.5	−1.4	−3.0	(1)	1.5
Unit labor cost	6.3	1.6	2.8	4.9	13.6	6.5	4.9	5.3	7.8	9.7	9.5	(1)	4.6
Unit nonlabor payments	0.5	7.4	2.7	1.5	7.1	20.1	4.6	5.2	3.8	4.4	8.3	(1)	3.8
Implicit price deflator	4.4	3.5	2.8	3.8	11.4	10.9	4.8	5.2	6.4	7.9	9.1	(1)	4.3
Manufacturing:													
Output per hour of all persons	−0.2	6.1	5.0	5.4	−2.4	2.9	4.4	2.4	0.9	1.1	−0.3	2.6	2.7
Compensation per hour	6.6	6.1	5.4	7.2	10.6	11.9	8.0	8.3	8.2	9.8	10.7	5.6	6.7
Real compensation per hour	0.8	1.8	2.0	0.9	−0.3	2.5	2.1	1.7	0.5	−1.3	−2.5	2.0	1.5
Unit labor cost	7.0	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.3	8.6	11.0	2.9	3.8
Unit nonlabor payments	−2.5	11.2	0.8	−3.3	−1.8	25.9	7.4	5.2	4.7	0.9	2.9	2.1	2.7
Implicit price deflator	4.3	3.1	0.5	0.3	9.0	13.1	4.6	5.6	6.5	6.4	8.8	2.7	3.5

[1] Not available.

33. Quarterly indexes of productivity, hourly compensation, unit costs, and prices, seasonally adjusted

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1979				1980				1981		
	1979	1980	I	II	III	IV	I	II	III	IV	I	II	III
Private business sector:													
Output per hour of all persons	99.5	99.3	99.7	99.7	99.4	99.1	99.5	99.1	99.4	99.1	100.3	101.1	100.9
Compensation per hour	119.3	131.5	115.0	118.1	120.7	123.2	126.4	130.1	133.1	135.9	139.7	143.2	146.4
Real compensation per hour	99.6	96.7	100.6	100.3	99.2	98.0	96.7	96.5	96.9	96.0	96.1	96.8	96.2
Unit labor cost	119.9	132.4	115.4	118.5	121.4	124.3	127.0	131.3	133.9	137.0	139.4	141.6	145.1
Unit nonlabor payments	110.9	119.3	108.6	110.4	111.5	112.2	115.2	118.0	119.7	122.7	127.6	129.3	132.2
Implicit price deflator	116.9	127.8	113.4	115.8	118.1	120.2	123.0	126.1	129.1	132.2	135.4	137.5	140.8
Nonfarm business sector:													
Output per hour of all persons	99.1	98.8	99.5	99.1	98.9	98.8	98.9	98.2	99.0	99.0	100.0	100.4	99.9
Compensation per hour	119.0	130.9	114.9	117.7	120.2	123.0	126.0	129.4	132.3	135.4	139.1	142.4	145.6
Real compensation per hour	99.3	96.2	100.4	100.0	98.8	97.8	96.4	96.0	96.3	95.6	95.7	96.3	95.7
Unit labor cost	120.0	132.4	115.4	118.7	121.5	124.4	127.4	131.8	133.6	136.8	139.1	141.9	145.7
Unit nonlabor payments	108.5	117.8	107.1	107.7	109.2	110.1	113.9	115.1	119.2	122.0	127.8	128.7	131.9
Implicit price deflator	116.2	127.4	112.8	115.1	117.4	119.7	122.9	126.3	128.8	131.9	135.3	137.5	141.1
Nonfinancial corporations:													
Output per hour of all employees	100.4	101.0	100.6	100.7	100.5	99.9	100.2	100.1	101.8	101.8	103.3	103.9	103.7
Compensation per hour	118.7	130.7	114.5	117.6	120.1	122.7	125.7	129.3	132.5	135.5	139.2	142.3	145.4
Real compensation per hour	99.1	96.2	100.1	99.9	98.7	97.5	96.2	95.9	96.5	95.7	95.7	96.2	95.6
Total unit costs	116.8	129.7	112.2	115.3	118.2	121.3	124.2	129.2	131.1	134.1	136.0	138.7	142.2
Unit labor cost	118.2	129.4	113.8	116.8	119.5	122.8	125.4	129.1	130.2	133.1	134.7	137.0	140.2
Unit nonlabor costs	112.7	130.2	107.8	111.2	114.8	117.2	120.9	129.3	133.8	138.9	139.5	143.6	147.9
Unit profits	99.0	90.2	105.6	100.7	97.5	92.2	95.5	83.4	88.1	92.4	106.8	102.8	105.1
Implicit price deflator	114.8	125.2	111.5	113.7	115.9	118.1	121.0	124.1	128.4	129.5	132.7	134.7	138.0
Manufacturing:													
Output per hour of all persons	102.0	101.7	101.5	102.3	102.0	102.1	102.0	100.7	100.7	103.2	104.1	105.1	105.5
Compensation per hour	118.8	131.6	114.5	118.6	119.8	122.3	125.4	130.0	133.9	137.3	140.9	144.6	147.7
Real compensation per hour	99.2	96.7	102.2	100.7	98.5	97.2	95.9	96.4	97.5	97.0	96.9	97.8	97.1
Unit labor cost	116.5	129.4	112.9	115.9	117.5	119.8	122.9	129.1	133.0	133.0	135.4	137.5	140.1

34. Percent change from preceding quarter and year in productivity, hourly compensation, unit costs, and prices, seasonally adjusted at annual rate

[1977=100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	I 1980 to II 1980	II 1980 to III 1980	III 1980 to IV 1980	IV 1980 to I 1981	I 1981 to II 1981	II 1981 to III 1981	II 1979 to II 1980	III 1979 to III 1980	IV 1979 to IV 1980	I 1980 to I 1981	II 1980 to II 1981	III 1980 to III 1981
Private business sector:												
Output per hour of all persons	−1.8	1.3	−1.1	4.6	3.5	−1.0	−0.6	0.0	0.0	0.7	2.1	1.5
Compensation per hour	12.3	9.5	9.6	11.8	10.4	9.2	10.1	10.3	10.3	10.5	10.1	10.0
Real compensation per hour	−0.7	1.6	−3.8	0.4	3.2	−2.4	−3.8	−2.3	−2.0	−0.7	0.3	−0.7
Unit labor costs	14.4	8.1	9.8	6.9	6.6	10.3	10.8	10.3	10.3	9.7	7.8	8.4
Unit nonlabor payments	2.6	13.7	10.2	17.2	5.3	9.3	5.1	7.4	9.3	10.8	11.5	10.4
Implicit price deflator	10.5	9.8	8.9	10.0	6.2	10.0	9.0	8.4	10.0	10.1	9.0	9.0
Nonfarm business sector:												
Output per hour of all persons	−2.9	3.6	−0.2	4.3	1.4	−1.8	−1.0	0.1	0.1	1.1	2.2	0.9
Compensation per hour	11.3	8.0	9.8	11.6	9.8	9.3	9.9	10.1	10.1	10.4	10.0	10.1
Real compensation per hour	−1.6	1.2	−2.7	0.2	2.4	−2.3	−4.0	−2.5	−2.2	−0.8	0.2	−0.6
Unit labor costs	14.8	5.3	10.1	7.0	8.1	11.1	11.0	9.9	9.9	9.2	7.8	9.1
Unit nonlabor payments	4.2	15.0	9.9	20.3	3.0	10.3	6.9	9.1	10.8	12.2	11.8	10.7
Implicit price deflator	11.3	8.2	10.0	11.0	6.5	10.9	9.7	9.6	10.2	10.1	8.9	9.6
Nonfinancial corporations:												
Output per hour of all employees	−0.5	6.7	0.0	6.3	2.2	−0.6	−0.5	1.3	1.9	3.1	3.8	1.9
Compensation per hour	12.0	10.2	9.4	11.4	9.3	8.0	8.8	10.3	10.4	10.8	10.1	8.8
Real compensation per hour	−1.0	2.2	−3.1	0.0	2.1	−2.8	−3.9	−2.2	−1.9	−0.5	0.3	−0.9
Total unit costs	17.0	6.2	9.4	5.6	8.4	10.4	12.0	11.0	10.5	9.5	7.4	8.4
Unit labor costs	12.8	3.2	9.4	4.8	7.0	9.6	10.5	8.9	8.4	7.4	6.1	7.7
Unit nonlabor costs	30.8	14.7	9.5	7.9	12.3	12.3	16.3	16.8	16.8	15.4	11.1	10.5
Unit profits	−41.9	30.3	15.7	77.9	−13.9	8.9	−17.2	−8.6	0.3	11.8	23.3	17.9
Implicit price deflator	10.5	7.9	9.8	10.4	6.2	10.2	9.1	9.1	9.6	9.7	6.6	9.2
Manufacturing:												
Output per hour of all persons	−4.9	0.0	10.4	3.3	4.1	1.3	−1.6	−1.3	1.1	2.1	4.4	4.7
Compensation per hour	15.5	12.7	10.5	11.1	10.8	9.0	9.6	11.7	12.2	12.4	11.3	10.3
Real compensation per hour	2.1	4.5	−2.2	−0.3	3.5	−2.7	−4.3	−1.0	−0.3	1.0	1.4	−0.4
Unit labor costs	21.4	12.7	0.1	7.5	6.4	7.6	11.3	13.2	11.0	10.2	6.6	5.3

LABOR-MANAGEMENT DATA

MAJOR COLLECTIVE BARGAINING DATA are obtained from contracts on file at the Bureau of Labor Statistics, direct contact with the parties, and from secondary sources. Additional detail is published in *Current Wage Developments*, a monthly periodical of the Bureau. Data on work stoppages are based on confidential responses to questionnaires mailed by the Bureau of Labor Statistics to parties involved in work stoppages. Stoppages initially come to the attention of the Bureau from reports of Federal and State mediation agencies, newspapers, and union and industry publications.

Definitions

Data on wage changes apply to private nonfarm industry agreements covering 1,000 workers or more. Data on wage and benefit changes *combined* apply only to those agreements covering 5,000 workers or more. **First-year wage settlements** refer to pay changes going into effect within the first 12 months after the effective date of the agreement. **Changes over the life of the agreement** refer to total agreed-upon settlements (exclusive of potential cost-of-living escalator adjustments) expressed at an average annual rate. **Wage-rate changes** are expressed as a percent of straight-time hourly earnings, while **wage and benefit changes** are expressed as a percent of total compensation.

Effective wage-rate adjustments in major bargaining units measure actual changes during the reference period, whether the result of a newly negotiated increase, a deferred increase negotiated in an earlier year, or a cost-of-living adjustment. Average adjustments are affected by workers receiving no adjustment, as well as by those receiving increases or decreases.

Work stoppages include all known strikes or lockouts involving six workers or more and lasting a full shift or longer. Data cover all workers idle one shift or more in establishments directly involved in a stoppage. They do not measure the indirect or secondary effect on other establishments whose employees are idle owing to material or service shortages.

35. Wage and benefit settlements in major collective bargaining units, 1976 to date

[In percent]

Measures and industry	Annual average					Quarterly average								
	1976	1977	1978	1979	1980	1979		1980				1981 p		
						III	IV	I	II	III	IV	I	II	III
Wage and benefit settlements, all industries:														
First-year settlements	8.5	9.6	8.3	9.0	10.4	9.0	8.5	8.8	10.2	11.4	8.5	10.3	11.9	12.8
Annual rate over life of contract	6.6	6.2	6.3	6.6	7.1	6.1	6.0	6.7	7.4	7.2	6.1	7.6	10.9	9.3
Wage rate settlements, all industries:														
First-year settlements	8.4	7.8	7.6	7.4	9.5	6.8	6.3	8.2	9.1	10.5	8.3	9.2	11.8	12.1
Annual rate over life of contract	6.4	5.8	6.4	6.0	7.1	5.1	5.3	6.5	7.3	7.4	6.5	7.8	8.7	9.4
Manufacturing:														
First-year settlements	8.9	8.4	8.3	6.9	7.4	6.3	5.6	7.2	6.7	8.4	7.8	9.4	8.0	9.8
Annual rate over life of contract	6.0	5.5	6.6	5.4	5.4	4.7	4.2	5.7	5.1	5.6	5.8	7.0	6.5	7.6
Nonmanufacturing (including construction):														
First-year settlements	8.6	8.0	8.0	7.6	9.5	9.4	7.8	9.4	10.3	9.5	8.2	8.6	11.8	10.4
Annual rate over life of contract	7.2	5.9	6.5	6.2	6.8	6.5	7.4	7.6	8.5	5.9	6.8	7.8	8.1	8.5
Construction:														
First-year settlements	6.1	6.3	6.5	8.8	13.6	9.7	7.5	10.8	12.2	15.4	14.3	11.4	13.2	17.6
Annual rate over life of contract	6.2	6.3	6.2	6.3	11.5	8.5	7.6	9.1	10.4	13.0	12.0	10.3	11.1	12.8

36. Effective wage adjustments in major collective bargaining units, 1976 to date

[In percent]

Measures and industry	Average annual changes					Average quarterly changes								
	1976	1977	1978	1979	1980	1979		1980				1981^{p}		
						III	IV	I	II	III	IV	I	II	III
Total effective wage rate adjustment, all industries	8.1	8.0	8.2	9.1	9.9	3.3	1.6	1.6	3.3	3.5	1.3	1.2	2.8	3.0
Change resulting from —														
Current settlement	3.2	3.0	2.0	3.0	3.6	1.0	.5	.4	1.0	1.7	.5	.1	1.0	.5
Prior settlement	3.2	3.2	3.7	3.0	3.5	1.0	.4	.5	1.4	1.2	.3	.8	1.3	1.5
Cost-of-living adjustment clause	1.6	1.7	2.4	3.1	2.8	1.2	.7	.7	.8	.7	.6	.6	.6	1.0
Manufacturing	8.5	8.4	8.6	9.6	10.2	3.2	2.4	2.0	3.4	2.9	1.7	1.5	1.8	2.6
Nonmanufacturing	7.7	7.6	7.9	8.6	9.7	3.4	1.0	1.3	3.2	4.0	1.1	1.0	3.6	3.3

NOTE: Because of rounding and compounding, the sums of individual items may not equal totals.

37. Work stoppages, 1947 to date

Month and year	Number of stoppages		Workers involved		Days idle	
	Beginning in month or year	In effect during month	Beginning in month or year (thousands)	In effect during month (thousands)	Number (thousands)	Percent of estimated working time
1947	3,693	....	2,170	....	34,600	.30
1948	3,419	....	1,960	....	34,100	.28
1949	3,606	....	3,030	....	50,500	.44
1950	4,843	....	2,410	....	38,800	.33
1951	4,737	....	2,220	....	22,900	.18
1952	5,117	....	3,540	....	59,100	.48
1953	5,091	....	2,400	....	28,300	.22
1954	3,468	....	1,530	....	22,600	.18
1955	4,320	....	2,650	....	28,200	.22
1956	3,825	....	1,900	....	33,100	.24
1957	3,673	....	1,390	....	16,500	.12
1958	3,694	....	2,060	....	23,900	.18
1959	3,708	....	1,880	....	69,000	.50
1960	3,333	....	1,320	....	19,100	.14
1961	3,367	....	1,450	....	16,300	.11
1962	3,614	....	1,230	....	18,600	.13
1963	3,362	....	941	....	16,100	.11
1964	3,655	....	1,640	....	22,900	.15
1965	3,963	....	1,550	....	23,300	.15
1966	4,405	....	1,960	....	25,400	.15
1967	4,595	....	2,870	....	42,100	.25
1968	5,045	....	2,649	....	49,018	.28
1969	5,700	....	2,481	....	42,869	.24
1970	5,716	....	3,305	....	66,414	.37
1971	5,138	....	3,280	....	47,589	.26
1972	5,010	....	1,714	....	27,066	.15
1973	5,353	....	2,251	....	27,948	.14
1974	6,074	....	2,778	....	47,991	.24
1975	5,031	....	1,746	....	31,237	.16
1976	5,648	....	2,420	....	37,859	.19
1977	5,506	....	2,040	....	35,822	.17
1978	4,230	....	1,623	....	36,922	.17
1979	4,827	....	1,727	....	34,754	.15
1980: November	205	532	53	126	1,440	.09
December	80	380	19	77	1,228	.08
1981^{p}: January	253	297	50	68	614	.03
February	347	517	80	136	647	.04
March	314	545	271	336	1,419	.07
April	371	590	101	273	5,117	.25
May	473	660	152	383	5,857	.31
June	421	662	186	499	3,891	.19
July	381	659	127	190	2,015	.10
August	310	599	72	148	1,775	.09
September	358	565	47	109	1,458	.07
October	231	517	25	83	1,182	.06
November	200	385	23	27	422	.02

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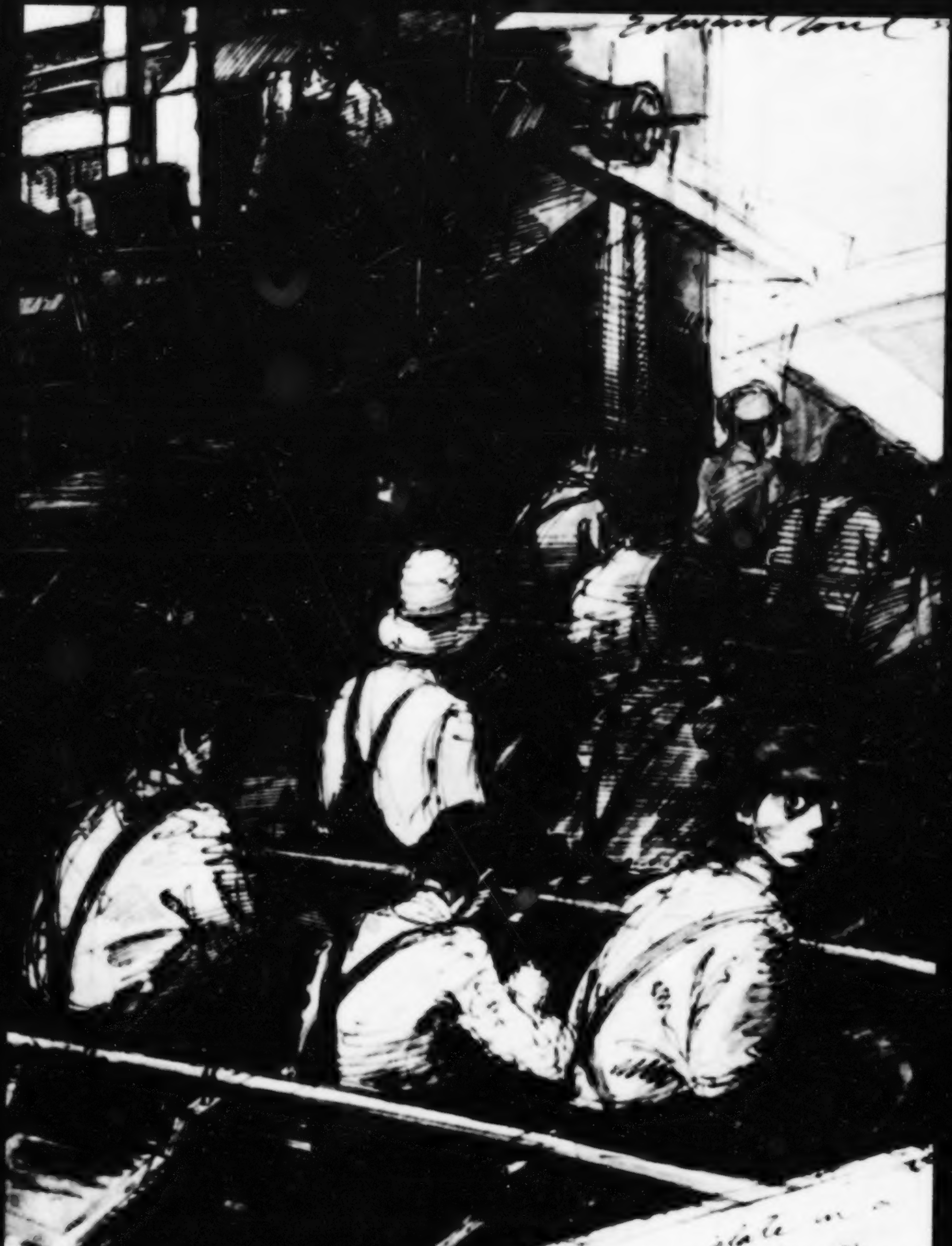
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Labor Month In Review

ECONOMIC HARDSHIP. To what extent has the link between unemployment and economic hardship been weakened? A new Bureau of Labor Statistics study sheds some light on that question. Data for the study are drawn from the March 1980 Current Population Survey. Excerpts:

Economic and social changes over the past 40 years have altered the relationship between a worker's experience of unemployment and the family's income position. Unemployment compensation and other forms of social insurance have helped to offset at least part of the reduction in family income resulting from the loss of a job. In addition, the growth of two-earner families has made family income less sensitive to fluctuations in the earnings of a single family member.

Poverty-jobless link. If it is an oversimplification to say that unemployment always means hardship for families, it is equally an oversimplification to say that the connection between the two has been broken.

The data confirm that today poverty does not always accompany unemployment. Of the 18 million workers who experienced some spells of unemployment during 1979, only 14 percent belonged to families whose incomes were below the poverty level. Similarly, about 13 percent of the workers who worked part time involuntarily belonged to families in poverty. Even for fully employed workers whose hourly earnings were at or near the minimum wage, the tie between the earnings level of individual workers and the income of their families was not a tight one. Approximately 4.8 million workers had annual earnings that implied that they were working at or near the minimum wage; less than one-quarter of these (1.1 million) were in families of households below the poverty level.

Family make-up link. On the other hand, a more intensive examination of the data suggests that the overall numbers hide important relationships. The links between a worker's low earnings, or an interruption in those earnings, and family income depend greatly on the composition of the family to which the worker belongs. For workers other than husbands in married-couple families (these workers include wives and "others," mostly youth), low earnings or interruptions in earnings occasioned by unemployment or part-time work are not, in the vast majority of cases, associated with family income that falls below the poverty level. However, the contrary is the case for workers who do not reside in a married-person household and who experience low earnings, unemployment, or part-time work. For example, the poverty rate reaches 51 percent for families maintained by women who could only find part-time work, and nearly one-half of the families of unemployed women who maintain families are below the poverty level. Much the same picture emerges for unrelated individuals (persons who do not maintain families) and, to a somewhat lesser extent, for men who maintain families.

Thus, the analysis suggests that, for many families, poverty is not a direct and inevitable result of unemployment, short workweeks, or low earnings experienced by one or more family members. But it is primarily in married-couple households having two or more earners that the traditional relationship between labor market status and the economic condition of the family is broken. For other types of households—men and women who maintain families and persons who live by themselves outside of family units—low earnings, unemployment, short workweeks, and part-year work are linked fairly closely with economic hardship.

Qualification. These conclusions must be qualified in the sense that there are many cases which cannot be thoroughly explored from the data available. For example, when a middle-income worker is laid off from a well paying job, the family may have sufficient resources to avoid falling all the way to the poverty level; nevertheless, possible consequences such as foreclosures or mounting debt can entail substantial economic hardship, even if not as extreme as a decline to poverty status. In addition, there are many cases where the interruption of labor income means severe economic distress which cannot be evaluated with existing data. For example, it is known that the unemployment rate for wives whose husbands are unemployed is much higher than that of wives whose husbands are employed. When two workers in a married-couple household are unemployed, the implications for family income are undoubtedly severe, but the present data are not detailed enough to analyze these cases.

Data include, in addition to normal wage and salary income, cash payments from such sources as unemployment compensation and other forms of social insurance. Not included are noncash forms of assistance (such as food stamps) to which a low-income family may be entitled. They are, however, the most comprehensive data on family income yet assembled that can be related to the labor force status and activities of individual family members.

The 58-page study also analyzes other aspects of insufficient employment and links these individual employment problems to family income and poverty.

Linking Employment Problems to Economic Status, BLS Bulletin 2123, is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402, and from BLS regional offices listed on the inside front cover. Price $4.50. □

The employment situation in 1981: new recession takes its toll

By yearend, joblessness had surged, propelled by cutbacks in housing, auto, and related industries; employment was back to its year-ago level; the employment-population ratio was at a 4-year low; and the number of discouraged workers and involuntary part-timers topped previous records

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The labor market turned sour in mid-1981 as the economy entered its eighth postwar recession following a rather weak and brief recovery. High interest rates continued to plague the housing and automobile industries, which never totally recovered from 1980, and the weakness of these two critical industries had begun to spread to related industries as 1981 unfolded. Product orders were reduced, leading to increased inventories, sharp cutbacks in production, and eventually to increased layoffs and other job losses.

The labor market, which received its second jolt in as many years, was experiencing precipitous declines by the final quarter of 1981. The number of unemployed reached 9.6 million—8.8 percent of the work force—by the end of the year. There were also large increases in the number of persons reporting discouragement over job prospects and the number still employed but reporting reduced workweeks.

Although by the end of 1981 total employment was near its year ago level, the pattern during the year was one of growth through spring, stagnation in the summer, and pronounced cutbacks at the end of the year. The percentage of the population employed was at a 4-year low by December.[1]

Unemployment rises sharply at yearend

The recovery from the 1980 recession had only a marginal impact on the Nation's unemployment rate, which never dipped below the 7.2-percent mark (seasonally adjusted) during 1981. Despite an increase in total employment of 1.8 million between the second quarters of 1980 and 1981, the growth was insufficient to have a marked improvement on joblessness, as the unemployment rate only dropped from the 1980 high of 7.8 percent to 7.2 percent in July 1981. As economic activity declined in the second half, the number of jobless persons jumped by nearly 2 million from July to December, and the overall unemployment rate reached 8.8 percent, very close to the post-World War II high of 9.0 percent recorded in May 1975.

Given the persistently high rates of unemployment

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since mid-1980, the fourth quarter surge pushed the unemployment rates for many worker groups beyond those reached during the 1980 recession and, in some cases, exceeded the postwar records of the 1973–75 recession. The following tabulation shows the peak monthly jobless rates (seasonally adjusted) for major demographic groups in 1975, 1980, and 1981:

	1975	*1980*	*1981*
All workers	9.0 (May)	7.8 (July)	8.8 (Dec.)
Men, age 20 and over	7.3 (May)	6.7 (July)	7.9 (Dec.)
Women, age 20 and over	8.5 (Apr.)	6.7 (July)	7.4 (Dec.)
Teenagers	20.9 (June)	19.1 (July)	21.5 (Dec.)
White	8.4 (May)	6.9 (July)	7.7 (Dec.)
Blacks	15.4 (Sept.)	15.2 (July)	17.3 (Dec.)

Joblessness among men (20 years and over), which had shown some improvement early in the recent recovery period, increased 2.2 percentage points between July and December 1981 to 7.9 percent, exceeding the postwar high reached in 1975. The rate for women showed virtually no improvement in the recovery period, remaining at about 6.7 percent before rising to 7.4 percent by December. While this was more than half a point above the 1980 high for women, it was still more than a point below the 1975 record. The greater increase in unemployment among men was primarily due to their predominance in industries experiencing extensive job cutbacks. In December, the rate for men actually exceeded that for women, an unusual labor market occurrence.

The employment situation for teenagers continued to worsen; their unemployment rate has shown a step-like pattern of deterioration since mid-1979. By the end of 1981, the teenage rate of 21.5 percent was the highest ever recorded, more than half a point above that reached in 1975. Joblessness among women who maintain families followed a similar pattern, rising from 8.1 to 9.1 percent between the third quarters of 1979 and 1980 before leaping to 10.7 percent in the third quarter of 1981, about a point above their 1975 peak.

The rise in unemployment among blacks[2] affected both adults and teenagers and occurred earlier in the year than was the case for white workers. Indeed, unemployment among blacks showed virtually no recovery from the 1980 recession and their jobless rate was hitting new records by summer. Their overall rate was 17.3 percent by December. The black share of total unemployment was 21 percent in 1981, double their labor force share. This was little changed from 1980, but higher than their share during the early 1970's. Unemployment for Hispanic workers seesawed over the year, ending the year at slightly above 11 percent, about a point higher than a year ago. Most of the increase was accounted for by women age 20 and over. Persons of Puerto Rican origin experienced the highest rate of joblessness in 1981, averaging 13.6 percent for the year; the unemployment rate for persons of Mexican origin averaged 10.5 percent and those of Cuban origin, 9 percent.

Industry and occupation. Substantial fourth quarter increases pushed joblessness among workers in most major industry groups above 1980 recession rates by yearend.[3] (See table 1.) Attention during the year was focused on those industries directly affected by continued high interest rates, most notably housing construction, automobile manufacturing, and related industries.

There was some slight improvement in the unemployment rate for workers in the construction industry from the third quarter of 1980 to the first quarter of 1981. The rate moved steadily higher, as the year progressed, reaching 18.1 percent in December. The patterns for the housing-related lumber and wood products, furniture and fixtures, and stone, clay and glass industries were similar. Two of the three detailed manufacturing industries whose 1981 peak jobless rates exceeded those reached in both 1980 and in 1975 were housing related; the other, food processing, has undergone several technological changes in recent years to better insulate itself against inflationary pressures. The following tabulation show peak monthly unemployment rates in selected manufacturing industries:

	1975	*1980*	*1981*
Lumber and wood products	16.0 (May)	17.0 (June)	22.0 (Dec.)
Stone, clay and glass	11.8 (Apr.)	10.7 (May)	12.7 (Dec.)
Food processing	11.5 (June)	10.4 (Dec.)	12.1 (Dec.)

Except for furniture and fixtures, the manufacturing industries whose 1981 peak jobless rates exceeded those attained in 1980, but not those in 1975, were auto related:

	1975	*1980*	*1981*
Furniture and fixtures	16.4 (Feb.)	11.3 (Sep.)	13.2 (Dec.)
Textiles	17.9 (Jan.)	11.9 (Oct.)	14.1 (Dec.)
Chemicals	7.9 (May)	5.3 (Aug.)	6.2 (Dec.)
Rubber and plastics	15.5 (Mar.)	12.9 (July)	15.1 (Jan.)

December unemployment rates for workers in primary and fabricated metals, machinery, and electrical equipment, while up from earlier in the year, were still below 1980 highs.

Joblessness among workers in the automobile industry showed improvement between the third quarter of 1980 and the second quarter of 1981, dropping from 22.4 percent to 11.8 percent, but hit 21.7 percent in December. Most of the reduction was due to workers finding jobs elsewhere (although some auto workers were

Table 1. Selected unemployment indicators, seasonally adjusted quarterly averages, 1980–81

[Unemployment rates]

Category	1980				1981			
	I	II	III	IV	I	II	III	IV
Total, 16 years and over	6.3	7.3	7.8	7.5	7.4	7.4	7.4	8.3
Men, 20 years and over	4.9	6.2	6.6	6.3	6.0	6.1	6.0	7.2
Women, 20 years and over	5.8	6.4	6.5	6.7	6.6	6.7	6.7	7.2
Both sexes, 16 to 19 years	16.4	17.9	18.7	18.2	19.1	19.2	19.1	21.1
White	5.5	6.5	6.8	6.8	6.5	6.5	6.4	7.3
Black	12.8	14.3	15.0	15.1	14.8	15.1	15.8	17.0
Hispanic origin	9.1	10.1	10.9	10.1	11.0	9.8	9.8	11.1
Married men, spouse present	3.4	4.4	4.8	4.4	4.1	4.0	4.1	5.2
Married women, spouse present	5.3	5.9	6.1	5.9	5.9	5.8	5.7	6.4
Women who maintain families	8.8	8.7	9.1	10.1	9.9	10.3	10.7	10.8
Full-time workers	5.9	7.0	7.5	7.3	7.1	7.1	7.0	8.1
Part-time workers	8.7	8.9	8.7	8.7	9.1	9.3	9.5	9.8
White-collar workers	3.4	3.7	3.8	3.9	3.9	4.0	4.0	4.3
Blue-collar workers	8.2	10.5	11.1	10.6	10.1	9.8	9.7	11.8
Service workers	7.2	8.0	8.3	8.2	8.4	9.0	8.8	9.5
Farmworkers	4.3	4.8	4.9	4.3	5.0	5.1	4.7	6.3
Nonagricultural private wage and salary workers[1]	6.3	7.7	7.9	7.7	7.5	7.4	7.4	8.5
Construction	12.0	15.3	16.1	14.2	14.0	15.4	15.9	17.8
Manufacturing	6.8	9.0	9.4	9.0	8.4	7.6	7.4	9.7
Durable goods	6.7	9.8	10.1	9.2	8.4	7.3	7.1	10.0
Nondurable goods	6.9	8.0	8.3	8.6	8.4	8.1	7.9	9.2
Transportation and public utilities	4.2	4.9	5.8	5.2	5.7	5.4	4.4	5.5
Wholesale and retail trade	6.6	7.5	7.7	7.9	7.7	7.6	8.1	8.6
Finance and service industries	4.8	5.4	5.6	5.6	5.9	5.8	5.8	6.2
Government workers	4.0	4.0	4.2	4.3	4.4	4.7	4.6	5.0
Agricultural wage and salary workers	10.0	11.4	11.7	10.8	11.8	11.2	11.3	14.1

[1] Includes mining, not shown separately.

recalled to their jobs), because employment growth in the industry was essentially nonexistent after mid-1979.

The dramatic yearend surge in joblessness brought the jobless rate for all factory workers to 11.0 percent in December, 11.8 percent for those in durables and 9.6 percent for nondurables.

Among the major occupational groups, the jobless pattern showed generally little or no improvement for the first three quarters followed by a surge in the fourth, especially among blue-collar workers. Their jobless rate was up to 12.7 percent by December, as craftworkers, operatives, and nonfarm laborers all recorded increases. White-collar unemployment was also up in December to 4.5 percent, with the sharpest increase occurring among professional and technical workers, whose December rate of 3.4 percent almost equaled its previous high in 1975. Unemployment among clerical workers was also up at yearend.

Reasons for unemployment. In the household survey, jobless persons are categorized according to whether they lost their last job (due to either a layoff or a permanent separation), voluntarily left a job, entered the labor force for the first time, or began to search for work after a period of absence from the labor market. The distribution of total unemployment by these groups changes over the business cycle. During economic contractions, there, of course, are sharp increases in job-loss unemployment, especially in that due to layoff. In contrast, there is normally a decline in the number of persons who began looking for work because they quit their last job.

As a result of the weak recovery from the 1980 recession, job losers' share of total unemployment remained high throughout the year. (See table 2.) The first quarter level of 4 million, the low for the year, was still more than a million above pre-1980 recession levels. While historically the percentage of job losers usually drops to around 40 percent during recoveries, in 1981 they represented about 50 percent of total unemployment through the third quarter. At 56 percent in December, the percentage of job losers was very close to the 58-percent high reached in the 1973–75 recession.

The number of persons on layoff, a very sensitive cyclical measure, did show a decline of a half million between the third quarters of 1980 and 1981, before rising sharply in the final quarter. At 2 million in December, the number on layoff was at the peak level reached in the 1975 recession.

Duration of unemployment. An important consideration in the evaluation of overall unemployment is the average duration of joblessness. Short spells of unemployment are often considered to be only a result of frictions in the labor market, as workers move from job to job and labor supply adjusts to changes in demand. The longer a period of unemployment, the greater the economic hardship that is normally associated with it.

Table 2. Reason for and duration of unemployment, seasonally adjusted quarterly averages, 1980–81
[Numbers in thousands]

Reason and duration	1980				1981			
	I	II	III	IV	I	II	III	IV
Reason								
Percent distribution	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Lost last job	47.4	52.4	54.2	53.2	50.4	50.5	51.3	54.1
On layoff	16.9	21.6	21.9	19.0	16.5	16.5	16.3	20.1
Other	30.4	30.7	32.4	34.2	33.9	34.1	34.9	34.0
Left last job	12.6	12.0	11.0	11.0	11.5	11.6	11.3	10.3
Reentered labor force	27.6	24.9	23.7	24.6	25.8	25.7	25.5	24.7
Seeking first job	12.5	10.8	11.1	11.2	12.4	12.1	11.9	11.0
Duration								
Less than 5 weeks	3,132	3,498	3,351	3,196	3,278	3,290	3,383	3,865
5–14 weeks	2,163	2,636	2,085	2,455	2,370	2,500	2,455	2,861
15 weeks and over	1,385	1,745	2,146	2,347	2,327	2,260	2,212	2,343
15–26 weeks	825	1,012	1,229	1,235	1,084	1,112	1,107	1,195
27 weeks and over	560	733	917	1,113	1,243	1,148	1,105	1,148
Median duration, in weeks	5.7	6.1	7.3	7.4	7.2	7.2	7.0	6.8
Average (mean) duration, in weeks	10.7	11.2	12.4	13.4	14.1	13.8	14.0	13.2

The two average measures of unemployment duration—the mean and the median—differ in regard to their sensitivity to changes in the number of persons experiencing either short- or long-term joblessness, the median being less sensitive to extreme values. While both generally move in the same direction as the overall unemployment rate, there is a definite lagged response at economic turning points. For example, during the 1980 recession, very long-term unemployment (27 weeks or longer) continued to increase—from 915,000 in the third quarter of 1980 to more than 1.2 million in the first quarter of 1981. (See table 2.) Due to the brevity of the recovery, such joblessness declined only slightly in the subsequent two quarters before increasing again in the last quarter.

The lag in the response of long-term joblessness to an economic upturn has different implications for the mean and median duration figures. For example, although the rate of unemployment in the 1980 recession never exceeded the 7.8-percent figure attained in July, the mean duration of unemployment continued upward through the first quarter of 1981. In economic downturns, the mean duration will frequently decline for a few months, as the newly unemployed enter the jobless stream. Thus, in 1981, mean duration actually fell in the fourth quarter. The median duration measure, by contrast, usually responds much faster to changing economic conditions and moves more in tandem with overall unemployment, because it is dominated by the movement of the shorter-term duration groups. During the 1980 recession, for example, the increase in the median generally followed that of the overall rate, though lagging somewhat in the recovery phase. In 1981, however, the yearend rise in unemployment was so steep that median duration also declined a bit in the fourth quarter. Both measures can be expected to increase in the months ahead.

Shortened workweeks and discouragement

Just as the health of the economy influences unemployment, it similarly influences the number of people who report that they want a job but are not looking for one because they believe no work is available—so-called "discouraged workers." In addition, as the Nation enters a recession, employers frequently reduce hours where possible before laying off employees. Persons on such shortened workweeks are termed involuntary part-time workers. They, along with discouraged workers, are not reflected in the official count of unemployment, although information on both groups is important in achieving a full appreciation of the nature and magnitude of the underutilization of human resources.

Nonagricultural workers involuntarily on part-time schedules totaled more than 5 million, or 5.6 percent of the nonfarm "at-work" population, in the fourth quarter of 1981. This was the highest level recorded since collection of the data began in 1955. Slack work, the most cyclical component of involuntary part-time work, accounted for half of this total. The following tabulation shows the distribution of involuntary part-time workers (seasonally adjusted quarterly averages):[4]

			Part time due to—	
	Number	*Percent*	*Slack work*	*Could find only part time*
1980:				
I	3,546	3.9	1.9	1.5
II	4,171	4.6	2.5	1.7
III	4,290	4.8	2.5	1.8
IV	4,216	4.7	2.3	1.9
1981:				
I	4,323	4.7	2.4	2.0
II	4,166	4.6	2.2	2.0
III	4,460	4.9	2.4	2.1
IV	5,108	5.6	2.8	2.3

The number of persons on shortened workweeks had remained high during the recovery period between the 1980 and 1981 recessions, perhaps an indication of the general sluggishness and weakness in the labor market that prevailed at that time. There has been a growing tendency in recent years for employers to keep workers on a shortened workweek for a longer spell than in earlier years.[5] Also, as shown above, the proportion of involuntary part-timers who reported they could only find part-time work has continued to grow in recent years, as it has for the last decade. Thus, just as the job picture is now characterized by higher overall average unemployment, it is also characterized by a higher proportion of involuntary part-time work.

Discouraged workers have neither worked nor have they looked for work during the 4-week period prior to enumeration. Historically, the number of such workers tends to move in tandem with overall unemployment.[6] Given the generally weak economy and higher than average unemployment during 1981, the number of discouraged workers remained above the million mark throughout the year. (See table 3.) Even the deep 1973–75 recession did not result in such consistently high levels. The increase in the number of discouraged workers in the fourth quarter of 1981 brought the level to 1.2 million, slightly above the previous high recorded in the third quarter of 1975 and about 140,000 above the level of a year earlier. Nearly three-fourths of the recently discouraged cited job market factors as the reason for not looking for work, the component which gives discouragement its cyclical nature. Most of the 1981 increase occurred in the last quarter. Women and blacks are disproportionately represented among the discouraged. They made up 64 and 30 percent of these workers in the last quarter of 1981, compared with 43 and 12 percent of the labor force.

Table 3. Discouraged workers, seasonally adjusted quarterly averages, 1980–81

[In thousands]

Category	1980				1981			
	I	II	III	IV	I	II	III	IV
Total	948	955	1,006	1,063	1,093	1,043	1,094	1,199
Job-market factors	601	648	687	720	849	718	801	883
Personal factors	347	307	319	343	244	325	293	316
Men	358	332	382	361	375	414	383	435
Women	591	623	624	702	718	630	711	764
White	670	640	699	694	744	708	744	807
Black and other	301	309	310	356	387	326	351	364

The employment picture

With strong growth during the first half of 1981, total employment, as measured by the survey of households, appeared to have regained much of the momentum lost during the 1980 downturn. The number of persons employed rose by 2.1 million between June's 1980 low and July 1981, reaching the 100.9-million mark in July. As the economy turned downward again in the third quarter, however, it was evident that a new recession was at hand. Especially sharp declines in the fourth quarter resulted in cutbacks totaling 1.3 million between July and December. Table 4 traces these developments on a quarterly basis for a number of worker groups.

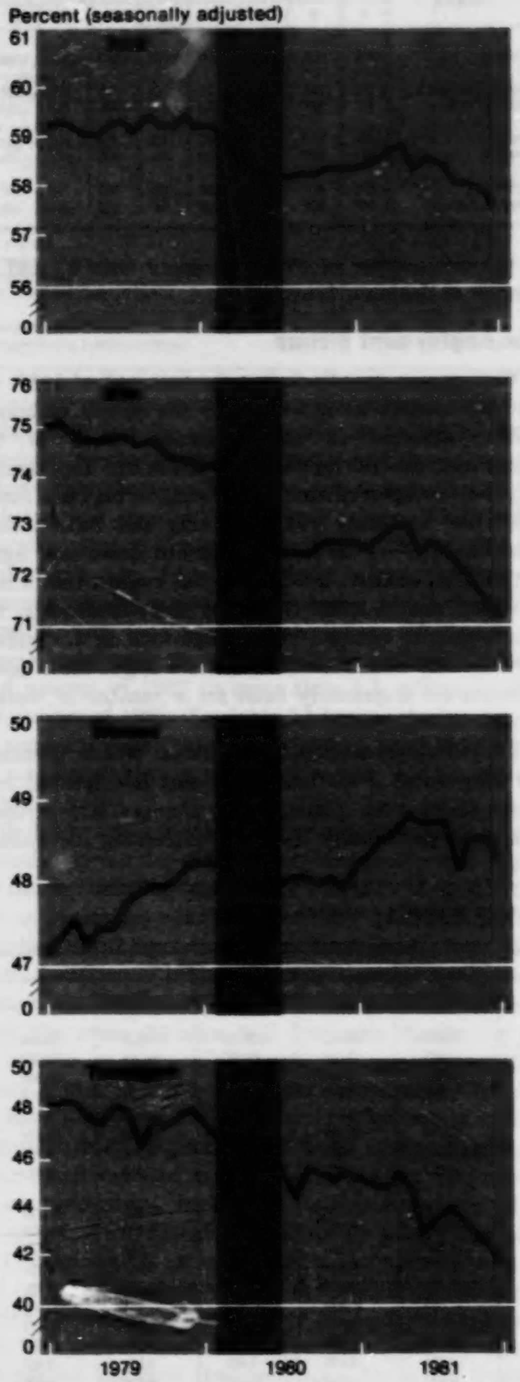
The employment-population ratio, which measures the proportion of the population that is employed, is a useful statistic for putting these changes into perspective.[7] It is particularly helpful in discerning the cyclical

Table 4. Employed persons by selected categories, seasonally adjusted quarterly averages, 1980–81

[In thousands]

Selected categories	1980				1981			
	I	II	III	IV	I	II	III	IV
Total, 16 years and over	99,784	98,953	99,006	99,498	100,125	100,784	100,654	100,043
Men, 20 years and over	53,478	52,887	52,840	53,211	53,448	53,767	53,796	53,327
Women, 20 years and over	38,351	38,349	38,584	38,714	39,202	39,677	39,682	39,802
Both sexes, 16 to 19 years	7,955	7,717	7,583	7,573	7,476	7,341	7,176	6,914
White	88,183	87,466	87,398	87,846	88,381	89,039	89,006	88,414
Black	9,370	9,267	9,305	9,312	9,367	9,419	9,308	9,304
Hispanic origin	5,028	5,086	5,156	5,257	5,277	5,336	5,349	5,431
White-collar workers	51,408	51,690	52,177	52,280	52,754	52,943	52,985	53,123
Professional and technical workers	15,738	15,967	16,015	16,161	16,225	16,227	16,528	16,704
Managers and administrators, except farm	10,954	11,087	11,255	11,287	11,638	11,505	11,524	11,500
Sales workers	6,363	6,162	6,329	6,357	6,384	6,455	6,435	6,423
Clerical workers	18,353	18,485	18,578	18,475	18,508	18,756	18,499	18,496
Blue-collar workers	32,397	31,325	30,880	31,297	31,211	31,673	31,488	30,680
Craft and kindred workers	13,028	12,759	12,653	12,724	12,710	12,828	12,675	12,434
Operatives, except transport	10,875	10,507	10,343	10,540	10,558	10,703	10,834	10,288
Transport equipment operatives	3,650	3,529	3,483	3,484	3,439	3,481	3,521	3,462
Nonfarm laborers	4,844	4,529	4,401	4,549	4,505	4,661	4,458	4,497
Service workers	13,247	13,213	13,253	13,209	13,358	13,384	13,400	13,611
Farmworkers	2,756	2,712	2,720	2,793	2,748	2,761	2,741	2,744

Chart 1. Employment-population ratios for selected workers, 1979-81



Note: Shaded area indicates the 1980 recession.

impact of an economic downturn on workers. Because the population is continually growing for most worker groups, a decline in the overall employment population ratio, even while employment is showing some growth, clearly reflects the inability of the economy to generate enough jobs.

From a record high of 59.4 percent in late 1979, the ratio dropped to 58.3 percent by the end of 1980, reflecting the recession and an initially weak recovery. Some improvement occurred in the first half of 1981—as the ratio inched up to 58.8 percent—but with the precipitous decline of the economy in the second half, the ratio was down to 57.5 percent by December, its lowest level in more than 4 years. During the second half, declines in the ratio were heavy among men and teenagers, while the proportion of women who were employed dipped slightly.[8] (See chart 1.)

During the first half of 1981, strong job growth was evident among men, as they regained the job losses experienced during the 1980 downturn. By midyear, this group had registered a 550,000 advance in employment. However, employment rose only marginally during the third quarter, and then dropped by more than 400,000 in the closing months of 1981. These developments, when coupled with an increase in population, caused the employment-population ratio for men to decrease by 1.1 percentage points over the year, to 71.5 percent, a new low for this group. As industrial production declined in response to an involuntary build-up in inventories, the demand for labor in the goods-producing sector slackened accordingly. Because roughly 7 of 10 workers in the goods-producing sector are adult men, it is not surprising that they were severely affected by production cutbacks.

By contrast, women increased their employment over the year despite the recession. Their jobs are concentrated in the service-producing sector, which historically has been less responsive to cyclical movements in the economy than the goods sector. However, employment among women grew very little in the second half of the year as the downturn became more broadly based. By the fourth quarter, employment among women stood at 39.8 million, up 1.1 million from its year-earlier level. The employment-population ratio for women reached a new high of 48.7 percent in the second quarter and then slipped a bit in the last half of the year to 48.4 percent. However, this figure was still above the year-earlier level, as the percentage of employed working-age women continued its secular uptrend.

Employment among teenagers declined throughout 1981, as it has every quarter since the end of 1979. These reductions stem largely from a diminishing population, but they also reflect a marked vulnerability to cyclical fluctuations. Being less skilled and lacking the work experience of adults, teenagers suffer greater employment declines in economic downturns than the other major age-sex groups. (See chart 1.) By the end of 1981, the teenage employment-population ratio had fallen nearly 3 percentage points from the fourth quarter 1980 level and more than 5 percentage points over the 2-year period.

Employment of black workers, at 9.3 million in the fourth quarter, was unchanged from a year earlier and, in fact, has fluctuated within the narrow range of 9.2 to 9.5 million since the last quarter of 1978, while the population for this group has continued to grow. As a result, the employment-population ratio for blacks declined 3 percentage points over the last 2 years, to 50.7 percent. Inadequate job growth has also affected whites, especially men, although to a considerably lesser extent. At 58.8 percent, the ratio for all whites was down slightly over the year, while their employment rose by 600,000.

The situation facing black teenagers grew bleaker in 1981, as their employment declined by 60,000 over the year to 480,000 in the last quarter. The result was a further decline in their employment-population ratio, from 23 to about 21 percent between the fourth quarters of 1980 and 1981. The ratio had been 25 percent in the late 1970's.[9] In contrast, almost half of all white teenagers were working in the last quarter of 1981.

Hispanic employment increased gradually over the year and by the fourth quarter was about 175,000 above the level of a year earlier. Gains were about equally split among men and women, while teenage employment was down slightly. However, these gains did not keep pace with the growth of the Hispanic population and their employment-population ratio declined 0.7 point during the year, to 56.9 in the last quarter.

Industry employment. During the first half of 1981, nonfarm payroll employment showed some improvement from the recessionary levels of 1980. However, employment growth slowed markedly during the third quarter. By the fourth quarter, the weakness which had been visible all year in the housing and automobile industries had clearly spread, and nonfarm employment dropped by almost half a million. (See table 5.) The Bureau of Labor Statistics' diffusion index of private nonagricultural payroll employment provides further evidence of the pervasiveness of the 1981 decline[10]. In the last quarter, job gains were registered in only one-third of the 172 industries included in the index, compared to more than three-fifths a year earlier.

Table 5. Nonagricultural payroll employment, seasonally adjusted quarterly averages, 1980–81

[Numbers in thousands]

Industry	1980				1981			
	I	II	III	IV	I	II	III	IV p
Total nonagricultural payroll employment	90,806	90,450	90,213	90,820	91,232	91,546	91,938	91,483
Goods-producing industries	26,329	25,678	25,306	25,594	25,670	25,741	25,933	25,399
Mining	999	1,017	1,012	1,051	1,091	1,006	1,148	1,170
Construction	4,527	4,381	4,319	4,385	4,398	4,345	4,273	4,226
Manufacturing	20,803	20,280	19,976	20,158	20,181	20,390	20,512	20,003
Durable goods	12,603	12,165	11,911	12,080	12,086	12,246	12,325	11,925
Lumber and wood products	736	672	671	683	681	704	696	635
Furniture and fixtures	487	471	455	463	466	483	487	472
Stone, clay, and glass products	694	663	651	658	653	657	658	633
Primary metal industries	1,217	1,156	1,080	1,124	1,138	1,144	1,142	1,088
Fabricated metal products	1,682	1,612	1,562	1,580	1,579	1,601	1,610	1,545
Machinery, except electrical	2,533	2,510	2,480	2,487	2,483	2,508	2,542	2,520
Electric and electronic equipment	2,141	2,106	2,072	2,085	2,112	2,142	2,164	2,118
Transportation equipment	1,969	1,845	1,841	1,854	1,841	1,879	1,888	1,777
Instruments and related products	708	708	708	711	712	716	726	719
Miscellaneous manufacturing industries	436	423	412	407	410	414	421	417
Nondurable goods	8,201	8,115	8,064	8,098	8,095	8,144	8,187	8,078
Food and kindred products	1,721	1,704	1,713	1,708	1,687	1,691	1,678	1,673
Tobacco manufactures	68	70	69	70	72	71	72	70
Textile mill products	874	855	838	844	839	844	851	823
Apparel and other textile products	1,285	1,288	1,259	1,253	1,243	1,257	1,274	1,248
Paper and allied products	708	694	686	692	690	693	698	698
Printing and publishing	1,258	1,256	1,257	1,265	1,272	1,282	1,295	1,301
Chemicals and allied products	1,115	1,112	1,089	1,103	1,108	1,109	1,109	1,105
Petroleum and coal products	176	194	208	209	210	212	212	210
Rubber and miscellaneous plastics products	761	731	708	725	732	751	781	733
Leather and leather products	238	233	229	231	231	232	237	229
Service-producing industries	64,479	64,772	64,907	65,227	65,562	65,805	66,005	66,084
Transportation and public utilities	5,178	5,153	5,123	5,120	5,133	5,153	5,174	5,141
Wholesale and retail trade	20,370	20,303	20,406	20,465	20,588	20,689	20,843	20,829
Wholesale trade	5,285	5,269	5,275	5,297	5,311	5,343	5,368	5,353
Retail trade	15,085	15,034	15,131	15,168	15,277	15,346	15,475	15,473
Finance, insurance, and real estate	5,104	5,142	5,189	5,237	5,281	5,324	5,355	5,361
Services	17,658	17,796	17,988	18,162	18,338	18,525	18,694	18,835
Government	16,170	16,377	16,201	16,242	16,222	16,114	15,938	15,931
Federal	2,832	3,004	2,828	2,797	2,792	2,776	2,771	2,748
State and local	13,338	13,373	13,373	13,445	13,431	13,338	13,167	13,183

p = preliminary

The economy's slow recovery from the recession of 1980, which halted before all industries had rebounded fully, was largely due to the extremely high interest rates prevailing throughout most of 1981. The major victims of the 1980 recession were concentrated in the goods-producing sector—primarily in construction and automobile manufacturing and supplier industries tied to these two industries. As the cost of borrowing remained high, these highly interest-rate sensitive industries, after showing slightly higher employment in the first part of 1981, fell to more depressed levels than those experienced in 1980. The major source of employment strength during the year was generally in industries less sensitive to rising interest rates, such as services and mining. However, in the closing months of the year, the recession had begun to adversely affect virtually all industries. The goods-producing sector was clearly the hardest hit, notably manufacturing and construction. (See chart 2.) But even the service-producing sector felt the impact of the recession, as reflected in the considerably reduced pace of employment growth for some industries and sizable declines in the usually robust retail trade industry as the year drew to a close.

Employment in construction deteriorated significantly in 1981, following steady growth in the last half of 1980 and a modest increase in the first quarter. Mortgage interest rates remained high throughout most of the year, and the resulting sharp contraction in residential construction activity gave rise to steep job declines in construction employment. Housing starts, falling below 900,000 units in the last quarter, were the lowest since 1966; building permits, which provide an indication of future construction activity, declined steadily from April to November. By the third quarter of 1981, employment in the industry had plummeted to a level that was below its July 1980 recession low, and an additional 47,000 jobs were lost in the last quarter. The job loss totaled 192,000 from April's employment high. Moreover, the situation would have been worse were it not for relative continued strength in heavy construction.

After rising 350,000 in the first three quarters of 1981, the number of jobs in manufacturing declined by 500,000 in the final quarter to 20 million, almost 1.2 million below the all-time high reached in July 1979. More than two-thirds of this decrease was in durable goods, where every industry experienced a decline in employment in the fourth quarter. By December, durable goods manufacturing employment was 11.7 million, a level below its 1980 recession low.

The hardest hit manufacturing industry was transportation equipment, where the deterioration in the job situation has continued for nearly 3 years. After reaching a high of more than 2 million workers in early 1979, more than 330,000 jobs were lost by the end of 1981. The small recovery which took place in the first part of 1981 was due to automobile buyer and dealer incentive programs such as rebates, discounts, and low-interest financing that served to temporarily boost sales; however, automobile sales virtually collapsed in the fourth quarter, forcing automobile manufacturers to slash production and layoff workers. As a result, automobile employment fell by more than 50,000 in the final quarter. These declines, in turn, meant a drop in orders for a number of other manufacturing industries, ranging from primary and fabricated metals to textiles and rubber and plastics. With reduced orders and rising inventories, sharp cutbacks in industrial production were soon evident throughout durable goods manufacturing and among nondurable goods industries as well.

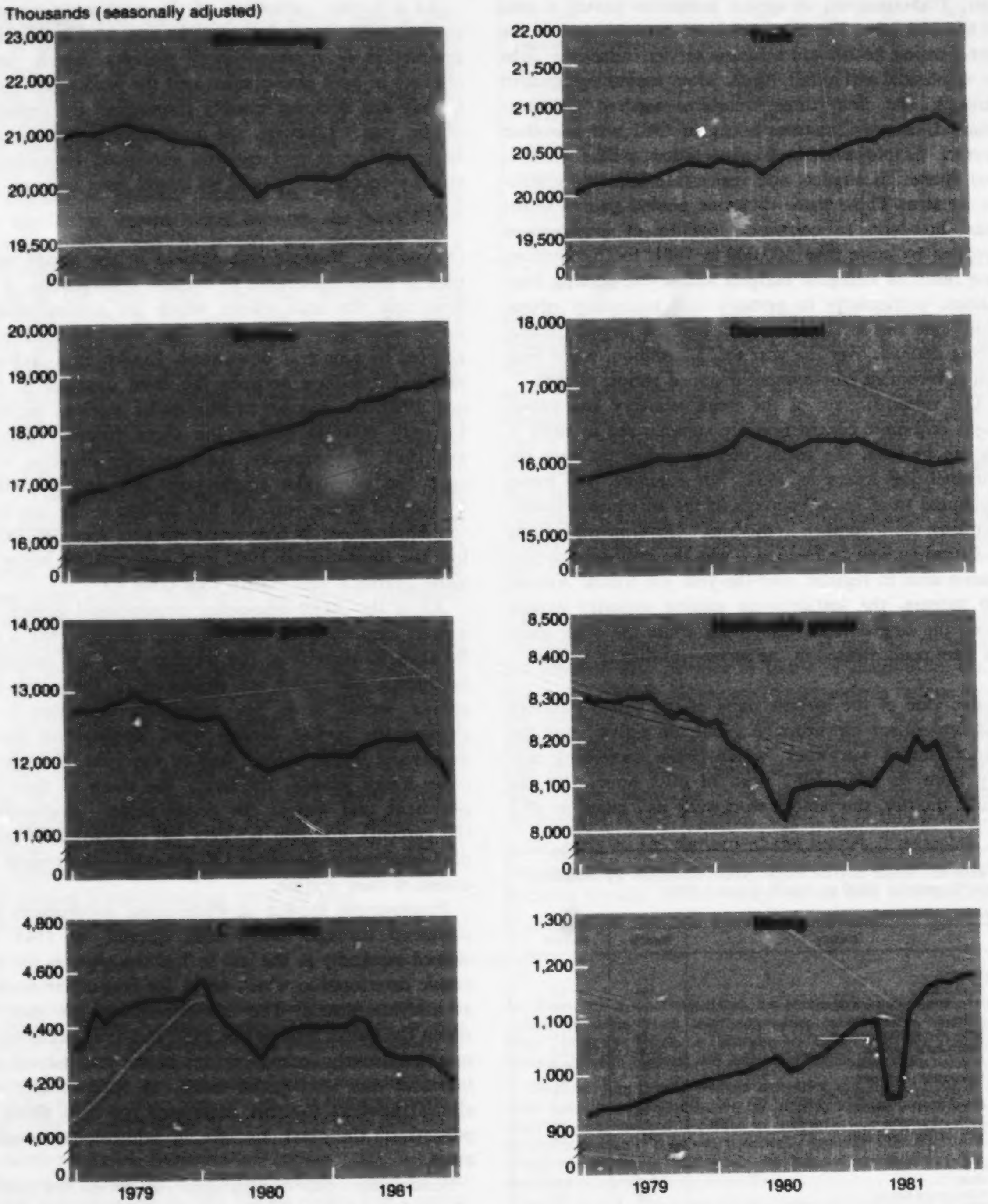
With the prolonged slump in housing activity, there were also sizable cutbacks in industries heavily dependent upon construction activity. Most notably, employment in lumber and wood products slipped significantly during the year, falling to a level 24,000 below its June 1980 recession low. Stone, clay and glass and major appliances—which are closely tied to construction activity —also witnessed significant declines over the year. (See table 5.)

Employment in nondurable goods manufacturing rose in the first 3 quarters of 1981 but then dropped sharply in the final quarter. The largest cutback occurred in food processing, which has been following a long-term downtrend. Conversely, the only major nondurable industry to post a significant increase for the year was printing and publishing; this industry had also been largely unaffected by the 1980 downturn, possibly because of its strong ties with the less-cyclically vulnerable service-producing sector.

In marked contrast to the job declines registered in construction and manufacturing, mining grew rapidly in 1981, sustaining the pattern of growth that began in the aftermath of the 1973 oil embargo. While representing slightly more than half of the employment in the industry division, the oil and gas extraction industry accounted for more than 90 percent of the job gains during the year, a reflection of the rapid expansion in exploration and development activity. Despite a slight drop in employment in the second quarter, relating to temporary losses that stemmed from a coal strike, mining industry employment rose at a faster rate than any other nonfarm industry, climbing 11.3 percent in 1981. (See chart 2.)

Employment in the service-producing sector expanded throughout 1981, more than offsetting the employment decline in the goods sector. However, as evidence that the sector is not totally immune to recessions, the rate of increase was significantly below that witnessed during the few years just prior to the 1980 and 1981 recessions. The number of jobs rose by 860,000 from the fourth-quarter 1980 level to 66.1 million at the end of

Chart 2. Nonfarm payroll employment by selected industries, 1979-81



Note: Data for November and December 1981 are preliminary.

1981. The advance was dominated by increases in the division comprising such diverse industries as legal, health, business, and educational services, hotels and other lodging, amusement and recreation, and auto repair. This amalgam of service industries posted a gain of 660,000 jobs. The increases were concentrated in the fast-growing health and business service industries. Jobs in wholesale and retail trade, after sustaining growth through the first three quarters, tapered off near yearend, as pre-Christmas hiring in 1981 was less than normal. Employment in transportation, public utilities, and finance, insurance, and real estate followed a similar pattern. These three divisions posted gains for the year, however. In contrast, government employment dropped by more than 300,000 in 1981, to 15.9 million, as a result of stringent budgets and severe staffing limitations, particularly in primary and secondary education. State and local government had the largest decline, falling 260,000 over the year to 13.2 million, while Federal government employment dropped almost 50,000.

The varied impact of the weak recovery and subsequent economic contraction are summarized in table 6. As can be seen, the goods-oriented industries were the principal job losers in 1981. For example, job losses amounted to at least 7 percent in the automobile manufacturing and lumber industries. Government—State and local as well as Federal—was the only service-producing area to register over-the-year job losses. Among job gainers, the fast-growing mining industry experienced the largest relative increase, while the other gainers were concentrated in the service-producing sector.

Hours. One of the earliest signs of the stifled recovery and subsequent downturn in economic activity was the manufacturing workweek, which began decreasing rapidly from its May 1981 peak of 40.3 hours. By the fourth quarter, the factory workweek had fallen to 39.3 hours, only 0.1 hour above its 1980 recession low. Factory overtime hours, which were largely responsible for the decline in the manufacturing workweek, had declined by 0.7 hour to 2.5 hours by the end of the year.

As a further indication of the weakening economic environment, the index of aggregate weekly hours for production or nonsupervisory workers, which reflects changes in both employment and the workweek, peaked in July and declined steadily throughout the remainder of the year.[11] Likewise, the manufacturing hours index began falling at midyear and continued to decline so that by yearend, it was at its lowest level in more than 5 years.

Table 6. Major payroll employment changes, by industry, fourth quarter 1980 to fourth quarter 1981

[Numbers in thousands]

Industry	Number	Percent
Job losers:		
Construction	−159	−3.6
Residential building construction	−32	−5.3
Lumber and wood products	−48	−7.0
Stone, clay, and glass products	−23	−3.5
Primary metal industries	−36	−3.2
Fabricated metal industries	−35	−2.2
Transportation equipment	−77	−4.2
Motor vehicles and equipment	−55	−7.4
Food and kindred products	−33	−1.9
Textile mill products	−21	−2.5
State and local government	−262	−1.9
Job gainers:		
Mining	119	11.3
Printing and publishing	36	2.8
Retail trade	305	2.0
Finance, insurance, and real estate	124	2.4
Services	663	3.7

Occupations. Because employment in the goods industries is more vulnerable to cyclical contractions, it follows that the occupations which are concentrated in these industries—blue-collar—are also more adversely affected by economic downturns. Exhibiting a decline of nearly 1.9 million between the third quarters of 1979 and 1980, the number of blue-collar workers increased by only 800,000 during the short recovery through mid-1981. Subsequently, the economic situation worsened and blue-collar employment dropped 1.0 million by the end of the year. At 30.7 million in the last quarter, employment of blue-collar workers was 200,000 below the third-quarter 1980 level and 600,000 below the same quarter a year before. (See table 4.)

All of the major blue-collar occupational groups registered declines from their second quarter 1981 levels. Because 80 percent of the workers who are operatives (excluding transport) are employed in the goods-producing sector, it is not surprising that this group showed the largest decline when employment turned downward in the second half of the year. Among the other major groups, the larger the share of their employment that was in the goods sector—craftworkers (60 percent), nonfarm laborers (40 percent), and transport equipment operatives (30 percent)—the greater the extent of their decline.

Employment growth in white-collar occupations was sustained through the second quarter of 1981 but slowed markedly in the last half of the year, as the economic deterioration which set in for blue-collar workers at midyear spread. The 850,000-million job gain between the fourth quarters of 1980 and 1981 occurred almost exclusively among persons in the professional and technical and managerial fields, as salesworkers and clerical workers together accounted for only about 10 percent of the total increase in white-collar employment.

Among the other occupational categories, the number of service workers increased by 400,000 above the fourth quarter 1980 level, while the number of farmworkers, which had been on a slow downtrend throughout the postwar period until the late 1970's, showed little movement.

The labor force

The civilian labor force grew at a slower pace in 1981 than in the late 1970's. Between the fourth quarters of 1980 and 1981, the labor force was up by 1.6 million, slightly above the increase of the previous year but down from increases of about 3 million or more in the years following the 1973–75 recession. Diminished growth has not been altogether unexpected, however. The number of persons reaching labor force age has been smaller in recent years because the baby-boom generation, now aged 20 to 30, was followed by a "baby-bust" generation. The growth in the number of women in the labor force continued, although it did slow considerably in the latter half of the year. Such growth still accounted for two-thirds of the total labor force increase. At 6.9 million in the last quarter, women accounted for about 43 percent of the work force.

Overall, the percentage of the working-age population employed or unemployed—the labor force participation rate—was up slightly in 1981 to 63.9 percent. (See table 7.) The participation of women has increased from rates slightly above 30 percent in the late 1940's to more than 52 percent in 1981, while the rates for men declined. Early postwar increases were concentrated among older women, those who had largely completed the time-consuming portion of their child-rearing responsibilities. But in the past two decades, the greatest labor force increases have occurred among women under age 35. Many of these women delayed marriage, and childbearing, to pursue careers. Even when they had children, many retained their jobs rather than leave the labor force, as in earlier times. The trend may have gotten an added push in the 1970's by a desire to maintain family buying power in the face of inflationary pressures. The labor force participation rate for women near normal retirement ages has recently turned downward, joining a long-standing trend for men.

Table 7. Labor force participation rates for selected demographic groups, annual averages, 1951–81

	1951	1961	1971	1981
Total	59.3	59.3	60.2	63.9
Teenagers, 16–19 years	52.2	46.9	49.7	55.4
Men, 20 years and over	88.2	85.7	82.1	79.0
20–24 years	88.4	87.8	83.0	85.5
25–34 years	96.9	97.5	95.9	94.9
35–54 years	96.8	96.6	95.2	93.5
55–64 years	87.2	87.3	82.1	70.6
65 years and over	44.9	31.7	25.5	18.4
Women, 20 years and over	34.0	38.0	43.3	52.1
20–24 years	46.5	47.0	57.7	69.6
25–34 years	35.4	36.4	45.6	66.7
35–54 years	39.7	46.8	52.9	64.2
55–64 years	27.6	37.9	42.9	41.4
65 years and over	8.9	10.7	9.5	8.0

The participation rate for men, down slightly to 79.0 percent between 1980 and 1981, has declined fairly steadily over the postwar years, primarily a result of the continued early labor force withdrawal among older men. For example, there was an especially large decline among those 55 to 64 years in the past decade, indicative of an improved financial ability to retire. Participation rates have actually increased for young adults, and they remained quite high (and little changed) for men in the prime working ages. The rate for teenagers had increased steadily since 1965, reaching a high of 57.9 percent in 1979, before declining in the last 2 years.

AS 1981 ENDED, the country was mired in a recession, the eighth in the post-World War II era. All recessions are separate and distinct in terms of magnitude, duration and breadth. However, this episode is unique from the previous seven by the fact that there was a rather limited recovery from its 1980 predecessor, and that two key industries—notably construction and automobile—were essentially in a continued depressed state through the recovery period. While, as of this writing, it is too early to see the end of the tunnel, it was clear at yearend that most leading economic indicators were pointing toward further deterioration and that industrial production was still heading downward. ☐

FOOTNOTES

[1] Data on labor force, total employment, and unemployment are derived from the Current Population Survey (CPS), a sample survey of households conducted and tabulated by the Bureau of the Census for the Bureau of Labor Statistics. Statistics on nonagricultural payroll employment and hours from the Current Employment Statistics Program (CES) are collected by State agencies from employer reports of payroll records and are tabulated by the Bureau of Labor Statistics. A description of the two surveys appears in the Bureau of Labor Statistics monthly publication, *Employment and Earnings.*

[2] The proportion of blacks in the "black and other" group has been declining; it was 83 percent in 1980. This has resulted from a gradual influx of Asians, particularly Vietnamese, into the U.S. labor force in the 1970's. For this reason, and because of the availability and increased reliability of data for blacks, it is not as necessary as in the past to use data for "black and other" when discussing black workers. Thus, unless otherwise stated, the term black in this article refers exclusively to the "black only" population and not to the "black and other" category, which, in addition to blacks, includes American Indians, Alaskan Natives, and Asian and Pacific Islanders.

[3] Because of movement between industries and into and out of the labor force, unemployment rates by detailed industry are difficult to interpret. For example, a decline in joblessness among workers in a particular industry does not necessarily indicate the reemployment of laid-off workers. It could mean that these workers have found work elsewhere or simply left the labor force.

[4] Data do not include the small number of workers on shortened workweeks because of material shortages and those who began or ended a job during the survey week.

[5] See Robert W. Bednarzik, "Worksharing in the U.S.: its preva-

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lence and duration," *Monthly Labor Review*, July 1980, pp. 3–12.

[6] For futher detail on this subject, see Paul O. Flaim, "Discouraged workers and changes in unemployment," *Monthly Labor Review*, March 1973, pp. 8–16, and Carol M. Ondeck, "Discouraged workers' link to jobless rate reaffirmed," *Monthly Labor Review*, October 1978, pp. 40–42.

[7] For a discussion of the employment-population ratio as a cyclical indicator, see Carol Boyd Leon, "The employment-population ratio: its value in labor force analysis," *Monthly Labor Review*, February 1981, pp. 36–45, and Julius Shiskin, "Employment and unemployment: the doughnut or the hole?" *Monthly Labor Review*, February 1976, pp. 3–10.

[8] For a discussion of the relative impact of recessions on different demographic groups, see Norman Bowers, "Have employment patterns in recessions changed?" *Monthly Labor Review*, February 1981, pp. 15–28.

[9] The employment-population ratio for black and other youth was down about 13 points over the past quarter century.

[10] For a detailed discussion of indexes of diffusion of changes in the number of employees on nonagricultural payrolls, see John F. Early, "Introduction of Diffusion Indexes," *Employment and Earnings*, December 1974, pp. 7–11.

[11] Aggregate hours is a joint measure of the change in both hours and employment. For basic industries, aggregate hours are the product of average weekly hours and production-worker or nonsupervisory-worker employment.

The role of apprenticeship

Apprenticeship is only one of the many ways in which a vocational aptitude may be gained. In most occupations, training is acquired on the job, in trade or vocational schools, in the Armed Forces, or in Federal or State training courses, or principally by 'picking up the trade'—that is, working with journeymen on a variety of jobs until proficiency is achieved. Only about one-fourth of all unions actually participate in apprenticeship regulation. Moreover, most employees who do work in apprenticeable trades have learned their trade without having served an apprenticeship. Thus, studies have estimated that as many as 80 percent of all carpenters and 30 percent of all electricians became journeymen without serving apprenticeships. These studies also show that it is more difficult to become a journeyman in the electrical, mechanical, and plumbing trades without formal training than in the carpentry, painting, and trowel trades (bricklaying, cement finishing, and so on).

—GORDON F. BLOOM AND HERBERT R. NORTHRUP
Economics of Labor Relations,
9th ed. (Homewood, Ill., Richard D. Irwin,
Inc., 1981), p. 228.

New worklife estimates reflect changing profile of labor force

The worklife expectancy of men continued to level off between 1970 and 1977, while that of women increased significantly

SHIRLEY J. SMITH

The Bureau of Labor Statistics has developed a new set of working life tables based on labor force patterns observed in 1977. On the basis of these patterns, the Bureau estimates that the average man 16 years of age can expect to spend 38.5 years in the labor force while a typical woman of that age can expect 27.7 years of labor force involvement.

Patterns of lifetime labor force attachment for both men and women are constantly changing. Comparisons of labor force participation rates from year to year suggest evolving patterns of labor force entry and withdrawal, as well as significant changes in economic activity at midlife. However, it is difficult to identify the current "lifetime pattern of labor force involvement" from these rates alone.

Working life tables were developed to isolate such lifetime patterns. The results of the model are synthetic. That is, they summarize the behavior of all age groups in the population during a given year, rather than trace the history of any one group through its lifetime. The tables estimate how frequently members of a population would enter and leave the labor force, and how long the average person would remain economically active, if rates of behavior remained as they were in the reference year.

Recent participation trends affect methodology

Of course, these rates do not remain constant over time. In fact, activity rates of men and women have changed substantially since 1970, the reference year of the Bureau's previous working life tables. Between 1970 and 1977, the entire cross-sectional profile of participation for both sexes changed. (See table 1.) Persons age 16 to 24 became increasingly active; those above age 55 showed a weakening attachment to the labor force. The participation rates of younger women showed the most remarkable change, increasing by more than one percentage point per year. The rate for those 25 to 34 increased by 14.5 percentage points in just 7 years. At the same time, rates of older persons were dropping, with that of men 60 to 64 declining by 12.1 percentage points.

In the prime working ages, the labor force attachment of men slackened somewhat, while that of women increased substantially. The net effect was a decline in the mean age of labor force members, reinforcing the drop related to the age structure of the population itself. The magnitude and character of these changes have rendered the 1970 worklife estimates obsolete.

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Table 1. Civilian labor force participation rates by sex and age, annual averages, 1970 and 1977

Age	Men		Change	Women		Change
	1970	1977	1970-77	1970	1977	1970-77
16-19	56.1	61.0	4.9	44.0	51.4	7.4
20-24	83.3	85.7	2.4	57.7	66.5	8.8
25-34	96.4	95.4	−1.0	45.0	59.5	14.5
35-44	96.9	95.7	−1.2	51.1	59.6	8.5
45-54	94.2	91.2	−3.0	54.4	55.8	1.4
55-59	89.5	83.2	−6.3	49.0	48.0	−1.0
60-64	75.0	62.9	−12.1	36.1	32.9	−3.2
65 and over	26.8	20.1	−6.7	9.7	8.1	−1.6

Moreover, there is now much evidence that adults, particularly women, move in and out of the labor force repeatedly during their lifetimes. This movement contradicts a basic assumption of conventional worklife methodology, that workers remain in the labor force continuously from age of entry to age of final withdrawal. The growing conflict between model and reality appears to have adversely affected estimates published for the years 1950–70.

The new worklife estimates for 1977 are drawn from a dynamic new model known as the increment-decrement working life table. This model is markedly different from the original (or conventional) worklife technique used to produce the estimates previously published by the Bureau. The new values are not entirely comparable with previously published figures,[1] because they reflect not only changes in the behavior of American adults, but also several fundamental changes in modeling procedures.[2]

The key feature of this model is that it rests on observed probabilities of movement into and out of the labor force—a flow variable, rather than labor force participation rates, which are a measure of stocks. In the new tables, persons are assumed to pass through life, at each age facing the "probabilities of transition" observed for that age group in the base population during the reference year. Worklife expectancies summarize the length of time the average adult would spend in the labor force during his or her lifetime, if these probabilities did not change. Rates of labor force accession and separation summarize the volume of labor turnover which would occur within each age group if mobility patterns remained constant.

Unlike previously published estimates for women, the new tables do not spell out expectancies separately by marital or parental status. Such tables imply a fixed status for life. Instead, the new model presents a summary table for all women. The transition probabilities underlying this table reflect the impact of normal life cycle changes on labor force attachment at each age.

For purposes of comparison, 1970 estimates have been reestimated using the new increment-decrement methodology. Selected revised values are included in this report.

New estimates and trends in worklife expectancy

Tables of working life for 1977, estimated by the increment-decrement method, indicate that given a continuation of mortality and labor force behavior observed at that time, a boy born in 1977 was likely to spend 37.9 years in the labor force and a girl, 27.5 years. (See table 2.) Those surviving to age 16 would have slightly higher average worklife expectancies—38.5 and 27.7 years, respectively. At age 50, the average man could anticipate 11.7 more years of labor force involvement, the average woman, 7.5 years.

Within any age group, persons currently active have a higher worklife expectancy than those not in the labor force. Although previous studies have hinted at this relationship, the new estimates for the first time spell out the magnitude of the differential. Among teenagers it is relatively small; most are likely to enter and leave the labor force repeatedly before settling into adult roles. However, at midlife the active and inactive groups are no longer so similar. For those not in the labor force, the probability of reentry declines with age. At age 45 the active group is expected to work about 4 years longer than its inactive counterpart.

Historic comparisons of the worklife index are impeded by the fact that patterns of labor force attachment have changed, forcing a revision in methodology. During the first half of this century, when worklives tended to be more continuous, the conventional model gave relatively unbiased estimates of their duration. However, as work patterns became increasingly irregular after World War II, the quality of the estimates declined. The problem was greatest for groups having high rates of labor turnover. For such groups, the conventional model tended to underestimate the size of the labor force, and to overstate the average worklife duration. Estimates for women workers were especially tenuous,

Table 2. Worklife expectancies of the population and of active and inactive persons by age and sex, 1977

[In years]

Age	Men			Women		
	Total	Active	Inactive	Total	Active	Inactive
At birth	37.9	—	37.9	27.5	—	27.5
16	38.5	39.6	38.1	27.7	28.8	27.4
20	36.8	37.3	35.9	26.0	26.7	25.2
25	33.4	33.7	32.0	23.0	23.7	21.7
30	29.2	29.3	27.2	19.9	20.9	18.2
35	24.7	24.9	21.7	16.8	17.9	14.8
40	20.3	20.4	16.9	13.7	14.9	11.4
45	15.9	16.2	12.0	10.5	11.9	8.0
50	11.7	12.2	7.2	7.5	9.3	4.9
55	7.8	8.5	3.6	4.8	6.8	2.5
60	4.3	5.2	1.9	2.5	4.4	1.2
65	1.9	3.4	1.1	1.1	3.1	.6
70	.9	2.6	.6	.5	2.4	.2

Table 3. Changes in life and worklife expectancies, by sex, 1900–77

Worklife model, sex, and year	Life expectancy		Worklife expectancy			Inactive years (total population)		Percent of lifespan active		Ratio of female to male worklife expectancies
			All persons		Workers					
	At birth	At age 20	At birth	At age 20	At age 20	From birth	From age 20	From birth	From age 20	At age 20
Men										
Conventional model:										
1900	46.3	42.2	32.1	37.8	39.4	14.2	4.4	69.3	89.6	(1)
1940	61.2	48.6	38.1	39.7	41.3	23.1	7.1	62.3	84.8	(1)
1950	65.5	48.9	41.5	41.4	43.1	24.0	7.5	63.4	84.7	(1)
1960	66.8	49.6	41.1	40.9	42.9	25.7	8.7	61.5	82.5	(1)
1970	67.1	49.6	40.1	39.4	41.5	27.0	10.2	59.8	79.4	(1)
Increment-decrement model:										
1970	67.1	49.6	37.8	37.3	38.0	29.4	12.3	56.3	75.2	(1)
1977	69.3	51.3	37.9	36.8	37.3	31.5	14.5	54.7	71.7	(1)
Change:										
1900–77[2]	23.0	9.1	5.7	–1.0	–2.1	17.3	10.1	–14.8	–17.9	(1)
1970–77[3]	2.2	1.7	0.1	–0.5	–0.7	2.1	2.2	–1.7	–3.5	(1)
Women										
Conventional model:										
1900	48.3	43.8	6.3	(4)	(4)	42.0	(4)	13.0	13.7	(4)
1940	65.7	50.4	12.1	11.9	(4)	53.6	38.5	18.4	23.6	30.0
1950	71.0	53.7	15.1	14.5	(4)	55.9	39.2	21.3	27.0	35.0
1960	73.1	55.7	20.1	18.6	37.3	53.0	37.1	27.5	33.4	45.0
1970	74.8	56.7	22.9	22.0	40.6	51.9	34.7	30.6	38.8	55.8
Increment-decrement model:										
1970	74.8	56.7	22.3	21.3	22.1	52.4	35.4	29.8	37.6	57.1
1977	77.1	58.6	27.5	26.0	26.7	49.7	32.6	35.7	44.4	70.7
Change:										
1900–77[2]	28.8	14.8	21.1	(3)	(3)	7.7	(3)	22.5	30.7	(4)
1970–77[3]	2.3	1.9	5.0	4.7	4.6	–2.7	–2.8	5.6	6.8	13.6

[1] Not applicable.
[2] Based on conventional model estimates for 1900 and increment-decrement model estimates for 1977.
[3] Based on the increment-decrement model.
[4] Data not available.

growing increasingly biased from 1950 to 1970. Only the 1970 values have been reestimated using the increment-decrement model. Conventional estimates for 1950 through 1970 seriously overstate work durations for women in the labor force during that period. When these data are excluded, however, the results of previous models give a credible picture of the evolution of labor force attachments in this century. (See table 3.)

In 1900, the life and worklife expectancies of men were very similar. At age 20, the average man could expect to spend only 4.4 years outside of the labor force. During the next 77 years, men's life span increased by 23 years, with the bulk of the increase—about 17 years—going into nonlabor force activities. The growth in worklife expectancy was less than 6 years. Between 1970 and 1977, virtually the entire increase in life expectancy (2.2 years) went to nonlabor force activities. At the turn of the century, the average man spent 69 percent of his lifetime in the labor force, but by 1977, this figure had dropped to about 55 percent.

In contrast, the formal worklife of women has increased dramatically during this century. In 1900, women averaged little more than 6 years of formal labor force involvement. Over the next 77 years, their average life span increased by almost 29 years, of which 21 were allocated to labor market activities. The shift has been especially pronounced in recent years. Between 1970 and 1977, worklife durations rose by 5 years, while life expectancy increased by only 2.3 years. This was accomplished by a reallocation of time—nearly 3 years per woman—from home to labor market activities. At the turn of the century, women spent an average of 13 percent of their lifetimes in the labor force, compared to nearly 36 percent in 1977.

Because of these countervailing trends, the worklife durations of men and women have been converging. It is estimated that in 1940, the average expectation of working life for young women was just 30 percent of that for men. By 1970, it was 57 percent and by 1977, it represented 71 percent that for men. While these figures do not take account of differences in hours worked, an important distinction, they do illustrate how fundamentally the roles of men and women have changed.

Measures of labor force mobility

A second function of the working life table is to quantify movements into and out of the labor force. The conventional model derived aggregate estimates of these flows from age-to-age comparisons of labor force participation rates. The results, taken to describe net flows, gave little insight into the process of labor turnover. The new model rests on observed probabilities of labor force entry and exit at each age. It estimates both net and gross rates of mobility, and provides information on the frequency and timing of these movements in the average person's life.

The new estimates indicate that most people establish their first contact with the labor force as teenagers. In the 1977 life table population, half of all young men had become members of the labor force by age 16.4. (See table 4.) The median age of first entry for women was marginally higher, 16.6 years. Because entries and reentries occur at all ages, the mean age of male labor force entrants was 26.9 years, and that of female entrants was even higher, 28.7 years.

Given a continuation of the work life patterns observed in 1977, it is estimated that the average man would enter the labor force 3 times in his lifetime. The average woman would do so 4.5 times. Men are likely to complete the phase of intermittent work more quickly than women. At age 25, they would anticipate an average of just 1.1 more labor force entries, while women could look forward to 2.7 additional entries.

According to the 1977 tables, men would average 12.6 years of labor force involvement for every entry during their lifetime. The average duration per entry for women was expected to be less than half this figure, or 6.1 years. Because most men were firmly attached to the job market by age 25, they would spend an average of 29.1 years in the labor force for every entry beyond that age, but the typical woman would engage in several shorter periods of activity, averaging just 8.6 years per entry.

Table 4. Selected indexes of working life by sex, 1970 and 1977

Worklife measure	Men		Women	
	1970	1977	1970	1977
Median age at first labor force entry	16.5	16.4	16.8	16.6
Mean age of all first and repeat labor force entrants	26.6	26.9	29.2	28.7
Worklife expectancy (in years):				
At birth	37.8	37.9	22.3	27.5
At age 25	34.4	33.4	19.0	23.0
Number of labor force entries per:				
Person born	2.9	3.0	4.6	
Person age 25	1.2	1.1	2.8	4.5
				2.7
Expected duration in labor force per entry remaining (in years):				
At birth	13.0	12.6	4.8	6.1
At age 25	29.4	29.1	6.8	8.6
Number of voluntary exits from labor force per:				
Person born	2.6	2.7	4.5	4.4
Person age 25	1.9	2.0	3.3	3.3
Percent of workers expected to die while in the labor force	36.3	27.0	10.8	9.5
Mean age of all persons leaving the labor force:				
Total first and repeat exits	38.7	38.7	33.5	33.9
Voluntary withdrawals	36.1	37.0	32.9	33.4
Deaths of workers	57.3	55.6	58.1	56.3
Median age of persons leaving labor force at age 50 and above	65.0	63.4	61.4	60.6

Table 5. Population-based rates of labor force accession and separation by age and sex, 1977

[Per 1,000 persons in the stationary population]

Age	Accessions		Separations		Net flow	
	Men	Women	Men	Women	Men	Women
16–19	211.6	207.2	124.3	127.9	87.3	79.3
10–24	136.3	158.3	93.9	142.0	42.5	16.2
25–29	54.4	109.6	38.6	116.0	15.8	–6.5
30–34	23.8	88.4	23.0	84.1	0.8	4.3
35–39	14.9	75.2	17.6	73.5	–2.7	1.7
40–44	15.5	66.3	21.6	69.0	–6.1	–2.7
45–49	16.4	57.9	28.2	68.1	–11.8	–10.2
50–54	17.1	46.8	37.1	63.7	–20.0	–16.9
55–59	19.1	37.4	59.3	66.2	–40.2	–28.8
60–64	30.8	32.0	113.1	77.8	–82.3	–45.8
65–69	44.5	27.8	92.9	52.2	–48.4	–24.4
70–74	35.7	16.1	56.3	27.1	–20.6	–11.1

Working life tables show two forms of labor force withdrawal: voluntary separation and death. Given the work and mortality patterns of 1977, the average young man could expect to leave the labor market voluntarily 2.7 times. About 27 percent of men would die before reaching retirement. The average young woman was likely to leave the labor force voluntarily 4.4 times, and fewer than 1 in 10 were likely to die before retiring.

Because the age distribution of labor force withdrawals is bimodal, with heavy outflows at both ends of the age spectrum, the mean age of all exits (38.7 years for men and 33.9 years for women) tells us little about final retirement. It is very difficult to identify retirement norms, because the retiree can and often does reenter the labor force. However, the 1977 tables indicate that among persons leaving the labor market at or beyond the age of 50, the life table median age of exit was 63.4 years for men, and 60.6 years for women. It appears that the age at retirement has dropped for both sexes since 1970. This may help to explain the concurrent drop in proportions likely to die as members of the labor force.

At the aggregate level, the new tables show a much greater volume of movement in and out of the labor force than has been quantified in the past. Although men and women in their teens have roughly comparable rates of labor force entry and withdrawal, the retention of young men exceeds that of women in this age group. (See table 5.) The pace of labor force entries for both sexes slows by age 20. However, as men begin to settle into their role as workers—as evidenced by a drop in their separation rate—female labor force exits actually rise. By age 25, the share of all men in the labor force substantially exceeds that of all women. Because a larger proportion of the female population remains outside the job market but may enter at any time, the accession rates of women are greater than those of men throughout midlife. Net retirements peak between the ages of 60 and 64. Thereafter, men are more likely than women to reenter the labor force. The rise in male entry rates at age 60 highlights the fact that retirement is often a temporary state.

The separation rates shown in table 5 are expressed as a ratio of withdrawals to population. A more common form is the ratio of withdrawals to labor force members. (See table 6.) Changing the denominator in this way has little effect on the rates of separation for prime working-age men, because most members of this population are also in the labor force. However, because of the disparity between population and labor force counts for other groups, the change to a labor force base inflates the rates of these other groups. This gives a better illustration of their relative propensities to leave the job market. Among persons working in the prime ages, women are as much as five times more likely than men to withdraw from economic activity. Only at age 65 and above do working men show a greater propensity to retire.

Trends in mobility rates

The pace of net labor force entries for young people increased markedly between 1970 and 1977. (See table 7.) Although the gross accession rates of teenagers rose slightly during this period, they had less bearing on the net influx than did the drop in labor force withdrawals. As young people showed increasing reluctance to leave the job market, the process of labor force expansion with age became more efficient. At the same time, the pace of net labor force withdrawals among persons age 45 and older accelerated. The separation rates of men 45 to 64 increased sufficiently to outweigh (and perhaps to have caused) slight increases in labor force entries.

Table 6. Labor force based rates of separation by age and sex, 1977

[Per 1,000 workers in the stationary labor force]

Age	Men	Women
16–19	254.7	290.5
20–24	125.0	226.3
25–29	42.7	182.9
30–34	24.3	134.7
35–39	18.5	112.8
40–44	22.9	105.3
45–49	30.5	107.7
50–54	42.1	110.8
55–59	74.6	136.2
60–64	209.7	251.9
65–69	376.2	369.7
70–74	441.9	388.7

Table 7. Comparison of labor force mobility rates by age and sex, 1970 and 1977

[Life table rates per 1,000]

Sex and age	Accessions in population		Separations in labor force		Net flows in population	
	1970	1977	1970	1977	1970	1977
Men:						
16–19	191.9	211.6	299.0	254.7	66.9	87.3
20–24	145.7	136.3	160.6	125.0	41.7	42.5
25–29	72.0	54.4	47.1	42.7	32.4	15.8
30–34	27.6	23.8	20.5	24.3	8.0	0.8
35–39	14.8	14.9	20.6	18.5	–5.1	–2.7
40–44	13.5	15.5	24.3	22.9	–9.5	–6.1
45–49	14.6	16.4	27.6	30.5	–11.0	–11.8
50–54	14.5	17.1	35.3	42.1	–17.3	–20.0
55–59	18.8	19.1	58.7	74.6	–31.1	–40.2
60–64	32.2	30.8	137.5	209.7	–64.9	–82.3
65–69	38.2	44.5	264.2	376.2	–75.1	–48.4
70–74	36.7	35.7	343.1	441.9	–38.1	–20.6
Women:						
16–19	204.1	207.2	455.7	290.5	54.3	79.3
20–24	164.6	158.3	321.0	226.3	14.5	16.2
25–29	102.2	109.6	231.2	182.9	–7.6	–6.5
30–34	90.7	88.4	206.3	134.7	–1.1	4.3
35–39	83.7	75.2	162.6	112.8	7.2	1.7
40–44	72.3	66.3	132.7	105.3	4.7	–2.7
45–49	60.3	57.9	121.9	107.7	–2.9	–10.2
50–54	49.7	46.8	115.4	110.8	–8.7	–16.9
55–59	43.3	37.4	131.5	136.2	–17.4	–28.8
60–64	38.9	32.0	200.8	251.9	–33.0	–45.8
65–69	29.4	27.8	308.9	369.7	–33.4	–24.4
70–74	18.0	16.1	402.8	388.7	–19.9	–11.1

The increased frequency of retirement in these age groups contributed to a drop in participation rates.

The situation for women was more complex. They too showed a rise in net labor force separations between the ages of 45 and 64. However, the increased net outflow of those 45 to 54 was evidence of a tightening, rather than a loosening of female labor force attachments. Below the age of 55, working women showed a drop in propensity to leave the job market. The slowdown of youthful separations limited the size of the labor reserve from which to draw older entrants. Hence, entries at midlife also declined. The decrease in labor turnover led to higher participation rates for women 45 to 54. Nonetheless, the share of women attached to the labor force, and at risk of leaving, had increased. Between 1970 and 1977, the ratio of withdrawals to population increased, and with it net labor force losses for women in this age range. Only among women over 55 is there evidence that intentions to retire were becoming stronger. Within this group, an increase in separation rates was accompanied by a drop in rates of labor force reentry.

THE WORKLIFE EXPECTANCIES of men and women in the United States have been converging since the end of World War II. This trend accelerated between 1970 and 1977, primarily because of the strengthening of female labor force attachments. Although the average worklife duration of men remained nearly constant, that for women increased by about 12 years. There remained significant differences in time allocation by sex; women were far more likely than men to withdraw from and reenter the labor force at midlife. Nevertheless, by 1977, women spent an average of 70 percent as many years in the labor force as did men.

The new worklife model quantifies a substantial flow of persons into and out of the labor force for both sexes at every age. The pace of entries for teenagers increased between 1970 and 1977. For men 20 to 34, and for most women above age 20, entries actually slowed. However, a greater drop in withdrawals brought about the net expansion of the labor force seen as increased participation rates for many age groups during this period.

The complete increment-decrement working life tables for men and women, 1970 and 1977, are available upon request from the Bureau of Labor Statistics and will appear in reprints of this article. □

FOOTNOTES

[1] Previous BLS publications on this subject include Howard N Fullerton, Jr. and James J. Byrne, "Length of working life for men and women, 1970," *Monthly Labor Review*, Feburary 1976, pp. 31–35; Howard N Fullerton, Jr., "A new type of working life table for men," *Monthly Labor Review*, July 1972, pp. 20–27; Howard N Fullerton, Jr., "A table of expected working life for men, 1968," *Monthly Labor Review*, June 1971, pp. 49–55; Stuart H. Garfinkle, *Work life expectancy and training needs of women*, Manpower Report No. 12 (Bureau of Labor Statistics, 1967); Stuart H. Garfinkle, "Table of working life for men, 1960," *Monthly Labor Review*, July 1963, pp. 820–23; Stuart H. Garfinkle, *The length of working life for males, 1900–60*, Manpower Report No. 8 (Bureau of Labor Statistics, 1963); Stuart H. Garfinkle, *Tables of working life for women, 1950*, Bulletin 1204 (Bureau of Labor Statistics, 1957); and Seymour L. Wolfbein and Harold Wool, *Tables of working life: the length of work life for men*, Bulletin 1001 (Bureau of Labor Statistics, 1950).

[2] They are comparable with estimates published by Robert Schoen and Karen Woodrow in "Labor Force Status Life Tables for the United States, 1972," *Demography*, August 1980, pp. 297–322. The technical details of the increment-decrement model are described in a forthcoming BLS report. For other discussions of multistate working life tables, see Jan Hoem and Monica Fong, "A Markov Chain Model of Working Life Tables," Working Paper 2 (Laboratory of Actuarial Mathematics, University of Copenhagen, 1976), and Frans Willekens, "Multistate Analysis: Tables of Working Life," *Environment and Planning*, Vol. 12, pp. 563–88.

A note on communications

The *Monthly Labor Review* welcomes communications that supplement, challenge, or expand on research published in its pages. To be considered for publication, communications should be factual and analytical, not polemical in tone. Communications should be addressed to the Editor-in-Chief, *Monthly Labor Review*, Bureau of Labor Statistics, U.S. Department of Labor, Washington, D.C. 20212.

A centennial view

The AFL and a national BLS: labor's role is crystallized

From the labor federation's first convention in 1881 to the establishment of the Labor Department in 1913, relations between the union movement and the BLS often were influenced by the needs of the times and by the personalities of Samuel Gompers, and Commissioners Carroll Wright and Charles Neill

JOSEPH P. GOLDBERG AND WILLIAM T. MOYE

The American trade union movement, which last year celebrated the centennial of its founding, and the Bureau of Labor Statistics, which soon will observe its own 100th anniversary, grew up together, sometimes in confrontation, but more often in mutual—though distant—respect. The relationship between the American Federation of Labor and the Bureau was affected both by the needs of the times and by the personalities of the leaders, AFL President Samuel Gompers and BLS Commissioners Carroll D. Wright and Charles P. Neill.

This article reports on some of the common and divergent interests of the two organizations, from their beginnings until 1913, when BLS became part of the present Department of Labor.

Campaign for a bureau

The convention in 1881 of the Federation of Organized Trades and Labor Unions of the United States and Canada, which marks the centennial beginning of the AFL–CIO, included in its statement of principles and action a call for a national Bureau of Labor Statistics:

> ". . . we recognize the wholesome effects of a Bureau of Labor Statistics as created in several States, and we urge upon the Congress the passage of an act establishing a national Bureau of Labor Statistics, and recommend for its management the appointment of a proper person identified with the laboring classes of the country."[1]

Earlier, the short-lived National Labor Union had called for a Department of Labor in 1867. By 1878, when the Knights of Labor called for national and additional State bureaus of labor statistics, Massachusetts (1869), Pennsylvania (1872), Missouri (1876), and Ohio (1877) had established such bureaus.[2]

The efforts of the labor organizations, and the growing awareness of the national political parties of the potential governmental influence of labor and the socio-

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economic effects of industrial growth, culminated in the establishment of a Bureau of Labor within the Department of Interior in 1884. The uncertainty of Federal policies during this period resulted in metamorphoses of the agency as an autonomous, but non-Cabinet-level Department of Labor from 1888 to 1903; combination with other agencies in the new Cabinet-level Department of Commerce and Labor in 1903; and ultimately transference to the new Department of Labor in 1913.

Samuel Gompers, along with other union officials, strongly supported the establishment of a national Bureau in the Senate hearings on Capital and Labor in 1883. He felt that there had been excessive pleading of ignorance by Congress of workers' conditions to justify Congressional inaction on labor matters. A national Bureau "would give our legislators an opportunity to know, not from mere conjecture, but actually, the condition of our industries, our production, and our consumption, and what could be done by law to improve both [sic]." He cited the useful role of existing State statistical agencies as exemplified by a recent investigation of factory working conditions by the Massachusetts Bureau of Labor under the direction of Carroll D. Wright.[3]

Wright also appeared as an expert witness at the hearings, providing a look at such a bureau's role, which largely paralleled Gompers' view. He had administered the State bureau "as a scientific office, not as a Bureau of agitation or propaganda, but I always take the opportunity to make such recommendations and draw such conclusions from our investigations as the facts warrant." He stressed the need for Federal "investigations into all conditions which affect the people, whether in a moral, sanitary, educational, or economic sense," and thus "add to the educational forces of the country a sure and efficient auxiliary." He saw the resultant statistical progress of the Nation as indicating "its great progress in all other matters."[4] This background and philosophy were major factors in Wright's subsequent appointment as U.S. Commissioner of Labor.

In 1884, backed by the then powerful Knights of Labor and the newly organized Federation, the establishment of a national Bureau was part of both parties' platform.[5] In that same year, overwhelming majorities in both houses of Congress voted to establish the Bureau of Labor in the Department of the Interior. Approved by President Chester Arthur on June 27, the action provided for a Commissioner of Labor appointed by the President for a 4-year term. The Commissioner's mission was to "collect information upon the subject of labor, its relation to capital, the hours of labor and the earnings of laboring men and women, and the means of promoting their material, social, intellectual and moral prosperity." After considering several candidates, President Arthur finally appointed Wright, whom the Senate confirmed about 6 months after the act's passage.[6]

Wright swiftly established professionalism and impartiality in the national Bureau, as he had in Massachusetts. Striving to obtain labor interest, he invited Gompers and other delegates to visit the Bureau during the 1885 Federation convention. Gompers had known Wright for years, and had long been actively interested in the role of government labor agencies. The two men had previously discussed the plans and methods of the newly established New York State Bureau of Labor Statistics. Their meeting left mutual favorable impressions.[7] The Bureau's value was further confirmed by the Commissioner's first annual report, a comprehensive treatment of the causes of the depression of 1882–86. The study was included in Gompers' periodic references to the intensification of the displacement of manual labor by machinery over the years.[8] While the report noted the advantages of mechanization, it also asserted that the effect of the temporary displacement of labor was to assist "in crippling the consuming power of the community."[9] Among the remedies suggested for coping with the depression, Wright included some general proposals suggesting that capital and labor "each shall treat with the other through representatives" in disputes, and that "the party which declines resort to conciliatory methods of arbitration [is] morally responsible for all ill effects growing out of the contest."[10]

The growing status of the Bureau, and a campaign by the still powerful Knights of Labor resulted in the transformation of the Bureau in 1888 into an independent Department of Labor, without Cabinet status. Reflecting Wright's concerns, the enabling act specifically called for studies of: the domestic and foreign costs of production of dutiable goods for the ongoing tariff debates, national trade and industrial production, the causes and circumstances of strikes, and other special topics. The basic functions of the agency had not changed, but for 15 years it was more independent. Moreover, Congress, in a separate statute relating solely to railroad disputes (Arbitration Act of 1888), had authorized the President to designate the Commissioner of Labor, with two other *ad hoc* commissioners, to act as a board of inquiry in such disputes. This investigatory provision was used only once—during the aftermath of the Pullman strike of 1894.[11]

Gompers and Wright

Although the AFL had not pressed for an independent labor department, it maintained a keen interest in the work of the agency. Gompers' thoughts on the development and expansion of information on the status of workers, labor-management relations, and the statistical supports for these developments, were expressed regularly during Wright's stewardship. He requested studies that would explore "the influence of the labor organizations upon the moral and national welfare of the wage earners in particular, and the whole community in general." Increased contact between the Department of Labor and State bureaus, according to Gompers, would achieve greater uniformity, simultaneous investigation, and assistance by the States.[12]

Asked to comment on the forthcoming 1890 census, Gompers called for inclusion of the number of unemployed, and the duration of their unemployment.[13] Gompers endorsed the establishment of a permanent Census Bureau in the Department of Labor, citing Wright's performance in Massachusetts.[14]

By 1893, there were a national Department of Labor and 32 State Departments of Labor and Bureaus of Labor Statistics, with factory inspectors in 19. Gompers could cite these as the results of successful labor efforts in obtaining measures which "a few years ago were regarded as chimerical and useless expenditures of public money [which] have come to be looked upon as a prime necessity to the proper conduct of governmental affairs." He also suggested that the men appointed as administrators should be sympathetic to the laws enacted and should not be subject to political change. Furthermore, he proposed that the U.S. Department of Labor follow the example of its British counterpart, by publishing a regular journal or bulletin which would provide information on existing industrial and other working conditions.[15] (In 1895, the Bureau began publishing a bimonthly *Bulletin*, a forerunner of the *Monthly Labor Review.*)

Congress was soon to authorize the establishment of the Bulletin of the Department of Labor in response to an AFL proposal, which drew conditional support from Wright. By endorsing the proposal he obtained congressional approval for departmental independence from Congress in the preparation and publication, and the opportunity to deal with current issues of vital importance, "rather than theoretical or debatable matters."[16]

Direct requests from labor organizations to the Department of Labor were infrequent. However, proposals which Wright circulated to the unions did cause Gompers to react. He advised the Department to conduct a study of the padrone system, publish abstracts of government contracts so that unions could check on enforcement of the 8-hour law, and he opposed a proposal for a census of unions.[17] These suggestions were met expeditiously.[18] Gompers duly noted Commissioner Wright's response at the annual AFL convention.[19]

While opposed to a census of unions, Gompers had only limited success in persuading the affiliated unions to provide information to the AFL which could be used to reflect the status of membership, finances, and support recognition for the AFL. This only made him more alert to Department of Labor reports on the subject, as he responded quickly to the release of the 10th Annual Report on strikes, "which sets forth clearly that in those States or localities, the industries in which the workers were organized, the largest numbers of successes were secured and concessions granted."[20] When Wright found that unions did not always cooperate in investigations and studies, Gompers urged cooperation. "Let there be light," he wrote, "confident that impartial investigations create numberless sympathizers in our great cause."[21]

Labor-management disputes

Wright and Gompers played prominent roles in two landmark labor-management disputes during this period. The investigative reports and recommendations on the Pullman dispute in 1894 and the anthracite coal strike in 1902 bore the imprint of Wright's evolving awareness of the importance of labor organization and its capacity to balance employer domination and achieve stability and continuity through agreement. Gompers could appreciate the fair treatment accorded the labor position in these reports, trailblazing in an era of employer opposition to incipient union organization. But he was against the recommendations for legislation for government involvement in strikes.

During the Pullman dispute, marked by Presidential use of Federal troops and injunction, the U.S. Strike Commission, with Wright as chairperson, was established by President Grover Cleveland. This was only after the failure of the strike by the American Railway Union led by Eugene Debs. The commission was established as an investigative body under the Act of 1888. Gompers, along with Debs and others, appeared before the commission. During the hearings, Wright asked Gompers whether sympathetic strike action such as that of the Pullman strike was justifiable when it could "paralyze, to any degree, the commercial industry of the country." Gompers replied, "I believe that labor has the right—the natural as well as the inherent right to endeavor to improve its condition . . . If industry or commerce is incidentally injured it is not their fault; the better course and the most reasonable course would be for employers to grant the reasonable requests that labor usually makes and thus avert the disaster of commerce or industry that you have mentioned." The social losses of widespread unemployment, both persistent and intermittent, were greater than disadvantages from strikes, he insisted, citing Wright's earlier reports. To Wright's queries regarding legislation for arbitration, Gompers expressed opposition, fearing it would lead to compulsory arbitration, with labor at a disadvantage.[22]

The recommendations of the Wright-chaired commission cited the quasi-public nature of railroad corporations as permitting the exercise of congressional authority over strikes in protecting the public. It urged employers to recognize unions, stressing that their interests were reciprocal, though not identical. A permanent commission was proposed to investigate and make recommendations in disputes having a major impact on the public, with enforcement by the courts. It was advised that yellow dog contracts be outlawed.[23]

Gompers eloquently praised the commission's report, although he implicitly disagreed about special legislation for mediation and arbitration in the railroad industry. He wrote, "Whatever may be the ultimate result of U.S. interference between the railroad managers and the railroad laborers of this country, we have confidence that none today will refuse to bestow a generous meed of praise on Carroll D. Wright and his companion commissioners for their lucid and conscientious report on the Chicago strike of 1894."[24]

The commission's recommendations became the basis for the consideration of legislation to deal with disputes having a major impact on the public. Ultimately, the result was to revise the 1888 statute by the Erdman Act of 1898, applicable to the railroads, providing for mediation, and for arbitration on request. The Commissioner of Labor and the Chairman of the Interstate Commerce Commission were designated as mediators. Yellow dog contracts were prohibited, but this provision was later voided by judicial decision.[25]

President Theodore Roosevelt's handling of the anthracite coal strike of 1902 contrasted with the Pullman situation. Wright and Gompers helped to ensure impartiality on the part of the Federal Government in the investigation of the ongoing strike, the dispute resolving machinery, and the resultant findings and recommendations.

At the President's request, Wright personally investigated the dispute. He also acted as intermediary between Roosevelt and Gompers as to means of settling the dispute. Wright prepared a well-received report. Subsequently, with the United Mine Workers willing to accept arbitration, Roosevelt prevailed on the mine operators to cooperate, and a commission was appointed. Wright was a member and recorder of the commission, and his earlier recommendations were apparent in the commission's award, which settled the strike. A side effect of the commission's role was abortive congressional consideration of a so-called national arbitration bill, which Gompers feared would lay the groundwork for compulsory arbitration. As he stated before the 1902 AFL Convention, Gompers believed that "the men of organized labor want arbitration, but only arbitration as a last resort after conciliation has absolutely failed, and then arbitration only, voluntarily entered into by both the organized workers and employers, the award voluntarily and faithfully adhered to by both sides."[26]

Department of Commerce and Labor

The labor effort to obtain a Cabinet-level Department of Labor was not a primary concern of the AFL for much of Wright's stewardship. This issue was only articulated as the pressure for a Department of Commerce and Industry representing business needs intensified in the late 1890's. Raising the Department of Labor to Cabinet-level status was proposed in a bill in 1894, and discussed in an article in the *American Federationist* entitled "Should the Commissioner of Labor be Made a Cabinet Officer?" The writer, who responded to Wright's opposition to the bill on the grounds that it would politicize the office, called attention to the growth in the importance of labor and labor-management developments as warranting such action.[27] In 1897, Gompers expressed his opposition to a proposal for a Department of Commerce and Industries to absorb the autonomous Department of Labor "introduced by a U.S. Senator, generally known for his hostility to labor's interests," and instead supported a bill for a Department of Labor with a seat in the Cabinet. The need was reasserted in 1901.[28]

President Roosevelt's enthusiasm for a Department of Commerce and Industries, with Republican control of the Congress, made the matter a foregone conclusion. But the Democratic minority fought hard. The proponents of the bill, including Senator Mark Hanna of Ohio, prominent in the National Civic Federation, which included Gompers along with leading industrialists, saw no conflict in the interests of capital and labor, and insisted that the interests of labor would be well represented in such a department. Wright was praised on all sides in the congressional debate, and it was urged that his role and that of his agency would only gain if transferred to the new department. The AFL and the unaffiliated railroad unions opposed the merger, supporting the establishment of a Cabinet Department of Labor. Only the near defunct Knights of Labor favored the merger.[29]

The controversy was resolved by altering the name to the Department of Commerce and Labor, which was established in 1903.[30] There was ambivalence in the AFL reaction to the new agency. Shortly thereafter, Gompers expressed some hope in that: "while there is cause for regret that the Department of Labor has been deprived of its independent existence, we yet have the assurance of the Honorable George B. Cortelyou, Secretary of the Department of Commerce and Labor, that it is his purpose to have the Department serve the best interests of labor."[31]

AFL interest in a separate Department of Labor waxed during the following decade, as its political interests and influence grew. But the AFL relations with Wright and his successor in 1905, Charles P. Neill, increased and were generally constructive. This was enhanced by President Roosevelt's concern with labor-management relations and the important role he assigned to Wright, and later, to Neill. Roosevelt wrote that the anthracite strike brought him "into contact with more than one man who was afterward a valued friend and fellow worker. On the suggestion of Carroll Wright, I appointed Charles P. Neill as assistant recorder to the Commission, whom I afterward made labor commissioner, to succeed Wright himself."[32]

As Gompers sized it up, Neill was recognized by labor officials "as the man in the administration closest to the President." Neill was regularly present when the President discussed major matters with union officials. Gompers' own respect for Neill was reflected in his assessment of the steel industry study, saying that "Dr. Neill performed a very comprehensive and valuable piece of work which caused the officials of the steel corporation to 'cuss him' and gnash their teeth."[33]

Compulsory investigation

The role of Government in the 1902 anthracite strike settlement was an augury of the Roosevelt policy of seeking to reduce the impact of strikes on the Nation, recognizing the right of unions to organize, and urging the need for public airing of labor dispute issues. Roosevelt's message to Congress in 1904 cited the positive role of Government in labor matters "merely by giving publicity to certain conditions," and praised the Bureau of Labor for doing excellent work of this kind. He asked that the Department of Commerce and Labor's Labor Bureau provide Congress with information on the labor laws of the various States, and be given "the means to investigate and report to the Congress upon the labor conditions in the manufacturing and mining regions throughout the country, both as to wages and hours of labor, as to the labor of women and children, and as to the effect on the various labor centers of immigration from abroad."[34] All of these subjects were concerns of the AFL, and their study was to be effectuated by the Bureau in the next few years.

Subsequently, Roosevelt proposed the compulsory investigation of disputes by the Federal Government, as a means of reducing the incidence of strikes.[35] In the hearings on proposed legislation, Commissioner Neill testified in support of this proposal, but only for controversies which became "sufficiently large and sufficiently troublesome to the public as to be a grave menace."[36] Although legislation was not enacted, the Bureau was called upon by the President and Congress to make investigations of several difficult situations. Although the AFL did not support labor dispute-handling legislation, the Bureau's investigative reports generally were cited with approbation.

After the anthracite coal report there was a series of landmark investigations of labor-management relations. They covered the background, origin, and points of view of labor organizations and management. President Roosevelt called for publication of the Bureau's report on the labor disturbance in a Colorado gold field, and coal mines in 1903–04, which contained an account of the violations of civil law and constitutional rights of the State's striking miners. While unaffiliated with the AFL, the Western Federation of Miners received the Federation's support. Wright, in his introduction to the lengthy report, referred to the public attention given to the deportation of striking miners by State militia, pointing to similar actions by citizens committees over a 25-year period.[37]

Under Neill's stewardship, the demands on the Bureau for investigative reports became more frequent. Neill's personal involvement in dispute situations was also compounded by the activation of the Erdman Act mediation provisions on the railroads from 1906 forward, and by his participation in mediation efforts in other situations as a member of the National Civic Federation. A threatened strike of telegraphers against the Postal Telegraph and Western Union Companies was referred to Neill by Roosevelt. Neill, Gompers, and Ralph Easley of the National Civic Federation failed in their effort to mediate the dispute. Subsequently, an intensive study of the telegraph companies, their methods of handling public business, and their labor relations and working conditions was prepared by the Bureau at the request of Congress. Among the findings regarding the situation after the unsuccessful 1907 strike, was that the Postal Telegraph Company formed "an organization of its own employees . . . restricted to employees of the Postal Company, and each employee desiring membership is required to agree not to retain membership or accept membership in any union while in the employ of the company."[38] A strike in the Nevada gold field district in 1907 resulted in Roosevelt's sending Federal troops in response to the Governor's appeal, but following this up promptly with an investigating commission which included Neill. Within 5 days, the commission reported that there was no insurrection when the troops were called, and that there was no statutory basis for such action; Roosevelt withdrew the troops.[39]

A series of strikes among immigrant workers in unorganized or partially organized situations involved Neill and the Bureau of Labor, with AFL activity and interest affected by the varying circumstances. A strike at the Pressed Steel Car Company of McKees Rock, Pa., where immigrant workers protested the failure to post rates of pay, was investigated by Neill, and cited by Gompers as evidence of the need for legislative provisions for better regulation of immigration.[40]

The steel industry became the focus of strike activity in 1909–10, and the AFL was forced to draw on both economic and political actions, as union organization faltered. In June 1909, U.S. Steel Corp. announced that it would henceforth operate completely on an open-shop basis, provoking a walkout by the Amalgamated Association of Iron, Steel and Tin Workers. During the unsuccessful strike which persisted for a year, the AFL provided support through organizers, and presented grievances against U.S. Steel at a meeting with President William H. Taft.

Conditions in the steel industry were again highlighted when a widely publicized strike of several thousand unorganized workers occurred at Bethlehem Steel in February 1910. The Senate passed a resolution, supported by the AFL, authorizing the Bureau of Labor to investigate the strike.[41] Authorized in March, with daily findings released almost immediately, and a final report published in May, the investigation had much impact. Conducted under the direction of Ethelbert Stewart, later Commissioner of Labor Statistics, the report pointed to the company's widespread practice of a 12-hour workday, 7-day workweek. U.S. Steel was noted as abolishing most Sunday work, as the Bethlehem study got underway.[42] When Charles Schwab of Bethlehem Steel protested that the report was unfair in failing to clarify that these conditions existed throughout the American steel industry, Commissioner Neill did issue such a statement.[43] Gompers commented that the reported conditions emphasized the physical hazards of overwork.[44]

A month after the publication of the Bethlehem report, the Senate authorized the Bureau to examine working conditions in the iron and steel industry. The resultant study, published within a year, was based on personal visits to plants with about 90 percent of the industry's employees. Wages, hours of work, and accidents were covered in the report. Its four volumes showed continued 6- and 7-day workweeks with 12-hour days, and questioned the need for Sunday work in view of U.S. Steel's workweek adjustment. The majority of the labor force was found to consist of recent immigrants who had come from rural backgrounds, were unskilled, and could neither speak nor understand the language of supervisors and skilled workers. Attention was called to the dilution of skills in the industry as mechanical developments spread, adding further to the large proportion of unskilled workers.[45] Gompers cited excerpts from the report to reply to "public opinion" that labor was well-treated in the industry.[46]

Gompers had occasion to analyze the findings of the Bureau of Labor concerning the Lawrence, Mass., strike of textile workers in 1912. He commented on the low wages of women employed in the mills, and the "outburst of unorganized workers" over the unannounced *pro rata* reduction of earnings because of the statutory reduction in hours of work for women and children, from 56 to 54 hours per week. The Bureau commented on the onset of the strike "started by a few unskilled, non-English speaking employees, which developed into an organized strike of more than 20,000 employees, with increases obtained."[47]

Field of work expands

The basic statistical work of the Bureau grew during its residence in the Department of Commerce and Labor. Despite the extensive demands on Commissioner Neill and the Bureau for special studies, new continuous statistical series were developed. The food price collection in 150 cities was continued from Wright's time. The annual collection of union wage scales in many cities was begun in 1907, and a regular strike statistics series was launched. Special studies and reports were directed at particular industrial situations.[48]

The involvement of Commissioner Neill and the Bureau of Labor in other matters of direct concern to the AFL was prominent and regular. During the Roosevelt and Taft administrations, labor's political influence grew, despite the opposition by much of industry to dealings with the unions. The Bureau was more actively sought as an avenue to enlightenment on a variety of issues and as an administrative agent to the enforcement of the Government's 8-hour law.

The presentation of Labor's Bill of Grievances to President Roosevelt in March 1906 produced prompt presidential concern for the negligence of the executive departments in enforcing the 8-hour law on Government contracts which had been on the statute books for a long time. Neill was immediately requested to investigate the charges. He found that there were violations of work laws, but enforcing them was difficult. Neill made recommendations which were followed by the President in an executive order. The next year, Gompers reported that there were fewer violations with the Bureau serving as a clearinghouse for complaints which were investigated and rectified.[49]

The immigration issue

The subject of immigration figured prominently among labor's grievances, and Neill was called upon by President Roosevelt to play a role. The Immigration Act of 1903, while making it unlawful to pay for the transportation or to encourage the importation of aliens or to advertise for them in foreign countries, did not apply to State agencies. Subsequently, South Carolina's establishment of a Department of Agriculture, Commerce, and Immigration to encourage immigration, with agents maintained abroad, was upheld by the attorney general.[50] Roosevelt called on Secretary of Commerce Oscar Straus to review the matter thoroughly, because "a great deal of feeling has arisen over the decision and many of the people most affected sincerely believe that it is the end of any effort to stop the importation of laborers under contract in the Southern States, and that this means further damage to laborers in the Northern States." Roosevelt also consulted with Neill because he had "exceptional advantages in the way of keeping in touch with the labor people and of knowing their feelings as well as their interests."[51]

The Immigration Act of 1907 subsequently closed the loophole. A provision in the new act setting up a Bureau of Information was originally viewed by the AFL as permitting "workmen lawfully coming to the United States . . . a more intelligent choice in which to seek employment and if administered fairly is calculated to be of least injury to labor."[52] Within a year, widespread domestic unemployment and the promotional activities of the Bureau of Information, headed by Terence Powderly, precipitated criticism of the Bureau. Secretary Straus called a conference of labor union officials attended by Gompers and Commissioner Neill. Straus and Powderly proposed extending the Bureau's activities to aid the domestic unemployed. The AFL position was that strengthening the Bureau would only make for more immigration, and that the Department of Commerce and Labor should devote its energies solely to meeting the problem of the domestic unemployed.

Neill also spoke out on aid to the domestic unemployed. He cited the deplorable wages and hours of work in the steel industry as largely caused by the constant stream of immigrants, who replaced other workers at lower wages. Further dissemination of information abroad would only increase the flow of immigrants, and there would be opposition to any information by the division to discourage immigration into any part of the country.[53]

Industrial education

Special reports were also prepared at the initiation of the AFL, with participation from other public interest groups. The Bureau had covered U.S. industrial education in 1892 and 1902 reports; but there was growing and intensified interest from the AFL, which corresponded with educators, academicians, and social work groups on the subject in 1908. In that year a committee was formed, which included Neill, union officials, and public interest representatives. Industrial education, along with the raising of the age limit of child employees and compulsory school attendance were basic principles of labor, and as Gompers expressed it, "working methods of manufacturing with their division and subdivision and specialization have, to a large extent, rendered nearly superfluous and therefore largely eliminated the all-around skilled worker. Some so-called modern apprenticeship systems are narrow, producing a line of trained specialists."[54] At the committee's request, the Bureau of Labor conducted a study of industrial education in 1910.[55] The AFL termed the resultant report the "most comprehensive inquiry ever made on the subject in the United States." The study provided support for legislative proposals by the AFL for Federal aid to the States for industrial education on the basis that, as Gompers expressed it, "the fact that industrial education, like academic education [has] become a public function and . . . that it should be paid for by public funds, is fast gaining supporters."[56] Success on the legislative front was finally achieved in 1917.

Women and children at work

A historic study of the conditions of working women and children, conducted by the Bureau over a 5-year period beginning in 1907, came after much encouragement by the AFL and welfare reform organizations to do so. The complementary interests of the Bureau and the AFL were reflected in a 1903 symposium in the *American Federationist* on employment of women and children. An article by Ethelbert Stewart called attention to results of the 1900 census, which showed the 10-year rates of growth of industrial employment were largest among children under age 16 and greater for women than for men more than 16 years old.[57] When Roosevelt asked for a sociological investigation with Commissioner Neill's support, Gompers and other union officials encouraged Congressional approval of the study, urging that it was necessary, and was not covered by the statistical records and work of the Census Bureau.[58] Assignment of the study to the Commissioner met with approval. The AFL and representatives of welfare organizations agreed at a conference to "cooperate with the Commissioner of Labor in the investigation, if necessary, to ascertain all the facts obtainable with a view to such cooperative action as shall at an early date free our country and our people from the stigma of exploiting young people for profit."[59] As the investigation proceeded, AFL representatives met with Neill to set up a division in the Bureau of Labor to deal with the conditions of working women and children.[60]

The 19 volumes of the study appeared over a 3-year period. Personal inspections and interviews, along with the analysis of published and establishment data, were used by Bureau staff and outside experts from universities, welfare organizations, and medical facilities in the conduct of the study. Among the subjects covered were the working and living conditions of workers in such industries as cotton textiles, men's clothing, glass, silk, retail trade, metal trades, and laundries; State legislation on child labor; causes of school leaving; the effect of employment on juvenile delinquency, on infant mortality and on criminality of women; family budgets of cotton mill workers; causes of death among female and child cotton mill operatives; and women in trade unions.[61]

Gompers claimed that the results of the study had "fully justified the action of the AFL in behalf of such an inquiry being made." Calling specific attention to the findings on accidents in metal trades, which showed hazards for women equal to those of men, hazards for children rare and decreasing, and that the most frequent accidents were largely preventable, Gompers went on to say: "what more can be said other than to extend a creditable recognition to the public officials who will make such a faithful, honest report."[62]

The scope and probing character of such a sensitive type of study made some adverse reaction inevitable. Compounded by public accusations by two disaffected Bureau employees, controversy arose in the Senate. Several southern members charged that the report overstepped the bounds of governmental investigations.[63] Although the study received resounding support from many sources, Neill was confronted with opposition which delayed his reappointment by President Taft. Appointed by Woodrow Wilson and confirmed shortly after the establishment of the new Department of Labor, in which the Bureau was to be lodged as the Bureau of Labor Statistics, Neill resigned soon afterward for financial reasons.[64]

THE RELATIONSHIP BETWEEN the AFL and the Bureau during the pre-Department of Labor period was one of mutual awareness and generally high regard. The AFL, and notably Gompers, followed the work of the Bureau, and used it in organizational, political, and educational activities. The Bureau's broad-gauge projects were self-determined, with substantial support from Presidents and Congress. These shed light on socioeconomic developments, national and international labor news, and industrial characteristics, reflecting the needs of the time for growing comprehension of the status of labor. While Gompers differed with Wright and Neill over the role of Government in handling strikes with a national impact, the commissioners' fair and balanced analyses of major disputes was accepted as a tempering influence on possibly more stringent approaches. With its growing political influence, the AFL pressed for and achieved a Cabinet-level Department of Labor. Although the Bureau then became one of several bureaus in the new Department of Labor, that did not obscure its unique role in furnishing a major foundation for the new agency. ☐

FOOTNOTES

[1] Samuel Gompers, *Seventy Years of Life and Labor* (New York, E. P. Dutton, 1925), vol. 1, p. 224; and *Federation of Organized Trades and Labor Unions, Proceedings, 1881*, p. 4. For a contemporary account of the 1881 convention see Stuart Bruce Kaufman, "Birth of a federation: Gompers strives 'not to build a bubble'," *Monthly Labor Review*, November 1981, pp. 23–26.

[2] Terence V. Powderly, *Thirty Years of Labor* (Philadelphia, Excelsior Press, 1890), pp. 158–63.

[3] *Senate Committee on Labor and Education, Hearing on Capital and Labor, 1883*, vol. 1, pp. 271, 382.

[4] Ibid, vol. 2, pp. 278–80.

[5] *Federation of Organized Trades and Labor Unions, Proceedings, 1883*, pp. 10–11.

[6] Arthur had received assurances from President-elect Cleveland that Wright would continue in office after March 4. See John Lombardi, *Labor's Voice in the Cabinet: A History of the Department of Labor from Its Origins to 1921* (New York, Columbia, 1942), pp. 31–35.

[7] *Federation of Organized Trades and Labor Unions, Proceedings, 1885*; and Gompers, *Seventy Years*, vol. 1, p. 229.

[8] *American Federation of Labor, Proceedings, 1887*, p. 9; Ibid, *Proceedings, 1888*, p. 9.

[9] *Commissioner of Labor, First Annual Report, Causes of Depression, 1886*, p. 76.

[10] Ibid, pp. 290–93.

[11] Lombardi, *Labor's Voice*, p. 43.

[12] *AFL, Proceedings, 10th Convention, 1890*, pp. 16, 18.

[13] Ibid, *9th Convention, 1889*, p. 16

[14] Ibid, *Proceedings, 11th Convention, 1891*, p. 17.

[15] Ibid, *Proceedings, 13th Convention, 1893*, p. 15.

[16] Carroll D. Wright, to the National Association of Officials of Bureau of Labor Statistics, *Proceedings, 1895*; Carroll D. Wright, *The Working of the United States Bureau of Labor*, Bulletin of the Bureau of Labor, No. 54, September 1904, pp. 975–76.

[17] James Leiby, *Carroll Wright and Labor Reform* (Cambridge, Mass., Harvard, 1960), pp. 103–04.

[18] In Department of Labor Bulletin 6, *Recent Governmental Contracts*, September 1896, pp. 690–91; Ibid, Bulletin 9, *The Padrone System and Padrone Banks*, March 1897, pp. 113–29.

[19] *AFL, Proceedings, 15th Convention, 1895*, p. 38; Ibid, *16th Convention, 1896*, p. 18.

[20] Ibid, *1896*, p. 20.

[21] *American Federationist*, vol. IV, no. 4, June 1897, p. 76.

[22] *U.S. Strike Commission of 1894, Report*, 1895, pp. 194–201.

[23] Ibid, p. 52.

[24] *American Federationist*, vol. 1, no. 10, 1894, pp. 231–33.

[25] The AFL opposed the legislation, and, as Gompers later stated, when the unaffiliated railway brotherhoods continued to support the legislation, the AFL considered itself successful in eliminating any possible application but to the railway unions. *American Federationist*, vol. V, no. 3, May 1898. pp. 70–1; Ibid, vol. IX, no. 6, June 1902; *Industrial Commission, 1901*, vol. XVII, pp. cv-cvi; *AFL, Proceedings 16th Convention, 1906*, pp. 28–29; Gompers, *Seventy Years*, vol. 2, p. 137.

[26] Gompers, *Seventy Years*, vol. 2, p. 120; *AFL, Proceedings of 22nd Annual Convention, 1902*, pp. 12–13; *House Committee on Labor, Hearings National Arbitration Bill, 1904*, p. 63.

[27] Geo. [illegible] L. McMurphy, *American Federationist*, vol. 1, no. 4, pp. 95–96.

[28] *AFL, Proceedings, 17th Convention, 1897*, p. 22; *AFL, Proceedings, 21st Convention, 1901.*

[29] *Organization of the Department of Commerce and Labor, 1904*, pp. 478–79, 520–22.

[30] Ibid, p. 499.

[31] *AFL, Proceedings, 23rd Convention, 1903*, p. 24, 173.

[32] Theodore Roosevelt, *Autobiography, Works*, vol. XX, 1925, p. 460.

[33] Gompers, *Seventy Years* , vol. 1, pp. 530–32, vol. 2, pp. 129–30.

[34] *American Federationist*, vol. XIII, no. 1, January 1905.

[35] Message to the Congress, 59th Cong., 2nd sess., Dec. 3, 1906 in *The Works of Theodore Roosevelt*, vol. V, pp. 924–26; Message to the Congress, 60th Cong., 1st sess., Dec. 3, 1907 in *The Works of Theodore Roosevelt*, vol. VI, pp. 152–55.

[36] Neill expressed the view that: "the employers' side generally has the advantage in getting a hearing before the public," and compulsory investigation and a public report would force "both sides to show up the actual things that were being done, and the actual merits of their claims." House Committee on Interstate and Foreign Commerce, Hearing, *Investigation of Controversies Affecting Interstate Commerce, 1906*, pp. 6, 11.

[37] Senate Document 122, 58th Cong., 3d sess., *Labor Disturbances in the State of Colorado, 1880 to 1904; 1905*; pp. 31–34; 278–80.

[38] *The New York Times*, June 17, 1907, p. 1; July 13, 1907; p. 2; Aug. 12, 1907, p. 2; *National Civic Federation Review*, September 1907, p. 17; Senate Document No. 725, 60th Cong., 2nd sess.; *Investigation of Western Union and Postal Telegraph Cable Cos.*, 1909, pp. 39–42.

[39] Edward Berman, *Labor Disputes and the President of the United States* (New York, Columbia University Press, 1924), pp. 64–65.

[40] *The New York Times*, Sept. 7, 1909; Sept. 11, 1909; AFL, *Proceedings of 29th Convention*, 1909, p. 30.

[41] *AFL, Report of Proceedings of 30th Convention, 1910*, pp. 20–21; *American Federationist*, vol. XVII, no. 2, February 1910, pp. 113–15.

[42] Senate Document No. 521, 61st Cong., 2nd sess., *Report on Strike at Bethlehem Steel Works*, 1910, pp. 70, 128.

[43] *The New York Times*, May 12, 1910, p. 9.

[44] *American Federationist*, vol. XVII, no. 6, June 1910.

[45] Senate Document No. 110, 62nd Cong., 1st sess., *Report on the Iron and Steel Industry*, 1911, vol. 1, pp. XIV–XVI; vol. 3, 1913, pp. 13–15.

[46] *American Federationist*, vol. XIX, no. 2, February 1912, pp. 101–14.

[47] Senate Document No. 870, 62nd Cong., 2nd sess., *Report of the Strike of Textile Workers in Lawrence, Massachusetts*, 1913, p. 17.

[48] Ewan Clague, *The Bureau of Labor Statistics* (New York, Frederick Praeger, 1968), p. 13.

[49] *AFL, Proceedings, 27th Convention, 1907*, pp. 38–39.

[50] Richard G. Balfe, "Charles P. Neill and the United States Bureau of Labor," Ph. D. diss. (University of Notre Dame, 1956), p. 112.

[51] Oscar S. Straus Papers; Correspondence from Roosevelt to Straus, Jan. 18, 1907.

[52] *AFL, Proceedings, 27th Convention, 1907*, p. 40.

[53] Department of Labor and Commerce, Labor Conference, 1909, pp. 11, 29, 31, 46, 80–81; *AFL, Proceedings, 29th Convention, 1909*, pp. 34–35.

[54] *AFL, Proceedings, 29th Convention, 1909*, p. 35.

[55] Commissioner of Labor, *25th Annual Report, Industrial Education in the United States*, 1910, 1911.

[56] *AFL, Proceedings, 30th Convention, 1910*, pp. 41–43; *AFL, Proceedings, 32nd Convention, 1912*, pp. 137–39; 269–76.

[57] *American Federationist*, vol. X, no. 5, May 1903, p. 354.

[58] *AFL, Proceedings, 26th Convention, 1906*, p. 30–31.

[59] *AFL, Proceedings, 27th Convention, 1907*, p. 28.

[60] Legislation was also pending calling for the establishment of a Children's Bureau in the Department of Commerce and Labor. *AFL, Proceedings, 30th Convention, 1910*, pp. 124, 224–25.

[61] Senate Document No. 645, 61st Cong., 2nd sess., *Report on the Condition of Women and Child Wage-Earners in the United States*, vols. 1–19, issued between 1910 and 1913.

[62] *AFL, Proceedings, 31st Convention, 1911*, p. 35.

[63] Daniel J. B. Mitchell, "A furor over working children and the Bureau of Labor," *Monthly Labor Review*, October 1975, pp. 34–36; and Judson McLaury, "A senator's reaction to report on working women and children," pp. 36–38.

[64] Balfe, "Neill and the Bureau of Labor," pp. 139–40: See also Jonathan Grossman, "The origin of the U.S. Department of Labor," *Monthly Labor Review*, March 1973, pp. 3–7.

Nonwool yarn mills experience slow gains in productivity

During 1958–80, new equipment and techniques aided productivity growth; although the 2.3-percent rate of increase was less than for manufacturing as a whole, it accelerated during the last 8 years of the period

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As measured by output per employee hour, productivity in the nonwool yarn mill industry increased at an average of 2.3 percent during 1958–80, somewhat below the 2.8-percent rate for all manufacturing.[1] (See table 1.) Output increased at an average annual rate of 4.5 percent while employee hours advanced at a rate of 2.1 percent. For the most recent period, 1973–80, productivity has risen at a faster annual rate—averaging 3.0 percent. Improved preparatory and spinning equipment have contributed to these gains.

Growth varied over the period of study. From 1958 to 1965, productivity increased every year, rising at an average annual rate of 5.2 percent. The largest jump occurred in 1961 with a rise of 9.3 percent. The 5.2-percent average gain in productivity reflected an average annual growth of 6.7 percent in output and 1.5 percent in employee hours. Since 1965, productivity gains have slowed considerably. During 1965–73, output per employee hour grew at an average annual rate of only 1.2 percent. Output increased at a 4.6-percent rate—just slightly faster than that of 3.4 percent for employee hours. Productivity movements displayed much year-to-year fluctuation during this time. There were increases in only 5 of 9 years, with the largest—7.1 percent—occurring in 1971.

In contrast to productivity movements for most industries, the growth in this industry accelerated during 1973–80, rising at an average annual rate of 3.0 percent. Output grew at a rate of 2.6 percent, while employee hours declined at a rate of 0.4 percent. Recessionary conditions in the economy in 1974 and 1975 had a strong impact on the trends in output and employee hours. In 1974, the yarn industry began sharp reductions in employee hours, as output fell 3.5 percent. The more than proportional drop in employee hours of 7.9 percent led to a 4.8-percent rise in productivity. In 1975, output posted a further decline of 4.2 percent. In the face of this continuing deterioration in output, employee hours experienced their largest single-year decline in the entire 1958–80 period, 15.7 percent. The resulting productivity increase, 13.6 percent, was the largest of the two-decade period.

Employment and plant size

Total employment in the spun yarn industry increased by more than 28 percent between 1958 and 1980, rising at an average annual rate of 2.1 percent. There were 67,800 employees in 1958, but by 1980 the total had risen to 86,900. However, the increase in employment was not steady; cyclical patterns were evident throughout the period, which were related to trends in the overall economy.

The establishments which produce yarn vary in size but, generally, are rather large. According to the 1977 Census of Manufactures, nearly 40 percent of all establishments employ 100 to 249 employees and these account for more than 30 percent of industry value of

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Table 1. Productivity and related indexes for nonwool yarn mills, 1958–80

[1977=100]

Year	Output per employee hour	Output	Employee hours	Employees
1958	59.5	39.4	66.2	72.9
1959	62.3	44.8	71.9	72.9
1960	65.3	42.5	65.1	68.6
1961	71.4	45.1	63.2	65.6
1962	74.7	48.7	65.2	66.3
1963	76.3	50.3	65.9	66.3
1964	80.6	57.4	71.2	69.1
1965	84.6	66.5	78.6	73.8
1966	81.8	66.7	81.5	78.0
1967	77.5	61.7	79.6	80.1
1968	80.2	68.2	85.0	83.3
1969	84.5	74.4	88.0	89.3
1970	84.3	70.9	84.1	86.3
1971	90.3	82.0	90.8	89.2
1972	91.0	91.2	100.2	96.4
1973	85.0	88.9	104.6	102.7
1974	89.1	85.8	96.3	101.2
1975	101.2	82.2	81.2	87.7
1976	93.5	89.7	95.9	97.7
1977	100.0	100.0	100.0	100.0
1978	104.2	103.8	99.6	100.3
1979	103.6	99.0	95.3	95.8
1980	106.1	97.5	91.9	93.4
	Average annual rates of change (in percent)			
1958–80	2.3	4.5	2.1	2.1
1975–80	1.7	3.4	1.7	0.7

shipments. Of the 456 establishments in the industry, almost 20 percent employ 250 to 499 employees and also account for more than 30 percent of total value of shipments. Only about 7 percent of all establishments employ 500 to 999 employees but these produce more than 20 percent of industry value of shipments.

Production workers have always represented a high proportion of total industry employment and that proportion has changed very little over time. In 1958, they accounted for slightly more than 94 percent of total employment and in 1980 their share was still about 92 percent. The proportion of female employees has increased in recent years, rising from approximately 44 percent of the work force in 1972 to 46 percent in 1980.

Average hourly earnings in the spun yarn industry have remained well below those of all manufacturing. In 1972, the first year for which such data are available, average hourly earnings were $2.53, significantly less than the $3.82 for all manufacturing. By 1980, average hourly earnings in the industry had risen about 89 percent to $4.78. However, this was still well below the average for all manufacturing, which was up to $7.27.

Diverse industry markets

Spun yarn is used for the manufacture of the great majority of textile products; household items which contain yarn include carpets and rugs, bedspreads, draperies, and towels. Its demand can be influenced by population changes, housing starts, changes in lifestyle or consumer tastes, and general economic conditions.

Nonwool yarn is purchased by many different manufacturers. Broad woven fabric mills are major users of spun yarn. These mills produce goods made from cotton, synthetic fibers, and silk, such as sheets, pillowcases, draperies, and towels. The firms which use synthetic fibers and silk are the largest purchasers of spun yarn. From 1963 to 1977, purchases by nonwool spinning mills increased nearly 90 percent, but those by broad woven cotton mills changed very little.[2]

Mills which produce knit fabric also account for a large proportion of total spun yarn purchases. These mills knit tubular or flat fabric and dye or finish knit fabric; their output increased rapidly from 1963 forward. This increase in output translated into rising yarn purchases by these mills. It is estimated that between 1963 and 1967, purchases of spun yarn by both circular and warp knit fabric mills increased by approximately 136 percent.

Other types of knitting mills also use spun yarn, including knit outerwear and underwear mills and hosiery mills. The first type manufactures products such as suits, slacks, shirts, neckties, and skirts. Although complete information is not available for all years, estimates indicate that purchases of spun yarn by knit outerwear mills decreased during the 1963–77 period.

Exports have historically accounted for a negligible portion of the total market. In 1979 and 1980, although exports increased rapidly, they only accounted for approximately 2 percent of yarn shipments. Imports have had little impact on the domestic market, making up less than 1 percent of apparent consumption in recent years.[3]

Advances in technology

The production of spun yarn involves a number of different operations. Improvements in technology have taken place at different stages of the production process and have contributed to the industry's overall growth. Much of the advance has resulted from gradual improvements in the equipment over time.

The raw material arrives at the mill as bales. The adoption of automatic bale opening and blending equipment, which eliminates the need for manual performance of this operation, has led to greater efficiency in this initial stage of the production process.

Likewise, improvements have occurred in the carding operation. In it, the fibers of the raw material are made parallel to each other and most of the foreign matter is removed. The fibers emerge in a form known as sliver. Formerly, the yarn entered a picker which formed it into a roll before being fed into the carding machine. However, the introduction of the automatic chute feed which permits the blended fibers to be fed directly into the carding machine, has eliminated the need for a picker. The carding machinery itself has increased in speed, further contributing to productivity gains.

The drawing and roving operations follow the carding process. The drawing operation makes the slivers more uniform. In the roving process, a twist is imparted to the sliver by the roving frame. This results in greater strength. The product that emerges is known as roving and is wound onto bobbins which are taken up when full. The adoption of larger bobbins has reduced the amount of tending necessary because they do not have to be removed as often. Improved roving equipment has been introduced which is faster and eliminates the need to remove the flyers (which insert twist into the fibers) for doffing (removal of the bobbins).

After the roving operation, the roving bobbin proceeds to the spinning operation. The spinning drafts (draws out) the fibers to size the yarn and puts the desired twist into it, providing necessary strength. Yarn is spun onto bobbins; the use of larger ones on spinning machines has reduced the frequency with which bobbins have to be removed. The introduction of automatic doffing equipment—equipment which removes the full bobbins and replaces them with empty ones—has also improved productivity. Increased operating speed of the spinning equipment itself has also contributed to productivity gains.

After spinning, the yarn is taken to the winding department. Here, winding machines remove the yarn from the spinning bobbins and wind it onto cones for direct customer shipment or onto tubes for dyeing. Automation in winding equipment has taken place and has increased productivity growth immensely.[4]

A number of plants have introduced open-end spinning, which has also aided productivity. This combines into one process the three separate operations of roving, spinning, and winding, thus eliminating the need for a separate roving and winding operation. Open-end spinning can wind the yarn onto a package rather than a spinning bobbin; thus, a separate winding operation to transfer the yarn from the spinning bobbin to a cone is no longer needed.[5]

Capital spending

Rises in labor productivity are frequently linked to increases in capital formation. Data available through 1979 indicate that, over 1958–79 as a whole, current-dollar new capital expenditures rose at an average annual rate of 9.4 percent. However, the advances were not uniform throughout the period, and the most rapid ones took place in the earlier years. From 1958 to 1966, new capital expenditures increased at a 22.1-percent rate. This acceleration in capital spending coincided with rapid productivity growth. During 1958–66, the rate of increase in output per employee hour was 4.6 percent. Both productivity and capital expenditures posted increases in all but one year of the 1958–66 subperiod.

The tremendous growth in capital expenditures during this time caused the ratio of capital expenditures per employee to go up far more rapidly than for all manufacturing. In 1958, capital spending per employee was only $229 in the spun yarn industry, compared with $619 for all manufacturing. However, by 1966, capital spending per employee in the industry had risen to $1,368, compared with $1,112 for all manufacturing.

From 1966–79, the trends in both capital expenditures and productivity were quite different from the preceding years. The rate of increase in capital expenditures declined to 4.9 percent. There were even substantial decreases in a number of years. Productivity growth likewise experienced a slowdown, dropping to an average annual rate of increase of 2.2 percent. As in the case of capital expenditures, there were declines in some years. The decline in the growth rate of capital expenditures caused the rate of increase in the ratio of capital expenditures per employee to fall behind that of all manufacturing. From 1966–79, capital spending per employee in the spun yarn industry advanced at an average annual rate of only 3.0 percent, compared with a rate of 9.2 percent for all manufacturing. Consequently, capital spending per employee was only $1,607 in 1979, compared with $3,118 for all manufacturing.

PRODUCTIVITY SHOULD CONTINUE to increase as improvements in production equipment take place and as more manufacturers take advantage of these. Some of the newer equipment, which embodies more advanced technologies than past models, is capable of producing better quality yarn with fewer imperfections and weak spots. This top quality is increasingly demanded by customers as they adopt higher speed weaving and knitting machinery.[6] This is accelerating the adoption of more modern production equipment by nonwool yarn mills.

Some industry officials expect labor market conditions to provide added stimulus for use of improved production equipment.[7] Relocation of the manufacturing operations of many industries into major textile producing areas exerts additional pressure on existing labor and wages. This, in turn, is impelling more yarn manufacturers to utilize the equipment and techniques which provide the greatest levels of output per employee hour.

Open-end spinning will continue to contribute to productivity gains as it becomes more widely adopted. This form of spinning has a particularly favorable effect on production efficiency because, as noted earlier, it combines the separate operations of roving, spinning, and winding into a single process. □

—FOOTNOTES—

[1] The nonwool yarn mill industry consists of establishments primarily engaged in spinning yarn wholly or chiefly by weight of cotton, synthetic fibers, or silk. It is designated as industry 2281 in the 1972 Standard Industrial Classification (SIC) Manual. All average annual rates of change are based on the linear least squares trend of the logarithms of the index numbers. Extension of the indexes will appear in the annual BLS Bulletin, *Productivity Measures for Selected Industries.*

[2] The discussion of yarn purchases from nonwool yarn mills by the consuming industries is based on constant-dollar estimates.

[3] *U.S. Industrial Outlook* (U.S. Department of Commerce, 1981), p. 402.

[4] See McAllister Isaacs III, "Winding a 138 Percent Boost in Operator Pounds," *Textile World,* February 1980, pp. 79–82.

[5] See Brenda V. Lloyd, "Meeting the Challenges of Modernization," *Textile Industries,* September 1979, pp. 114–17. Also, see McAllister Isaacs III, "Avondale Open-End Cuts Labor, Ups Output," *Textile World,* May 1980, pp. 63–66.

[6] W. Bud Newcomb, "U.S. Sales-Yarn Firms Are Poised For Future Growth," *Textile World,* September 1980, p. 203.

[7] See Douglas A. Bowen, "Linn-Corriher: Yarn Making Pioneer," *Textile Industries,* March 1980, p. 50. Also, see Joseph L. Lanier Jr., "Plants and Equipment," *America's Textiles,* June 1976, p. 21.

APPENDIX: Measurement techniques and limitations

Indexes of output per employee hour measure changes in the relation between the output of an industry and employee hours expended on that output. An index of output per employee hour is derived by dividing an index of output by an index of industry employee hours.

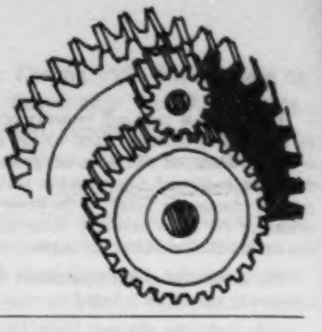
The preferred output index for manufacturing industries would be obtained from data on quantities of the various goods produced by the industry, each weighted (multiplied) by the employee hours required to produce one unit of each good in some specified base period. Thus, those goods which require more labor time to produce are given more importance in the index.

In the absence of adequate physical quantity data, the output index for this industry was constructed by a deflated value technique. The value of shipments of the various product classes were adjusted for price changes by appropriate Producer Price Indexes to derive real output measures. These, in turn, were combined with employee hour weights to derive the overall output measure. The result is a final output index that is conceptually close to the preferred output measure.

Employment and employee hour indexes were derived from data published by the Bureau of the Census because BLS data were not available. Employees and employee hours are each considered homogeneous and additive, and thus do not reflect changes in the qualitative aspects of labor, such as skill and experience.

The indexes of output per employee hour do not measure any specific contributions, such as that of labor or capital. Rather, they reflect the joint effect of factors such as changes in technology, capital investment, capacity utilization, plant design and layout, skill and effort of the work force, managerial ability, and labor-management relations.

Productivity Reports



Labor and material requirements for hospital construction

Dawn E. Dougherty

In 1980, each $1,000 of contract cost for hospital construction generated an estimated 51.4 hours of work, according to a Bureau of Labor Statistics survey.[1] This means that each $1 billion spent on hospital construction in 1980 would have created 27,129 jobs—12,850 in the construction industry and 14,279 in industries which produce and deliver the materials, equipment, and supplies used in construction. The 1975 survey indicated that each $1 billion of hospital construction would have provided 21,528 jobs in construction and 24,256 in related industries.[2]

The survey covered hospital and nursing home construction. However, this summary presents data for hospitals only; a detailed report covering both hospital and nursing home construction is being prepared. This was the third survey for hospitals and the second for nursing homes. It measured employee hours per $1,000 of contract cost and per 100 square feet of construction. A sample of 34 hospitals and 8 nursing homes completed in 1976 was drawn to represent a universe of 90 hospitals and 16 nursing homes. All projects were funded under the former Department of Health, Education, and Welfare's Hill-Burton program. Data for onsite employee hours, material and labor costs, and project characteristics were obtained through visits to general and special trade contractors.

Employee hours

For each $1,000 of contract cost for hospitals completed in 1976, 87.7 employee hours were required. The following tabulation shows the distribution of employee hours per thousand current dollars for hospitals constructed in 1975, and estimates for 1980.

	1975	*1980*
Construction	39.2	23.4
Onsite	34.7	20.7
Offsite	4.5	2.7
Manufacturing	29.3	16.5
Trade, transportation, and services	15.1	9.1
Mining and all other industries	4.1	2.4

Nearly 89 percent of the hours required in the construction industry in 1975 were spent onsite. The remaining hours represent builders' offsite administrative, office, and warehousing duties.[3] The employee-hour requirements in other industries, which were greater than construction employee hours, composed 55 percent of all hours.[4] Manufacturing accounted for the largest number of these indirect hours with 60 percent.

Onsite hours. Onsite employee-hour requirements per $1,000 of contract cost decreased between each of the three studies. Hospitals surveyed in 1960 and 1966 required 88.8 and 76.1 onsite hours, respectively, compared with 34.7 in 1975.[5] In constant (1972) dollars, 46.7 employee hours were required in 1975, compared with 52.7 in 1960 and 49.9 in 1966. This means that onsite hours declined at an average annual rate of 0.8 percent between 1960 and 1975 and 0.7 percent between 1966 and 1975. Factors contributing to the decline include improvements in construction methods, changes in the types of materials used, differences in individual project characteristics, and increases in productivity. Although onsite hours cannot be used as an exact measure of productivity, changes in onsite hours give an indication of productivity trends in the construction industry.

By occupation. Skilled workers contributed 68.6 percent of all onsite hours in 1975 (table 1). In 1960, skilled workers accounted for 67.8 percent of all hours and in 1966, 70.3 percent. Plumbers (including pipefitters and steamfitters), carpenters, and electricians accounted for the largest proportion of skilled employee hours in all three studies. The proportion of hours contributed by electricians increased with each study, reflecting a growing sophistication and complexity in the electrical equipment and lighting systems used by hospitals.

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Semiskilled and unskilled workers accounted for 22.4 percent of all onsite hours in 1975; in 1960 and 1966, they represented 28.4 percent and 26.4 percent, respectively. The proportion of hours contributed by professional, clerical, and supervisory workers, which was 3.9 percent in 1960 and 3.2 percent in 1966, increased to 8.6 percent in 1975. Supervisory workers' hours accounted for most of this increase.

By type of contractor. General contractors accounted for the greatest proportion in onsite hours with 26.6 percent. In comparison, general contractors contributed 39.1 percent in 1960 and 36.5 percent in 1966. This decline indicates that general contractors are subcontracting more of their onsite duties to special trade contractors. Plumbing and heating, ventilating, and air-conditioning contractors had the second highest proportion of onsite hours, reflecting the extensive amount of plumbing done in hospital construction. Electrical contractors made up the third largest group. This was true for both of the earlier studies, although the proportion contributed by electrical contractors increased between the studies.

Project characteristics

Hospitals completed in 1976 were larger and cost more to build than those previously studied (table 2).

Table 1. Onsite labor requirements per $1,000 of contract cost, by occupation and type of contractor, 1975

Occupation	Percent	Type of contractor	Percent
All occupations	100.0	Total	100.0
Skilled workers	68.6	General contractors	26.6
Brickmasons	3.5		
Carpenters	12.5	Special trade contractors	73.4
Concrete finishers	2.5	Plumbing, heating and air-conditioning	23.8
Drywall installers	1.0	Electrical	13.0
Electricians	11.9	Plastering and lathing	6.5
Elevator installers	0.7	Masonry	5.5
Glaziers	0.5	Concrete work	4.4
Insulation workers	2.2	Roofing and sheet metal work	2.4
Lathers	2.1	Ornamental and structural metal work	2.2
Operating engineers	2.1	Wallboard	2.1
Painters	1.6	Painting and wallpapering	1.9
Pipefitters and steamfitters	6.0	Terrazzo and tile work	1.7
Plasterers	1.5	Carpentry	1.5
Plumbers	6.6	Excavations, foundations, footings, and grading	1.4
Reinforcing ironworkers	1.6	Elevators	1.2
Roofers	0.6	Insulating	1.1
Sheet metal workers	5.4	All other types	4.6
Structural metal and ornamental ironworkers	2.6		
Tile setters, hard	0.6		
Other skilled workers	3.1		
Semiskilled and unskilled workers	22.4		
Laborers	19.0		
Helpers	1.6		
Truck drivers and other semiskilled or unskilled workers	1.8		
Supervisory, professional, technical, and clerical workers	8.6		

NOTE: Detail may not add to totals due to rounding.

Table 2. Selected project characteristics for hospital construction, 1960, 1966, and 1975

Characteristic	1960	1966	1975
Number of projects	46	61	90
Floor space (1,000 square feet)	56.5	63.5	163.8
Average total cost	$1,463,723	$1,811,459	$8,097,826
Cost per square foot	$25.93	$28.51	$49.46
Number of beds per project	86	82	128
Cost per bed	$16,947	$22,172	$63,448
Proportion of average total cost for—			
Onsite wages and salaries	28.2	29.6	27.7
Materials, built-in equipment, and supplies	53.2	50.4	42.2
Construction equipment	1.2	1.3	2.4
Residual	17.4	18.7	27.7

Additions to existing hospitals continued to outnumber new hospital buildings. The proportion of additions increased from 57.4 percent of all projects in 1966 to 81.9 percent in 1975, which may help to explain the large increase in project cost between the two studies. Cost per square foot is generally higher for additions than for new hospitals, because extensive alterations to the original building are often required before new construction can begin.

Between the earliest and latest studies, the average number of square feet per project increased twice as much as the number of beds. This suggests that the newer hospitals contain more space for equipment and special purpose areas (such as diagnostic and therapy rooms, laboratories, and x-ray rooms) than the hospitals in the earlier studies.

Costs

Components of cost. The proportion of total hospital contract cost for onsite wages and salaries declined between 1966 and 1975, after increasing between the first and second studies (table 2). Materials, built-in equipment, and supplies showed a large decrease, from 53.2 percent of total contract cost in 1960 to 42.2 percent in 1975. The proportion of total cost for contractor's equipment increased slightly between the first and most recent studies. Profit and overhead (which includes interest expenses, salaries of offsite workers, supplementary wage benefits, office and other overhead expenses, and profit) jumped from 17.4 percent in 1960 to 27.7 percent in 1975. Higher interest rates and increases in salaries and supplementary benefits were the major factors contributing to this rise.

Materials costs. Materials, built-in equipment, and supplies accounted for the largest proportion of contract cost. Of the types of materials used, fabricated metal products had the highest cost per $1,000 of construction value (table 3). Stone, clay, glass, and concrete products were next, followed by electrical machinery and equipment. These three product groups accounted for more than half of all the materials used in hospital construction in 1975. The proportion of total material cost for electrical products increased between 1966 and 1975, replacing built-in equipment and nonelectrical machinery as the third most important product group.

Regional data

Project characteristics. Data compiled by region[6] reflect differences in project design, size, and cost (table 4). On average, the largest projects were in the South. Hospitals built in the South had the highest average cost, the most floor space, and took longer to build than those in all other regions. Hospitals in the Northeast were the smallest and the most expensive (per square foot). The majority of projects in the Northeast were small additions to existing hospitals; they contained relatively little floor space, and several included extensive rehabilitation work. Fewer hospitals were built in the West than in any of the other regions; thus, the difference between the proportion of additions and new buildings for that region and the United States as a whole.

Hours and wages. The South had both the lowest average hourly wage and the smallest ratio of wages to total contract cost. Onsite employee-hour requirements per $1,000 were highest in the South, which suggests that the relatively low wage rates in the region encouraged the use of labor intensive construction methods. Thus, the low wage rate is thought to be responsible for the South having the smallest ratio of wages to total contract cost, even though employee-hour requirements were highest. The North Central region had the highest average hourly wage, and was tied with the West for the largest ratio of wages to total cost. Employee-hour requirements were lowest in the Northeast, where the majority of projects were located in metropolitan areas. Because hourly wages and the availability of skilled workers are usually greater in metropolitan areas, employee-hour requirements tend to be lower for projects built in metropolitan rather than nonmetropolitan areas. ☐

Table 3. Cost of materials, equipment, and supplies used in hospital construction, 1975

Type of material	Cost per $1,000 of contract cost	Percent
All materials, equipment, and supplies	$442.24	100.0
Materials, built-in equipment, supplies	417.84	95.5
Agricultural products	.40	.1
Mining of nonmetallic minerals, except fuels	1.44	.3
Textile mill products	1.06	.2
Lumber and wood products, except furniture	13.18	3.0
Furniture and fixtures	10.06	2.3
Paper and allied products	1.73	0.4
Chemicals and allied products	4.48	1.0
Petroleum refining and related products	4.96	1.1
Rubber and miscellaneous plastic products	4.65	1.0
Stone, clay, glass, and concrete products	81.90	18.5
Primary metal products	43.73	9.9
Fabricated metal products	105.26	23.8
Machinery, except electrical	58.77	13.3
Electrical machinery, equipment, and supplies	66.74	15.1
Measuring, analyzing, and controlling instruments	15.11	3.4
Other materials and supplies	4.36	1.0
Construction equipment	24.40	5.5

NOTE: Detail may not add to totals due to rounding.

Table 4. Selected project characteristics for hospital construction, by region, 1975

Project characteristic	United States	Northeast	North Central	South	West
Average number of square feet per project (100 sq. ft.)	1,636.4	859.5	1,788.9	2,091.1	980.0
Average cost per project	$8,067,829	$6,400,883	$7,893,530	$10,028,83[illegible]	[illegible]
Average cost per square foot	$49.48	$74.48	$44.27	$47.87	$54.91
Average number of weeks of construction	154	145	149	174	121
Additions as a percent of all projects	81.8	87.7	85.7	84.3	49.5
New buildings as a percent of all projects	18.2	12.3	14.6	15.7	49.5
Percent of projects in metropolitan areas	49.9	62.6	44.5	48.9	49.5
Percent of projects in nonmetropolitan areas	50.1	37.4	55.5	51.1	49.5
Employee hours per $1,000 of contract cost	34.7	32.0	33.8	38.3	35.4
Average hourly wage	$7.90	$8.60	$8.70	$7.18	$8.29
Wages as a percent of total contract cost	27.7	27.5	29.4	26.1	29.4

FOOTNOTES

[1] Employee-hour estimates for 1980 were based on 1975 onsite employee-hour data, adjusted for price and productivity change. The deflator used to adjust the onsite hours for price change was the Bureau of the Census' cost index for nonresidential buildings: 1965–66—65.6; 1974–75—134.65; 1980—217. Productivity change was calculated by adjusting the change in onsite hours for prices between the 1966 study and the latest study. The average annual rate of change was 0.7 percent. Although most of the projects in the latest survey were completed in 1976, most of the construction value was put in place during 1974–75.

[2] Employment estimates were derived using 1,800 hours per year for onsite construction; 2,000 for offsite construction; 2,068 for manufacturing; 1,779 for trade, transportation, and services; and 2,025 for mining and all others.

[3] Offsite employee hours were estimated using the ratio of nonconstruction employees to total employees for special trade contractors in the contract construction industry, as reported in *Employment and Earnings*, Bulletin 1312–11 (Bureau of Labor Statistics, 1979). This ratio was applied to the onsite hours obtained in the survey, which had been adjusted for the hours worked by administrative and clerical employees.

[4] Indirect employee hours were calculated using inter-industry growth models. Data on materials and equipment were grouped by type, and the dollar amounts for each group were adjusted by the appropriate producer price index. The data were then processed through the Bureau of Labor Statistics' input-output model to determine the number of employee hours required per $1,000 of construction for each industry group.

[5] The first two surveys are referred to as the 1960 and 1966 studies; however, most of the construction occurred during 1959–60 and 1965–66, respectively. See *Labor Requirements for Hospital Construction*, Bulletin 1340 (Bureau of Labor Statistics, 1962); Herman J. Rothberg, "Labor requirements for hospital construction, 1959–60," *Monthly Labor Review*, October 1962, pp. 1120–24; *Labor and Material Requirements for Hospital and Nursing Home Construction*, Bulletin 1691

(Bureau of Labor Statistics, 1971); and Martha Farnsworth Riche, "Man-hour requirements decline in hospital construction," *Monthly Labor Review*, November 1970, p. 48.

[illegible] Data were provided for the continental United States and four broad geographic regions. The States included in each region were: *Northeast*—Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; *North Central*—Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; *South*—Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; and *West*—Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Impact of new electronic technology

RICHARD W. RICHE

The steady stream of technological progress that has characterized our society in America has resulted in higher productivity, elimination of many menial and dangerous jobs, higher wages and shorter hours, and a continuous flow of new products and services which have resulted in a higher standard of living. New industries employing thousands of workers have been formed to manufacture computers, electronic products, and technologies to provide energy and control the environment.

To be sure, innovation in industries such as longshoring, agriculture, and printing, to name a few, has eliminated jobs and required workers to acquire the unfamiliar skills associated with new technology. For some, the adjustment has been painful. But on balance, there is general agreement that the benefits of new technology far outweigh the disadvantages, and that innovation has led to economic progress, new job opportunities, and a more prosperous society.

At this point, early in the decade of the 1980's, there is widespread agreement that the pace of diffusion of technologies which incorporate advanced electronics will be accelerated over the next few years. The experience in the United States suggests that as long as the economy is growing, the introduction of innovations with potential for productivity gains can be compatible with rising employment. When computers were first introduced for office data applications, for example, frequently predictions were made that large numbers of clerical and kindred workers would be displaced and that job opportunities for millions would be curtailed. What actually did happen was quite different. In 1960, clerical workers in the United States numbered about 10 million and accounted for about 15 percent of total employment. By 1980, there were more than 18 million clerical workers and they accounted for about 19 percent of the total. Thus, instead of decreasing as had been predicted, clerical employment increased about 85 percent. And, it is projected to grow significantly to 1990.

Why did clerical employment increase instead of decreasing as predicted? First, normal growth in the volume of clerical work exceeded jobs eliminated by the computer. Second, computers made possible work that was previously impractical because it would have been too costly and too time consuming. Using computers, managers can now prepare reports and analyses that previously were desirable but too costly.

In addition to creating employment by expanding the scope of activities for many industries, the computer required new occupations such as systems analysts, programmers, keypunch operators, console operators, and tape librarians. And new industries were established to manufacture computers and related equipment, creating a variety of occupations and employing thousands.

Technological change can cause job displacement, especially when the industry is concentrated in a particular region or locality. Sometimes the employment impact is direct, as in the case of agriculture. In most cases, however, the effect is less obvious. Output does not advance at the same rate as productivity in all industries or plants, and consequently some industries register employment declines while others register increases. Regardless of the reason, displacements are costly for both the individual and the Nation.

This report examines four major technological changes under way in the United States and discusses prospects for their further diffusion. The four areas are microelectronics, industrial robots, telecommunications, and office automation.

The development of *microprocessors and microcomputers* in the early 1970's, and their widespread diffusion as we enter the 1980's, is a major innovation in electronics. Over the past three decades, the transistor that replaced the bulky vacuum tube was a first step in the development of miniaturized semiconductor integrated circuits which provide more power and reliability in a significantly smaller package. A microprocessor unit contains thousands of electronic components and complex circuits on a silicon chip less than one centimeter square. The unit can be combined with memory and input-output capability to build a microcomputer.

The use of microelectronics has had a significant im-

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pact on American consumers, workers, and manufacturing operations. A vast array of products—calculators, digital watches, video games, TV sets, and microwave ovens, to name a few—incorporate microprocessors and microcomputers. But behind the scenes in American manufacturing plants, production technologies and manufacturing methods are undergoing equally dramatic changes. Microelectronics are being incorporated in systems which control key production equipment, such as industrial robots and numerically-controlled machine tools. Moreover, microelectronic devices increase the processing capability of word processors, computers, data transmission and copying devices, automatic checkout counters, and other such equipment used by banks, insurance companies, and retail and wholesale establishments.

The *industrial robot* is a second major technological innovation capturing current attention. The Robot Institute of America defines a robot as "a reprogrammable multifunctional manipulator designed to move material, parts, tools, or specialized devices through variable programmed motions for the performance of a variety of tasks." According to the institute, about 4,000 robots are in use in U.S. establishments, with a large share in automobile manufacturing plants. They perform tasks such as material transfer, die casting, spot welding, spray painting, and limited assembly. Although U.S. industry is increasing its use of robots, Japan leads the world in robot use with more than triple the number of installations in the United States.

There is little information on the impact of robots on productivity and employment. However, evidence suggests that, following installation of robots, productivity is increased, unit labor requirements frequently are lowered, and quality control is improved. At one large manufacturer of refrigerators, for example, a robot sprays paint on refrigerator liners twice as fast as the two-person crew that it replaced.[1] The future impact of robots on productivity and employment will depend on the extent of development and diffusion of new generations of robots that can "see and feel."

Technological changes in *telecommunications* are underway in all major segments of the industry. These innovations are boosting productivity and changing the type of labor required in the two basic processes of telephone communication—call switching and signal transmission. The electronic computer is used extensively in both processes, as well as in other operational tasks and in management and accounting functions.

In call switching, electronic switching systems use high speed computers to handle local and long-distance calls. A growing share of calls is handled by electronic switching systems; total conversion is anticipated by the year 2000. These systems can handle three to four times more calls than electromechanical systems.

Sharp gains in long-distance volume have led to two innovative and important technologies in signal transmission—the millimeter waveguide and fiber optic cables. Both have far greater call-handling capabilities than the existing coaxial cables and microwave relays. The millimeter waveguide is essentially an underground tube through which signal-carrying waves are transmitted. It is designed for use on high density communication routes. Currently, this technology is being tested; future diffusion will depend on call volume growth.

Fiber optic cables for signal transmission are expected to become a major transmission medium in the 1980's. In this technology, glass fiber cables are combined with semiconductor light sources for very high capacity transmission. The fiber cables are compact, resist electrical interference, and interface well with digital switching and transmission techniques.

Other major changes anticipated for the telecommunications industry include further expansion of satellite communication, digital transmission, computerized systems for maintenance and testing, and automation of switching and billing tasks. Experts also foresee nontraditional uses of the communications network for electronic funds transfer in banking, electronic postal service functions, and data systems for the home which will combine communications and data processing capabilities.

Office *data handling and communication* is a fourth area where major technological change has occurred. A large segment of the Nation's work force, including more than 18 million clerical workers, is engaged in producing and processing data. Historically, capital investment in the office has lagged that of other operations, with investment per office worker amounting to less than $2,000, compared with about $25,000 per factory worker.[2]

This "investment gap" may be closed in the years ahead. Investment in office technologies will likely accelerate during the 1980's, as managers turn to modern data handling technologies to reduce labor, material, and related expenses. The largest share of office costs are deemed to be labor-related—a strong incentive for further mechanization.

Specific technologies to be diffused more widely include more powerful electronic computers; advanced model word processors; new equipment and techniques to store, retrieve, and transmit data on microfilm; and electronic mail networks. Increasingly, paper will be replaced by electronic images on a screen which can be transmitted by telecommunication methods.

General impact of innovations

Following are conclusions from the Bureau of Labor Statistics' research on the implications of technological change for the work force.

- While all industries are experiencing technological change, the pace varies among and within industries. Each industry has its own story and it is not always in terms of computer technology and advanced automation. But even conventional changes, such as materials handling mechanization or the installation of larger capacity equipment or machines with faster speeds, are often major developments requiring workers to obtain new skills.
- The size of investment required, the rate of capacity utilization, and institutional arrangements are some of the factors that act as an "economic governor" on the speed of diffusion of technological change and, in turn, possible employment implications.
- Industries with greater application of technological advances generally experience larger increases in productivity (examples, air transportation and telephone communication); industries lagging in application of technological advances generally experience smaller or negative changes in productivity (examples, footwear and wood household furniture).
- The content of jobs and the qualities required of workers are being modified by technological changes. There is less demand for manual dexterity, physical strength for material handling, and for traditional craftsmanship. In contrast, employers are placing more emphasis on formal knowledge, precision, and perceptual aptitudes. As many manual tasks are mechanized, unskilled workers become monitors of very expensive equipment. The reduction in repetitive tasks that are so dissatisfying to the industrial worker may be welcomed, but the isolation and constant monitoring associated with advanced technology can create new stresses.
- Higher educational achievement of workers is becoming essential. The ability to read and write at a functional level is mandatory to interpret operating instructions of complex equipment, and to be retrained for the new skills demanded by changing technology.
- Many new occupations created by new technologies can be filled by retraining employees. Most retraining is accomplished in-plant and includes on-the-job and classroom instruction.
- In general, relatively few employees have been laid off because of technological change. This is due, in part, to the use of various techniques by the private sector to minimize adverse effects to the worker—techniques such as providing advance notice, retraining, and reassigning displaced employees to new jobs. □

FOOTNOTES

[1] "Robots Join the Labor Force," *Business Week*, June 9, 1980, pp. 62–76.

[2] Philip H. Dorn, "The Automated Office—The Road to Disaster?" *Datamation*, Nov. 15, 1978, pp. 154–62.

Research Summaries

Forgotten unemployment: recall bias in retrospective data

FRANCIS W. HORVATH

It is a well documented fact that the ordering and specific wording of a survey questionnaire can produce different "readings" of the same underlying event. Differences can also arise when the same general question is asked of individuals at different times.

One area in which such discrepancies have been found is in comparisons of unemployment data collected on a monthly basis with those obtained from a once-yearly survey. The source of the monthly unemployment figures is the Current Population Survey (CPS), conducted by the Census Bureau for the Bureau of Labor Statistics. Each month, representatives of approximately 60,000 households are asked questions about their labor force activity and that of other household members during a given reference week. Annual unemployment estimates are constructed by averaging monthly data for the year.

Annual unemployment data are also obtained, on a retrospective basis, from the Work Experience Supplement to the Current Population Survey in March of each year. Persons responding to the supplement questions are asked to recall events which occurred from January through December of the previous year. These respondents are asked to aggregate the year's labor force activities into summary figures. That is, they are asked questions such as: "How many weeks was (household member's name) looking for work?" and "How many weeks was (household member's name) working?" However, no attempt is made to ascertain the months in which these events took place.

The supplement data reflect the number of persons with unemployment at any time during the previous year; a person experiencing two or more spells of unemployment is counted only once. Recently, this estimate has been about 18 to 21 million persons a year. In contrast, the annual average of the unemployment data collected monthly—simply the sum of the 12 monthly estimates (unadjusted for seasonality), divided by 12—represents the mean number of persons unemployed during a "typical" week of the year. This figure was about 5 to 7 million during 1975–79. On the surface, these two figures appear unconnected. However, because the Work Experience Supplement also includes questions on the duration of unemployment in the previous year, it is possible to directly relate the retrospective supplement information to the annual averages of the monthly data.

The basic method, developed by Daniel Suits and Richard Morgenstern,[1] derives the total number of weeks of unemployment occurring in the labor force during the full year from the Work Experience Supplement. Specifically, persons are grouped according to the supplement information into "duration of unemployment" intervals. Multiplying the number of persons in each group by the midpoint (in weeks) of the duration interval yields an estimate of the total weeks of unemployment occurring to persons within that particular cell. The sum over all cells provides an estimate of the total weeks of unemployment occurring in the labor force over the year. Dividing this total by 52 gives the adjusted supplement estimate of a typical week's unemployment, roughly comparable to the results from the monthly studies.

Exhibit 1 shows this basic relationship, using hypothetical data. Over a given year, there are 155 individuals reporting some unemployment. Suppose that most of these are unemployed in 1 month only, and during all other months they are either employed or not in the labor force. However, assume that 25 of the 155 report unemployment in 2 consecutive months. In the monthly survey, then, the total reported instances of unemployment would be 180; annual average unemployment would be 180 divided by 12, or 15 individuals. With an accurate annual retrospective survey, the number of persons reporting some unemployment during the entire year would be 155—180 less the 25 who were unemployed over a 2-month period. Dividing reported weeks of total unemployment by 52 yields the "adjusted" retrospective estimate, which is exactly equal to the annual

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Exhibit 1. Derivation of annual average unemployment from the monthly CPS and from the annual Work Experience Survey

Based on monthly measurements:

- $\text{Annual average unemployment} = \dfrac{\text{180 reports}}{\text{12 months}} = 15$

Based on retrospective annual survey:

- Of 155 persons with any unemployment, 130 were unemployed for 1 month (4.33 weeks) and 25 were unemployed for 2 months (8.67 weeks).
- Annual average unemployment =

$$\frac{(\text{130 persons} \times \text{4.33 weeks}) + (\text{25 persons} \times \text{8.67 weeks})}{\text{52 weeks per year}} = 15$$

average from the monthly survey.

It has previously been noted that these adjusted Work Experience Supplement estimates are usually less than the comparable annual average figures, particularly among women and youth.[2] However, the reasons offered for the overall understatement have been largely conjectural.

One plausible reason for the difference between the two sets of estimates is that respondents to the supplement forget events which took place further in the past. Unless very recent or relatively long, a spell of unemployment might be forgotten by the person who encountered it, and it is even more likely to be overlooked by another household member who may be answering the work experience questions for the entire household. This forgetting should be greater for unemployment which took place long ago than for that which occurred in the recent past.

Two studies on underreporting of past unemployment form the basis for this hypothesis. During 1969–71, the Census Bureau conducted a special reinterview program in which the same respondents were asked labor force questions in 2 consecutive months.[3] The second month's survey included a retrospective interview on events occurring in the first month. Analysis of the results revealed that people did not consistently place themselves in the same labor force categories they had earlier. In particular, *unemployment in the first month was understated significantly in the second interview.* Analysts noted that: "biases in labor force status due to recall are quite high and at an unacceptable level of quality." A follow-up study found the same pattern among both men and women. Apparently, recall errors are a serious problem even over as brief an interval as 1 month.

The question of "recall bias" has also been the subject of an inquiry by Statistics Canada in relation to its retrospective Annual Work Patterns Survey.[4] During January of each year since 1978, the Canadian statistical agency has conducted this supplemental survey, in which respondents are asked labor force questions pertaining to the previous calendar year. The Canadian survey differs from the U. S. Work Experience Supplement in that persons are asked to describe their labor force activities in each of the 12 preceding months. For example, the Canadian respondent actually identifies "July" as a month in which he or she worked or looked for work. When Canadian analysts compared the answers to these retrospective questions to their ongoing monthly labor force surveys, they found a "substantial, systematic recall bias." *In the early months of the year,*

Table 1. Comparison of adjusted Work Experience Survey unemployment with annual average of monthly unemployment from the CPS, 1967–79

[Numbers in thousands]

Year	Annual unemployment data from Work Experience Survey			Annual average of CPS unemployment for a typical week (4)	Percent understatement[2] (5)
	Total with unemployment during the year (1)	Average duration of unemployment (in weeks) (2)	Adjusted estimate of weekly unemployment[1] (3)		
1967	11,561	10.05	2,234	2,976	24.9
1968	11,372	9.55	2,088	2,817	25.9
1969	11,741	9.73	2,197	2,832	22.4
1970	14,565	12.33	3,453	4,088	15.5
1971	15,852	14.06	4,286	4,993	14.2
1972	15,280	13.41	3,941	4,840	18.6
1973	14,499	11.99	3,343	4,304	22.3
1974	18,535	13.04	4,647	5,076	8.5
1975	21,101	16.27	6,601	7,830	15.7
1976	20,447	15.82	6,221	7,288	14.6
1977	19,512	14.64	5,495	6,855	19.8
1978	17,758	13.73	4,682	6,047	22.6
1979	17,972	13.27	4,585	5,963	23.1
Average	16,167	12.91	4,136	5,099	19.1

[1] (Column 1 × Column 2)/52.

[2] (Column 3 – Column 4)/Column 4.

Table 2. Half-year averages of monthly unemployment from the CPS, 1967–79

[Numbers in thousands]

Year	Total		Men		Women	
	January through June	July through December	January through June	July through December	January through June	July through December
1967	3,006	2,944	1,602	1,413	1,406	1,531
1968	2,950	2,683	1,555	1,284	1,395	1,400
1969	2,798	2,865	1,419	1,387	1,379	1,478
1970	3,756	4,421	2,092	2,379	1,664	2,042
1971	5,101	4,865	2,927	2,625	2,174	2,260
1972	5,090	4,590	2,916	2,355	2,175	2,236
1973	4,476	4,134	2,438	2,043	2,037	2,091
1974	4,788	5,364	2,600	2,735	2,188	2,628
1975	8,143	7,516	4,676	4,093	3,467	3,423
1976	7,430	7,146	4,195	3,742	3,235	3,404
1977	7,281	6,430	3,993	3,183	3,288	3,247
1978	6,264	5,830	3,302	2,800	2,962	3,030
1979	6,022	5,905	3,129	2,907	2,893	2,998
Average	5,162	4,978	2,834	2,534	2,328	2,447

unemployment is seriously understated, with the bias declining and then reversing towards the end of the year. That is, some of the unemployment in January of the previous year is "forgotten," while recent unemployment in December is overstated.

Because the U. S. Work Experience Supplement relies on recall of events which took place as much as 15 months earlier, it seems logical to expect the forgetting of past unemployment to affect this survey as well. The following discussion illustrates one method with which this intuitive expectation can be tested.

A new look at retrospective bias

Table 1 lists annual averages from the monthly surveys and the adjusted supplement estimates for the years 1967–79. As previously indicated, the retrospective unemployment figures from the supplement are consistently less than the annual averages from monthly data. For the labor force as a whole, the degree of understatement ranged from about 9 to 25 percent and averaged 19.1 percent over the period.[5] The understatement appeared to be smaller during periods of increasing unemployment, such as 1974–75.

The annual averages in table 1 treat each month equally, in the sense that each month constitutes one-twelfth of the average. If the Work Experience survey provided completely parallel estimates of both the incidence and total duration of unemployment, figures from the supplement and from the monthly surveys should be exactly equal. Because the annual averages weight each month equally, it is perfectly acceptable to combine the monthly data into two sets—January through June, and July through December—and treat them each as contributing one-half the annual average. While this treatment is nothing more than a mathematical identity, it provides a convenient tool which may be used to examine the retrospective bias of the March supplement. That is, each half year average of monthly information can be examined for correspondence with the Work Experience data.

Table 2 shows the 6-month averages of monthly unemployment figures for the total, and by sex, for the 1967–79 period. In general, total unemployment has been greater during the 6 six months of the year. Note, however, that this does not hold for women, who report higher levels of unemployment during the last 6 months.

Because the corresponding adjusted supplement figures (not shown) all fall below these half-year averages, a simple comparison of the data would make it appear that the 6-month period with lower observed unemployment is "closer" to the Work Experience estimates. For men, the second half of the year is "more similar" to the supplement figures, while the first-half averages are closer for women.

Obviously, each of the 6-month averages contributes one-half to the annual average. If the adjusted supplement count is exactly analogous to the annual average of monthly data, then it too should be a composite of the two periods. That is, given:

$$(1)\quad \underset{\text{unemployment}}{\text{Annual average}} \equiv (0.5)\,\underset{\text{6-month average}}{\text{January-June}} + (0.5)\,\underset{\text{6-month average}}{\text{July-December}}$$

and

$$(2)\quad \underset{\text{unemployment}}{\text{Annual average}} = \underset{\text{unemployment}}{\text{Adjusted Work Experience}}$$

then

$$(3)\quad \underset{\text{Experience unemployment}}{\text{Adjusted Work}} = (0.5)\,\underset{\text{6-month average}}{\text{January-June}} + (0.5)\,\underset{\text{6-month average}}{\text{July-December}}$$

A simple test is proposed to examine this relationship. The adjusted Work Experience figure, W_e, is regressed on the two 6-month averages as:

$$W_e = a + b_1 (JJAV) + b_2 (JDAV) + u$$

where a is a constant term, JJAV is the 6-month average of the unemployment counts for January through June, JDAV is the average for July through December, and u is the disturbance term, assumed to be independently distributed, with a zero mean and constant variance.

Because both halves of the year should figure equally into the cumulative total, we should expect $b_1 = b_2$. More specifically, if the adjusted supplement unemployment were an exact measure of the incidence and the length of unemployment, we should find $a = 0$, and $b_1 = b_2 = 0.5$. That is, there would be no understatement, and each half of the year would count equally towards the cumulative total. This should hold regardless of any size differences in unemployment between the two halves of the year.

Table 3 shows the coefficients obtained when the relationship was tested on total, male, and female unemployment. The differences between expectations and the results of this simple test are stunning.

In each case, the second half of the year appears to have much more weight in the adjusted supplement estimates than the first half. The coefficients for the second half of the year are all greater than 0.5, and are significantly related to the degree of unemployment reported in the Work Experience Supplement. On the other hand, the coefficients for the first half of the year indicate little relationship at all; no estimate of b_1 was significantly different from zero at a 90-percent confidence level. All of the second-half coefficients are at least four times as great as those of the first half.

These results seem to support the contention that unemployment in the first half of the year is "forgotten" in the Work Experience Supplement relative to the more recent second half, which is closer to the week in March when supplement questions are asked. The Work Experience data still unexplainably understate the unemployment of certain demographic groups by differential amounts. However, the foregoing analysis indicates that recall bias does play an important part in the general shortfall, which appears strongly in evidence even when the data are disaggregated by sex. ☐

Table 3. Regression of adjusted Work Experience unemployment on half-year averages of monthly unemployment from the CPS, 1967–79

[t-statistics in parentheses]

Adjusted Work Experience unemployment	Estimates of —			R^2
	a	January–June coefficient b_1	July–December coefficient b_2	
Total	−416.30 (−2.20)	0.07 (0.53)	0.84 (5.34)	0.98 —
Men	−107.28 (−1.17)	.18 (1.64)	.81 (6.26)	.98 —
Women	−222.93 (−1.78)	.06 (0.25)	.73 (2.95)	.96 —

FOOTNOTES

[1] Daniel B. Suits and Richard D. Morgenstern, "Duration as a Dimension of Unemployment," Paper presented at the Econometric Society Meetings, Washington, December 1967.

[2] Richard D. Morgenstern and Nancy S. Barrett, "The Retrospective Bias in Unemployment Reporting by Sex, Race and Age," *Journal of the American Statistical Association*, June 1974, pp. 355–57; and Wayne Vroman, "Measuring Annual Unemployment," Unpublished paper (Washington, The Urban Institute, 1979).

[3] See Louis E. Williams, "Methods Tests Phase III, First Report on the Accuracy of Retrospective Interviewing and Effects of Nonself Response on Labor Force Status," Memo, Bureau of the Census, June 24, 1969; Charles Jones and Robert Aquilino, "Methods Tests Phase III, Second Report . . .," Memo, Bureau of the Census, Jan. 29, 1970; and Robert Aquilino, "Methods Tests Phase III, Third Report . . .," Memo, Bureau of the Census, Apr. 2 1971. These special studies should not be confused with the regular CPS reinterview program, in which a percentage of households are reinterviewed as a quality check on the data. The special program allowed separate study of proxy response versus self-response, as well as "recall" bias.

[4] For a description of the Canadian Annual Work Patterns Surveys and selected data from them, see *Patterns of Full- and Part-Year Employment and Unemployment: Results From the Annual Work Patterns Surveys for 1977 to 1980* (Statistics Canada, Catalog No. 71-531, forthcoming).

[5] These figures are slightly higher than estimates provided by Barrett and Morgenstern, and Vroman. One reason for the difference is that this study used unpublished Work Experience data which shows finer detail for duration-of-employment intervals. The midpoints of the most detailed interval size available were used for all years. For the open-ended interval, "40 weeks or more" of unemployment, 44 weeks was used as the midpoint, rather than 46. The procedure indicated was used by Morgenstern and Barrett in the original article on unemployment underreporting. Unpublished information on persons unemployed 27–39 weeks was also used.

Easing the hardship of plant shutdowns

The Bureau of Labor Statistics' 1980–81 study of major collective bargaining agreements found that companies are providing more protection for covered employees affected by plant shutdowns and movements, greater opportunities for interplant transfers, and more frequent relocation allowances. The study reviewed 1,593 agreements, each covering 1,000 workers or more in private industry, excluding railroads and airlines.

Among a sample of 522 of the contracts, 36 percent placed some restriction on management's right to close or relocate plants—up from 22 percent in a 1966–67 study. Although the majority of the sample agreements were in the nonmanufacturing sector, more than two-thirds of the contracts imposing restrictions were in manufacturing.

Interplant transfer provisions were included in 552, or 35 percent, of the 1,593 contracts surveyed. Such clauses appeared in 37 percent of the manufacturing agreements, and 33 percent of those in nonmanufacturing. When a similar study was conducted 13 years earlier, 32 percent of all agreements dealt with interplant transfers.

In 1980–81, provisions that required a company to pay all or part of an employee's relocation expenses were found in 41 percent of the agreements having interplant transfer clauses, compared with 34 percent in 1966–67. In manufacturing, 36 percent of the contracts specified these payments, compared with 46 percent in nonmanufacturing.

The detailed report on the study, *Major collective bargaining agreements: plant movement, interplant transfer, and relocation allowances*, BLS Bulletin 1425–20, is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Price $4.75. □

Bilateral protection

The mutual accommodations and adjustments to the hard issues of collective bargaining that the parties have displayed in regard to wages, employee benefits, and institutional issues is no less in evidence when one inspects the current status of the administrative issues in our labor-relations system. Management has increasingly recognized the job-protection and working-condition problems of the industrial employee and has made important concessions in these areas. At the same time, however, there has been reciprocal recognition on the part of unions that the protection of the employee cannot be at the expense of the destruction of the business firm. The axiom that employees cannot receive any protection from a business that has ceased to exist appears to have been fully appreciated by all but the extreme recalcitrants of the labor movement, and workable compromises have been possible with respect to the areas of seniority, discipline, and the various other dimensions discussed no less than in the case of previous topics.

—ARTHUR A. SLOANE AND FRED WITNEY
Labor Relations, 4th ed.
(Englewood Cliffs, N.J., Prentice-Hall,
Inc., 1981), p. 442.

Major Agreements Expiring Next Month

This list of collective bargaining agreements expiring in April is based on contracts on file in the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more.

Employer and location	Industry	Union[1]	Number of workers
All-Steel, Inc. (Aurora, Ill.)	Furniture	Boilermakers	1,300
American Can Co. (Wisconsin)	Paper	Paperworkers	1,650
Associated General Contractors of America, Inc.:			
Baton Rouge Chapter, 2 agreements	Construction	Operating Engineers; Carpenters	4,500
Chattanooga Chapter (Interstate)	Construction	Carpenters	2,500
East Tennessee Knoxville Chapter, 2 agreements	Construction	Operating Engineers; Laborers; Teamsters (Ind.)	3,600
Florida West Coast Chapter	Construction	Laborers	1,400
Lake Charles Chapter	Construction	Carpenters	1,900
Michigan Chapter	Construction	Laborers	1,000
Mid-Florida Chapter	Construction	Carpenters	1,700
Northeast Florida Chapter	Construction	Carpenters	1,200
Ohio Chapter, 2 agreements	Construction	Laborers; Carpenters	4,000
Wisconsin Chapter	Construction	Carpenters	2,400
Associated Producers & Packers, Inc. (Washington)	Food products	Teamsters (Ind.)	1,500
B.F. Goodrich Co. (Interstate)	Rubber	Rubber Workers	9,350
Bloomingdale Brothers, Inc. (New York, N.Y.)	Retail trade	Bloomingdale Department Store Employees Union; Distributive Workers Union (Ind.)	5,600
Building Trades Employers Association and 1 other, 2 agreements (New York)	Construction	Laborers; Carpenters	5,800
Building Trades Employers Association, 2 agreements (Interstate)	Construction	Carpenters; Bricklayers	6,300
California Conference of Mason Contractors Association, Inc.	Construction	Bricklayers	4,000
Carpenters Contractors Association of Cleveland and 2 others (Ohio)	Construction	Carpenters	5,000
Carpenters General Contracting Agreement (Georgia and Florida)[2]	Construction	Carpenters	1,500
Central Maine Power Co. (Augusta, Maine)	Utilities	Electrical Workers (IBEW)	1,100
Chicago Bear Wholesalers Association (Illinois)	Wholesale trade	Teamsters (Ind.)	1,350
Cleveland Plumbing Contractors Association (Ohio)	Construction	Plumbers	1,300
Colt Industries, Inc., Firearms Division (Connecticut)	Miscellaneous manufacturing	Auto Workers (Ind.)	1,300
Consolidated Papers, Inc. and Consoweld Corp. (Wisconsin)	Paper	Paperworkers	2,700
Construction Employers Association and 3 others, 2 agreements (Ohio and Kentucky)	Construction	Laborers	5,100
Construction Employers Association, Inc., and 2 others (Kentucky)	Construction	Laborers	2,100
Contractors Association of Westchester, Putnam and Dutchess Counties, Inc. (New York)	Construction	Operating Engineers	1,250
Emhart Industries, Inc., Berlin Plant Hardware Division (Connecticut)	Fabricated metal products	Machinists	1,900
Firestone Tire & Rubber Co., Master Agreement (Interstate)	Rubber	Rubber Workers	15,250
General Foods Corp., Food Products Division (Woodburn, Oreg.)	Food products	Teamsters (Ind.)	1,400
General Telephone Co. of Indiana, Inc.	Communication	Communications Workers	2,200
Goodyear Tire & Rubber Co. (Interstate)	Rubber	Rubber Workers	22,300
GTE Automatic Electric, Inc., 2 agreements (Illinois)	Electrical products	Machinists; Electrical Workers (IBEW)	4,500
Hawaiian Telephone Co.	Communication	Electrical Workers (IBEW)	3,700
Ingersoll-Rand Co. (Painted Post, N.Y.)	Machinery	Electrical Workers (UE)	1,600
Iowa Beef Processors, Inc. (Dakota City, Nebr.)	Food products	Food and Commercial Workers	2,300
Johns-Manville Sales Corp. (Waukegan, Ill.)	Stone, clay, and glass products	Chemical Workers	1,000
Keystone Building Contractors Association and Central Pennsylvania Subcontractors Association (Pennsylvania)	Construction	Carpenters	4,000
Lynchburg Foundry Co., 2 agreements (Virginia)	Primary metals	Steelworkers	3,200

See footnotes at end of table.

Continued—Major Agreements Expiring Next Month

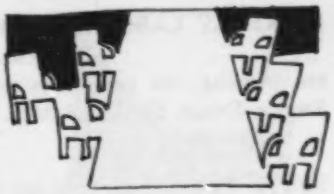
Employer and location	Industry	Union[1]	Number of workers
Magnavox Co., Magnavox Government & Industrial Electronics Co. (Ft. Wayne, Ind.)	Electrical products	Allied Industrial Workers	1,200
Mason Contractors Association (Cleveland, Ohio)	Construction	Bricklayers	1,950
Meat Industry Independent Shops in Chicago (Illinois)[2]	Food products	Food and Commercial Workers	2,950
Mechanical Contractor's Association of Cleveland, Inc. (Ohio)	Construction	Plumbers	1,700
Milton Bradley Co. (Springfield and East Long Meadow, Mass.)	Miscellaneous manufacturing	Retail, Wholesale, and Department Store	1,800
National Electrical Contractors Association, 2 agreements (Minnesota and Ohio)	Construction	Electrical Workers (IBEW)	2,900
Norris Industries, Price Pfister Brass Manufacturing Co., Inc. (California)	Fabricated metal products	Teamsters (Ind.)	1,200
Northeastern Florida Construction Management Negotiating Council	Construction	Operating Engineers	1,000
Northwestern Mutual Life Insurance Co. (Milwaukee, Wis.)	Insurance	Office and Professional Employees	1,500
Ohio Contractors Association (Interstate)	Construction	Carpenters	1,400
Owens-Corning Fiberglas Corp. (South Carolina)	Stone, clay, and glass products	Glass Bottle Blowers	1,400
Pan American World Airlines (Interstate)[3]	Air transportation	Airline Pilots	2,300
Public Service Electric & Gas Co. (New Jersey)	Utilities	Electric Workers (IBEW)	4,100
Quaker City Lumber Products Association (Pennsylvania)	Lumber	Carpenters	1,500
Ralston Purina Co., Van Camp Sea Food Co. (Delaware)	Food products	The Congress of Industrial Unions of Puerto Rico (Ind.)	1,850
Realty Advisory Board on Labor Relations, Inc. (New York)	Real estate	Service Employees	20,000
Retail Meat Cutters Contract (Kansas and Missouri)[2]	Retail trade	Food and Commercial Workers	1,200
Rock Hill Printing & Finishing Co. (South Carolina)	Textiles	Clothing and Textile Workers	1,250
Rock Products & Ready Mixed Concrete Employers of Southern California	Mining and quarrying	Teamsters (Ind.)	5,000
Schiffli Lace & Embroidery Manufacturers Association, Inc. (New Jersey)	Apparel	Textile Workers	1,000
Southwestern Michigan Contractors Association and 1 other	Construction	Laborers	1,450
Steel & Iron Contractors Association (Cleveland, Ohio)	Construction	Iron Workers	2,100
Truck Owners Association of Seattle, Inc. (Washington)	Trucking	Teamsters (Ind.)	1,000
Uniroyal, Inc., Production & Maintenance Employees (Interstate)	Rubber	Rubber Workers	8,300
United Parcel Service, Inc., 8 agreements (Interstate)	Trucking	Teamsters (Ind.)	43,600
Upholstered Furniture Manufacturers Association of Southern California	Furniture	Upholsterers	1,550
Wagner Electric Corp. and 1 other (St. Louis, Mo.)	Electrical products	Electrical Workers (IUE)	1,700
Waldbaum Inc., Food Mart Division (Connecticut and Western Massachusetts)	Retail trade	Food and Commercial Workers	1,500
Warner Lambert & Co. (Michigan)	Chemicals	Oil, Chemical and Atomic Workers	1,100

[1] Affiliated with AFL-CIO except where noted as independent (Ind.).

[2] Industry area (group of companies signing same contract).

[3] Information is from newspaper reports.

Developments in Industrial Relations



Second round of concessions at Uniroyal

The 4,200 Uniroyal, Inc., employees represented by the Rubber Workers have agreed to a second round of wage and benefit concessions expected to save the company $54.9 million. The first round, in July 1980, totaled $40 million. (See *Monthly Labor Review*, September 1980, p. 60.) Although Uniroyal earned a profit of $38.7 million during the first 9 months of 1981, compared with a $12.5 million loss during the first months of 1980, the company said the latest concessions were needed to further its "long-term plan for financial viability." Uniroyal also said the concessions will reduce the possibility that it will have to sell any of its operations to obtain money to strengthen its "core" operations.

Under the new concession accord, the union agreed to accept the same new contracts as the union negotiates with other major rubber companies when current agreements expire on April 20, 1982, modified to provide for up to $10 million a year less in wage and benefit improvements. They also agreed to continue the suspension of 69 cents an hour in cost-of-living adjustments that was initiated as part of the 1980 concession settlement (this amounts to about $8.3 million dollars a year, including the impact on those benefits that change when wages change).

There was speculation that the action would lead the other companies to press the union for concessions to maintain their competitive position relative to Uniroyal, even though their compensation costs are reportedly about $5 an hour less than Uniroyal's. These companies have won concessions at a few plants but not on a companywide basis as at Uniroyal.

In return for the union concessions, Uniroyal agreed to—

- Study its work force to determine if it has too many salaried employees.
- Establish a joint council to discuss mutual problems.
- Permit union president Milan Stone to make annual presentations to the company's board of directors.
- Open its financial records to the union.
- Establish a profit-sharing plan.
- Seek comparable wage and benefits concessions from other unions that represent some of its employees and to impose cuts on nonunion employees.

Gulf contract sets pattern for petroleum industry

Gulf Oil Corp. and the Oil, Chemical and Atomic Workers (OCAW) negotiated a 2-year contract which set a pattern for the petroleum refining, pipeline, and petrochemical industries. The terms covered more than 50,000 workers at 400 facilities owned by 100 companies. The only work stoppages were at the Texaco, Inc., and American Petrofina refineries in Port Arthur, Tex., where the companies declined to extend the current agreements on a day-by-day basis, pending completion of negotiations. The Texaco negotiations were further complicated by company efforts to reduce the lump-sum amount employees may choose to receive at retirement in lieu of receiving regular monthly pensions.

The Gulf accord provided for a 9-percent wage increase in January 1982 and for a 90-cent-an-hour increase in January 1983 that will average about 7.1 percent. The union did not win its demand for a no-layoff clause to protect workers from the recent job cutbacks that have hit the industry. According to union president Robert F. Goss, the companies have closed 50 facilities since 1980, eliminating 5,000 jobs in OCAW bargaining units. The industry is currently operating at about 70 percent of capacity.

The contracts also provide for the employers to raise their obligation for family health benefits by $17.50 a month in the first year and $13.50 in the second, bringing the total to $151.50 at Gulf. Gulf employees, who had been paying $30 a month, will pay the full amount of any increase in premium above $151.50. Gulf's obligation for single employees' health benefits also was raised, by $6 a month in the first year and $4 in the second. Gulf previously paid $47 a month, which covered the full premium cost for these employees.

The agreements also call for the companies that have instituted pension improvements for nonunion employees to extend those improvements to unionized employ-

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"Developments in Industrial Relations" is prepared by George Ruben and other members of the staff of the Division of Developments in Labor-Management Relations, Bureau of Labor Statistics, and is largely based on information from secondary sources.

ees. Among the companies that settled were Cities Service, Exxon, Shell, and Arco.

Shipyard employees paid for settling early

After 3 months of negotiations, General Dynamics Corp.'s Electric Boat Division and 11 unions agreed on a 3-year contract that supersedes the balance of a contract scheduled to expire July 1, 1982. In return for settling early, the 12,000 covered employees at the Groton, Conn., shipyard received a 25-cent-an-hour wage increase effective January 3. On July 1, 1982, they will receive an increase ranging from 20 cents an hour for those in the lowest pay grade to 75 cents for those in the highest grade, followed by a 30- to 65-cent increase July 1, 1983, and a 30- to 60-cent increase on July 1, 1984. All employees will also receive a 10-cent cost-of-living adjustment on November 27, 1983, and December 2, 1984, regardless of the movement of the Consumer Price Index. Prior to the settlement, pay rates ranged from $4.75 for certain accounting clerks to $10.83 for some skilled trades workers, with about 70 percent of the workers clustered at the $8.97 rate for first class mechanics.

The agreement also provided for each employee to receive a $100 payment in settlement of several thousand grievances they had filed over job assignments; a $2 increase in the pension rate, raising the amount to $14 a month for each year of credited service; adoption of a "magic 85" pension clause permitting workers to retire when their age and years of service total 85; and a change in the investment plan permitting employees to invest 10 percent of their earnings, instead of the previous 4 percent, with the company continuing to match half the amount.

Employee concessions aid steel company

McLouth Steel Corp.'s efforts to reorganize its operations under protection of Federal bankruptcy laws were aided when its 3,000 employees represented by the Steelworkers agreed to give up a 15- to 47-cent an hour wage increase scheduled for October 1982, all of the quarterly cost-of-living adjustments that would normally be effective in 1982, and $1.45 in wage increases that had gone into effect in the last 5 months of 1981. They also voted to give up 3 of the 11 holidays scheduled for 1982, and a week of vacation. McLouth estimated that the changes would save about $14 million in labor costs in 1982.

The settlement provides for restoration of wages and benefits to the proper level at the end of 1982—subject to court approval—if McLouth resumes dividend payments. The company lost about $40 million in 1981, compared with $56 million in 1980.

In conjunction with the settlement, McLouth announced a 27.5-percent reduction in its nonunion work force. A 10-percent pay reduction and a cut in paid vacation also were imposed on the retained nonunion employees.

Many of McLouth's problems resulted because the severe decline in automobile sales in the last few years has reduced the demand for flat-rolled steel, the company's major product.

Court bans withdrawal from multiemployer talks

In a 5 to 4 decision, the Supreme Court held that a contract bargaining stalemate does not justify employer withdrawal from a multiemployer collective bargaining association. The ruling validated the position of the National Labor Relations Board, which permits employers to withdraw before contract bargaining begins, but permits withdrawal only in "unusual circumstances" during the talks. Generally, the board has held that bargaining impasses and strikes are not unusual circumstances.

The court's ruling was in accord with the position of most unions, which view the prohibition of employer withdrawals as vital to the collective bargaining process. On the other hand, employers generally contend that the prohibition gives unions an unfair advantage and will reduce the number of firms joining multiemployer units.

The case arose in 1975 when Charles D. Bonanno Linen Service, Inc. of Medford, Mass., attempted to withdraw from an association of linen supply companies after bargaining with a Teamsters local reached an impasse, leading to a strike against the Bonanno company and a lockout of employees by the other companies.

Plumbers accept lower pay

In the Portland, Oreg., area, members of Plumbers Local 51 agreed to lower compensation for residential and repair work to counter a 38-percent unemployment rate for the local's 900 members. The manager of one plumbing company said the action will enable him to compete more effectively with nonunion companies by reducing the cost for a service call to $35–$40, from the $48.90 "break even" rate previously charged.

The new $14.39-an-hour compensation level the local negotiated with the Plumbing, Heating and Contractors Association consists of $12.25 in pay and $2.14 in employer payments for various benefits. The previous $23.74-an-hour level ($20.08 in pay and $3.66 for benefits) continues to apply to commercial work. ☐

Book Reviews

Jevons, labor, and the state, 100 years later—a centennial essay

H. M. Douty

W. Stanley Jevons' *The State in Relation to Labour*[1] appeared in 1882, the year of his death by drowning at the age of 46 off the south coast of England. Milton R. Konvitz, then professor of industrial and labor relations and of law at Cornell University, observed in 1948 that this book, together with some related lectures, " . . . will always have significance for persons concerned with principles of social legislation and the theoretical aspects of labor relations."[2]

The appearance of Jevons' book was one indication, among many, that the final quarter of the 19th century, and perhaps the 1880's in particular, marked ideological and institutional turning points for labor in the economies of both Great Britain and the United States.[3] In essence, the book provided a case for limited government intervention in the labor market within the confines of a generally competitive economic system. It also contained analyses of particular issues, such as arbitration and conciliation in labor disputes, that have not lost their force. Such general observations as, "All classes of society are trade-unionist at heart, and differ chiefly in the boldness, ability, and secrecy with which they push their respective interests" have a distinct air of modernity. In his preface, Jevons acknowledges indebtedness to two Americans, Joseph D. Weeks and Francis A. Walker, and there is a text citation to a study coauthored by Carroll D. Wright, then chief of the Massachusetts Bureau of Labor Statistics, and later the first U.S. Commissioner of Labor Statistics. Jevons was well known in academic circles in the United States, and *The State in Relation to Labour* circulated here.

Jevons was a man of extraordinary ability. He occupies a secure position in the history of economic doctrine through the development in his *Theory of Political Economy* (1871) of the marginal utility theory of value. But his interest also extended to a wide range of economic and social problems of his day. His first substantial publication (1865) dealt with the extent to which British industrial power rested on the exhaustible resource of coal. His investigations of problems of currency and finance, and of seasonal and cyclical movements in business activity, were inductive studies representing an immense achievement at a time when statistical data were hand-tabulated. In his monetary studies, Jevons solved virtually all the basic problems in the construction of price indexes.

Early in life, Jevons evidenced an interest in the working poor. His *Letters and Journals* (edited by his wife, 1886) indicate that Jevons, during his first years at University College in the early 1850's, took long walks through the poorest parts of London in an effort to gain practical insight into their condition. He continued to take such walks in Sidney, Australia, where, from 1853 to 1858, he worked as assayer at the mint, after the bankruptcy of his father's firm interrupted his formal education. Among his early projects, of which apparently only fragments were completed, were social studies of London and Sidney. More than a quarter of a century was to elapse before the appearance of his only major work relating directly to labor.

In *The State in Relation to Labour*, Jevons begins with a chapter on the principles of industrial legislation. A firm believer in individual liberty, he nevertheless suggests that a difficult question arises "whether, out of respect to some supposed principle of individual liberty, the state ought to allow men to go on working and living in the midst of needless risks." He concludes that "the first step must be to rid our minds of the idea that there are any such things as abstract rights, absolute principles, indefeasible laws, inalterable rules, or anything whatever of an eternal and inflexible nature." He draws a useful distinction between science, as embodied in general economic principles, and the adaptations and exceptions to principles that may be necessary for the practical betterment of society.

As a Benthamite, Jevons argues that the state is justified in passing any law "which, without ulterior consequences, adds to the sum of total happiness." Social

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legislation "becomes a complex calculus of good and evil. All is a question of probability and degree."

Jevons warns that legislation should be approached cautiously in an effort to anticipate its consequences. It should be rooted in experience and, if possible, based upon direct experiment. He cites the Poor Law Reform of 1834 as an instance of legislation based upon much empirical evidence, and Robert Owen's humane treatment of the workers in his cotton mills in New Lanark as an experiment that greatly contributed to the origin of the Factories Acts. Surely Jevons would have approved of recent experiments in this country with income maintenance programs.[4] Other "experiments" relating to proposed labor legislation can be imagined. After legislation has been enacted, Jevons holds that "the common practice of . . . remedying its mistakes, oversights, omitted cases, inconveniences, or unforeseen wrongs in successive amendment acts is really an application of the tentative or experimental method."

Jevons points to the need, in effect, for cost-benefit analysis in the enactment of social legislation. It is necessary not only to show, by evidence or direct experiment, that a measure will add to the sum of happiness within the community, but that there will not be an equivalent or greater subtraction of happiness. He believes this second factor is the more difficult to determine, but something for which science may offer some general guidance to the legislator, who "must gather to a focus the complex calculus of probabilities, the data of which are supplied by separate investigators." In the case of social legislation, the science primarily involved is economics, but the legislator should not "attribute exclusive value to the economic probabilities, and overlook moral, sanitary, political, and other probabilities."

After a discussion of general principles, Jevons considers the practical application of legislation as it relates to the liberty of the citizen. He begins with legislation for the inspection of certain commodities such as butter and meat, for weights and measures, and for sanitation. In these cases, the general criterion is the ability of the purchaser or consumer to make an informed judgment. Where this ability is poor or lacking altogether, there is room for government intervention, which, if judiciously undertaken, may increase rather than diminish the liberty of the individual.

A similar effect may result from state intervention in the labor market. Jevons notes that in England prior to the 19th century, "Legislation with regard to labour has almost always been class legislation . . . the effort of some dominant body to keep down a lower class, which had begun to show inconvenient aspirations." The Factories Acts, which had their origin in 1802, were different. He terms their consolidation in 1878 "one of the brightest achievements of legislation in this or any other country." This legislation had gradually improved the hours of work of children, young people, and women in manufacturing employment. Jevons justifies this legislation on the pragmatic grounds that its effects on health, the education of children, and the family enhanced general social well-being. He argues further that the principle of individual liberty would not preclude state imposition of labor standards on behalf of men, where, as in factory employment, workers must conform, in terms of working conditions, to the wishes of the majority, the will of the employers, or the customs of the trade "if it could be clearly shown that the existing customs are injurious to health, and that there is no other possible remedy."

Jevons presented a case, in light of 19th century conditions, for the prohibition of factory employment of married women, especially those with young children. Out of such work, he wrote, "arises a considerable part of the shocking infantile mortality prevailing in many parts of the manufacturing districts, accompanied by much immorality and intemperance not unnaturally produced by the destruction of home influences." He cites at some length a report on this subject issued in 1875 by the Massachusetts Bureau of Labor Statistics.

Jevons' discussion of trade union legislation is preceded by an analysis of the economics of wage determination, drawing in part upon the work of the American economist, Francis A. Walker. He concludes that "the rate of wages which workmen can demand will depend upon the relation of supply to demand of [each] particular kind of labour. The demand depends upon the expected value of the produce." He explicitly rejects the wages fund doctrine. There is certainly a foretaste of current human capital theory in his observation that one can argue, "In his education and training a skilled operative expends no small amount of capital, which remains invested in him, to be repaid by an annuity of higher wages during his available working life." But he rejects this argument when it involves restrictions on entry to employment, except where necessary in the public interest to ensure adequate worker training. His general view is that "whosoever tries to raise his own wages by preventing other persons from working at his trade, and thus makes his own kind of labour scarce, attempts to levy contributions from other people. It is simply a case of private taxation."

One might suppose that Jevons, in light of his general position on the adverse effects of trade restraint, would be sympathetic to state action to curb trade union intervention in the labor market. But, for two reasons, he rejects any return to the Combination Laws, which were intended for this purpose, and which had been effectively repealed many years earlier. The first reason was practical—"Our grandfathers and great-grandfathers, not to speak of earlier ancestors, did their best to crush all societies of working men, and ignominious was their failure. Are we likely to succeed better when the working-class order has become immensely increased in numbers, and increased almost equally in intelligence, organization, wealth, and general resources?" The second reason was that the prohibition of trade unionism, even if possible, "would suppress with much evil many germs of good." Jevons expresses approval of legislation, enacted in 1871 and 1876, that enabled British unions to register as friendly societies and thus secure protection of their funds and other property.[3]

At the same time, in a brief but interesting analysis, he assigned a minor role to strikes as a factor in wage advance, citing other causes, including changes in technology and in the capital-labor ratio, that had influenced the upward movement in wages in Great Britain in recent years. He pointed out that the rise in wages had been general, and had extended to mercantile and bank clerks, government employees, and other unorganized groups of workers. The law of supply and demand had even operated advantageously for "domestic servants, an exceedingly numerous class of persons quite devoid of organization, and often of an age and character little suited, it might be thought, to enforce concessions."

Jevons' book concludes with chapters on the law of industrial conspiracy, which considers the implications of the substantial repeal, in 1875, of the old common law doctrine regarding industrial disputes; on cooperation and industrial partnership, where profit-sharing is suggested as the ultimate solution to labor-management conflict; and on arbitration and conciliation. On arbitration, Jevons comes out strongly for grievance or rights arbitration, as now found almost universally in labor-management contracts in the United States but not in Britain. However, he argues against interest arbitration, because in the settlement of new contract terms, "There can be no certainty that the arbitrator knows better than the other parties." He sees, however, an important role for conciliation, and remarks that "a trade dispute, especially when it has reached the acute phase of a strike, has little or nothing to do with economics . . . and there is no theoretic reason why conciliators should not be called in, if experience shows that they are usually able to compose matters." He cites an 1879 report on arbitration and conciliation in England by an American, Joseph D. Weeks, as "probably the most valuable document published on the subject, describing both the successes and failures of the system," and an 1881 report on the same subject, also by Weeks, relating to New York, Ohio, and Pennsylvania. Jevons' final suggestion is that "in all probability success will best be obtained in the settlement of trade disputes by keeping lawyers and laws as much at a distance as possible."

Jevons wrote with admirable clarity. His small book on the role of the state in labor standards and labor relations was intended primarily for the lay reader. It presented a case for legislative intervention in the industrial relations process, based upon the careful accumulation and evaluation of evidence and, if possible, the use of experimentation, and divorced, to use John Stuart Mill's terminology when he repudiated the wages fund doctrine, from the unbending necessities of political economy. As such, it helped usher in the modern era in industrial relations in both Great Britain and the United States. In this country, it was cited as late as 1905 as supplementary reading in the admirable text on labor problems by Thomas Adams and Helen Sumner.[6] And after 100 years it can still be read with interest and profit. □

FOOTNOTES

[1] W. Stanley Jevons, *The State in Relation to Labour* (London: Macmillan, 1882). The book went through four editions, the most recent in 1910.

[2] See Milton R. Konvitz, "An Empirical Theory of the Labor Movement: W. Stanley Jevons," *The Philosophical Review*, January 1948, p. 60.

[3] In terms of ideology, a major development was the attack on and gradual abandonment among economists of the wages fund doctrine in both Great Britain and the United States. Institutionally, a relatively stable trade union movement had been created by 1880 in Great Britain through "new model" unions mainly of skilled workers, featuring high dues, sickness and other benefits, and apprenticeship programs. Union legal disabilities had been removed, and protective legislation for women and children in factory employment had been consolidated and improved. In the United States, the 1880's witnessed the meteoric rise and fall of the Knights of Labor, the establishment of the American Federation of Labor as a permanent trade union center, and the growth of labor statistics through State agencies and a Federal bureau.

[4] Robert A. Moffitt, "The negative income tax: would it discourage work?" *Monthly Labor Review*, April 1981, pp. 23–27.

[5] Jevons' views on trade unionism were also set forth in an address to the Trades Unionists' Political Association, Manchester, in 1868. The address was published after his death by his wife in a collection of papers entitled *Methods of Social Reform* (London, Macmillan, 1883), pp. 101–21.

[6] Thomas Sewall Adams and Helen L. Sumner, *Labor Problems* (New York, Macmillan, 1905), p. 501.

Probing labor market dualism

Dualism and Discontinuity in Industrial Societies. By Suzanne Berger and Michael J. Piore. New York, Cambridge University Press, 1980. 159 pp. $17.95.

In this work, Michael Piore continues to develop the theory of labor market dualism which he was among the first to articulate in the late 1960's and early 1970's. Here he identifies the sources of dualism as located in the division of labor, the instability of market economies, and the rigidities of large-scale production. Suzanne Berger lends a political dimension to the analysis: a dual labor force is fostered not only by economic conditions requiring cheap labor or the performance of "undesirable" jobs. It is also associated with the survival of "traditional" social classes or strata of small entrepreneurs.

The authors in effect reject conventional (that is, neoclassical) approaches to labor market theory. They hold that the segmentation of labor markets, exemplified by the "internal" labor markets of corporate and government bureaucracies, or by the relegation of racial and national minorities to the less desirable and less stable jobs, cannot be explained by the assumption that individuals seek to maximize their personal well-being in a presumptively competitive society. "In our perspective," they write, "the variations in human behavior and values are explained as responses elicited by different institutions, not as differences intrinsic to the persons who manifest them." Thus, they approach labor market analysis from the demand side. The reactions of workers to their labor market situation are never ignored—Piore devotes long chapters to them in his other recent work, *Birds of Passage*, in which he deals with migrant and immigrant workers, the prime examples of the work force that populates secondary labor markets. Yet, the authors see the dominant force in labor markets as originating among those who organize and control the production process, and in whose interest it is to secure a "variable" labor force so as to complement their "fixed" capital. True, labor, by means of collective bargaining, can to some extent impose the requirement of stable employment. But the persistence, even expansion, of dual labor markets demonstrates the resistance of owners of capital to accept labor as a "fixed" factor. The fragmentation of jobs incident to the division of labor in the workplace represents an added source of demand for "variable" labor: although meant to raise efficiency, the capacity demand for which such fragmentation is ultimately designed cannot be sustained over the business cycle. Labor's struggle for job tenure and job integrity thus tends to be rendered ineffective when it is not repressed. The assumption of a harmony of interests between labor and capital, implied by neoclassical labor market theory, is vitiated.

The dual labor market theory and the conflicts it postulates is akin to aspects of Marxism. Yet, the authors reject the relevant Marxist teachings of struggle between broadly defined classes, inasmuch as their own concerns—the differentiation *within* both the class of workers and the class of capitalists—are not central to Marxism. In fact, the persistence of the "traditional" sector of small, often still craft-based entrepreneurs and, more generally, of a large self-employed middle class in all industrial and industrializing countries has been a puzzle to scholars who accept Marxism as paradigmatic social science. They have conventionally assumed that this strata of capitalist society is doomed to disappear. Berger and Piore in contrast believe that small entrepreneurs constitute a permanent feature of industrial society, essential to its survival. Cleavages, whether they involve racial and national minorities; the traditional and the modern sector; secondary or primary workers; small business or large corporations—cleavages transcend, so the authors argue, the "unitary" forces in importance. Hence they reject the idea of modernization—that is, the notion that social structures in time adapt to the modes of large-scale production and distribution. Likewise, the authors dismiss the idea that industrial societies tend to converge, that is, become similar in structure, for the cleavages mentioned—and they are major themes of the work reviewed here—extend historically across all these societies, and create profound differences in the ways the problems of industrialization are dealt with.

Now these are interesting propositions, but they are not consistently argued. The authors indeed recognize the universality of the sources of labor market dualism, yet they insist that the operation of dual labor markets, and the ways by which they resolve the problems that give rise to them in the first place, are specific to individual societies, hence differ from one society to the other, since value systems and the status of the traditional sector (or its equivalent in such countries as the United States where no traditional sector exists) have undergone different historical evolutions. But why do those problems—uncertainty, cyclical instability, fragmentation of work—occur and recur everywhere, notwithstanding the supposed historical individuality of given societies and social processes? Whence the universality of dual labor markets (or, more generally, of wage labor—a phenomenon that stamps like no other the capitalistic or, to use a more aseptic term, the modern character of industrial societies)? Isn't the historical individuality of the various industrial societies diminished by the supersession of the *universal* processes, of which dual labor markets are one manifestation?

True, Marx was not much concerned about the diversity and segmented nature of labor markets; nor were any of his contemporaries. However, he established the centrality of wage labor to industrial society and its development. This development stems from the accumulation of capital. The accumulation of capital is essentially intolerant of national borders and cultural barriers to its expansion. It is a process that subordinates "cleavages," rather than being subordinate to them. As Piore and Berger themselves show, labor market segmentation and secondary labor markets represent decidedly subordinate processes; they arise from the recurrent need to deal with the rigidities and uncertainties generated by the industrial system. It is not precluded that the progressive cheapening of the supply of labor that is associated with the spread of dualism will gradually undermine some of the foundations of industrialism (for example, consumer durables manufacture). But if as this happens, the primary labor force should shrink, and the secondary labor force come to dominate the labor market, which would thus lose its "dual" character, a new epoch in the evolution of the labor market would emerge.

Both authors cite the events in Italy in 1969, when widespread industrial protests and strikes transformed labor-management relations. These could no longer be confined to wage issues, they now began to involve broadranging negotiations which, for the first time, concerned work discipline, promotion and discharge, work allocation, as well as work content and technology, as matters bearing upon job satisfaction. All this spelled a shift of power to the workers and their organizations, and a corresponding loss of management control over the production process. For example, management was rendered unable to discipline workers for infractions of work rules or tardiness, or to institute layoffs when demand slowed. "The response of management to this rigidification has been an effort to restore its flexibility by transferring productive activity to a secondary sector." In time, this meant what Berger calls a "massive decentralization of industrial production." What effects this shift had upon the primary work force, Piore and Berger do not discuss, but it surely weakened it gravely.

Management's ability to weaken the primary work force which it employs is often noted by Piore. It undermines his argument bearing on the cleavage within the working class and raises questions about the validity of the entire dual labor market theory. At the risk of repeating some thoughts alluded to earlier, I quote from Piore's *Birds of Passage*, where he comments upon labor's unceasing effort to impose "upon the system the obligation to treat it . . . like a fixed factor"—so that it cannot be used to compensate for market-caused instabilities in demand, nor for efficiency-related changes in the workplace. But management resists this effort and labor remains unable to dominate the process of production so as to safeguard its interests. Where it does begin to succeed, the burden of rigidity and uncertainty may be shifted to a secondary work force (the role assumed by migrants and immigrants in *Birds of Passage*, but by broader strata in the book here reviewed). It may well be that organized labor often helps promote this shift so as to secure the tenure of its members. But its primary position is not necessarily assured thereby. This, Piore himself confirms, pointing to such management practices as avoidance of permanent hiring by using temporary help; subcontracting; long probation periods; locating of plants in nonunion areas; and hiring of youths and women, who appear to have a lower propensity than men to join unions. The status of the primary work force is thus, if not uniformly threatened, certainly at risk. The differentiation between a primary and secondary work force—already made less sharp by Piore's dividing the primary work force into two or three segments characterized by a hierarchy of intellectual skills—loses force.

Piore also theorizes on the technological foundations of dual labor markets. There are many interesting observations in the pertinent chapter, but his argument is not clear; a case for the existence of a "dualistic" technology is not convincingly set forth. As I understand it, the argument briefly runs as follows: Adam Smith related the division of labor in the workplace—and therefore productivity—to the expansion of the market. That is, the division of labor would become ever more refined, and productivity would rise, as the market expanded. The worker would innovate labor-saving apparatus as he became more specialized, permitting further increases in productivity. Smith's theory did not leave room for demand uncertainty and instability. The large-scale enterprise, which the extent of the market eventually permitted and required, adjusts to demand uncertainty by attuning its output to only the stable segment of the market, leaving the unstable segment to smaller firms. The "technological base for duality" resides in the declining average cost curves of the large firm and the traditional U-shaped average cost curves of the smaller firm. There is much evidence for the validity of the proposition that there are stable and unstable segments of demand, and I will not dwell upon this question. However, it is not at all clear how this technological dualism is related to the duality of the labor market.

Insofar as the concepts of the primary and the secondary labor market have anything to do with skill hierarchies, one could, in fact, argue the opposite of what is implied by Piore—namely that the rise of manufactures signified the rise of a "secondary" work force that gradually displaced the "primary" work force of artisans and craftsmen. Smith's famous example of the pin factory demonstrates what the division of labor meant in terms of simplifying and thus deskilling the task of the worker. Yet, this became the dominant trend in manufacturing, a trend that was accentuated as machinery was introduced, which the great mass of workers tended and only a minority of workers and engineers built. The introduction of assembly lines simply continued the trend toward simplification of tasks. Job specialization and task simplification have been pervasive tendencies in all commercialized industrial and service activities; they do not appear to be related to labor market dualism. Nor is size of enterprise necessarily a characteristic of such dualism: until perhaps the mid-1940's, ladies' garment workers would have had to be counted among "primary" workers despite the small size of the firms for which they worked, thanks chiefly to the strength of their union and the ethnic homogeneity of its membership. The evolution of the ladies' garment work force and of its conditions does, however, illustrate another aspect of Piore's theory: the industry's average hourly wage declined from above 100 percent of the total nondurables average in the 1940's to 75 percent in the mid-1970's, as plants located in areas where the union was weak or could not organize.

The conception of labor market dualism originated in a search to explain low wages and job instability among minorities in the late 1960's and early 1970's. Workers in the primary sector appeared then to be much more secure in their tenure than today. The theory could not likely have been formulated in the 1930's when unemployment, job instability, and low pay was the lot of a very large proportion of workers. The line between primary and secondary labor markets will probably again blur, as workers in the primary sector—for example, in automotive and steel manufacturing—are drawn into the maelstrom of insecurity.

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NOTES ON CURRENT LABOR STATISTICS

This section of the *Review* presents the principal statistical series collected and calculated by the Bureau of Labor Statistics. A brief introduction to each group of tables provides definitions, notes on the data, sources, and other material usually found in footnotes.

Readers who need additional information are invited to consult the BLS regional offices listed on the inside front cover of this issue of the *Review*. Some general notes applicable to several series are given below.

Seasonal adjustment. Certain monthly and quarterly data are adjusted to eliminate the effect of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might otherwise mask short-term movements of the statistical series. Tables containing these data are identified as "seasonally adjusted." Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years.

Seasonally adjusted labor force data in tables 2–7 are revised in the March 1982 issue of the *Review* to reflect experience through 1981. The original estimates have also been revised to 1970 to reflect 1980 census population controls.

Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are being seasonally adjusted with a new procedure called X-11/ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada Catalogue No. 12-564E, February 1980). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. Revisions of historical data continue to be made only at the end of each calendar year.

Annual revision of the seasonally adjusted payroll data in tables 11, 13, 16, and 18 begins with the August 1980 issue using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 33 and 34 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

Adjustments for price changes. Some data are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of $3 and a current price index number of 150, where 1967 = 100, the hourly rate expressed in 1967 dollars is $2 ($3/150 × 100 = $2). The resulting values are described as "real," "constant," or "1967" dollars.

Availability of information. Data that supplement the tables in this section are published by the Bureau of Labor Statistics in a variety of sources. Press releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule given below. The *BLS Handbook of Labor Statistics*, Bulletin 2070, provides more detailed data and greater historical coverage for most of the statistical series presented in the *Monthly Labor Review*. More information from the household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau, and in two comprehensive data books issued annually—*Employment and Earnings, United States* and *Employment and Earnings, States and Areas*. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

Symbols

p = preliminary. To improve the timeliness of some series, preliminary figures are issued based on representative but incomplete returns.
r = revised. Generally this revision reflects the availability of later data but may also reflect other adjustments.
n.e.c. = not elsewhere classified.

Schedule of release dates for major BLS statistical series

Series	Release date	Period covered	Release date	Period covered	MLR table number
Productivity and costs:					
Nonfinancial corporations	March 1	4th quarter	....	....	31-34
Nonfarm business and manufacturing	....	....	April 29	1st quarter	31-34
Employment situation	March 5	February	April 2	March	1-11
Producer Price Index	March 12	February	April 9	March	26-30
Consumer Price Index	March 23	February	April 23	March	22-25
Real earnings	March 23	February	April 23	March	14-20

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 60,000 households beginning in May 1981, selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

Definitions

Employed persons are (1) those who worked for pay any time during the week which includes the 12th day of the month or who worked unpaid for 15 hours or more in a family-operated enterprise and (2) those who were temporarily absent from their regular jobs because of illness, vacation, industrial dispute, or similar reasons. A person working at more than one job is counted only in the job at which he or she worked the greatest number of hours.

Unemployed persons are those who did not work during the survey week, but were available for work except for temporary illness and had looked for jobs within the preceding 4 weeks. Persons who did not look for work because they were on layoff or waiting to start new jobs within the next 30 days are also counted among the unemployed. The **unemployment rate** represents the number unemployed as a percent of the civilian labor force.

The **civilian labor force** consists of all employed or unemployed persons in the civilian noninstitutional population; the **total labor force** includes military personnel. Persons **not in the labor force** are those not classified as employed or unemployed; this group includes persons retired, those engaged in their own housework, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job market factors, and those who are voluntarily idle. The **noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy.

Full-time workers are those employed at least 35 hours a week; **part-time workers** are those who work fewer hours. Workers on part-time schedules for economic reasons (such as slack work, terminating or starting a job during the week, material shortages, or inability to find full-time work) are among those counted as being on full-time status, under the assumption that they would be working full time if conditions permitted. The survey classifies unemployed persons in full-time or part-time status by their reported preferences for full-time or part-time work.

Notes on the data

From time to time, and especially after a decennial census, adjustments are made in the Current Population Survey figures to correct for estimating errors during the preceding years. These adjustments affect the comparability of historical data presented in table 1. A description of these adjustments and their effect on the various data series appear in the Explanatory Notes of *Employment and Earnings.*

Data in tables 2–7 are seasonally adjusted, based on the seasonal experience through December 1981.

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950–81

[Numbers in thousands]

Year	Total noninstitutional population	Total labor force		Civilian labor force						Not in labor force
		Number	Percent of population	Total	Employed			Unemployed		
					Total	Agriculture	Nonagricultural industries	Number	Percent of labor force	
1950	106,645	63,858	59.9	62,208	58,918	7,160	51,758	3,288	5.3	42,787
1955	112,732	68,072	60.4	65,023	62,170	6,450	55,722	2,852	4.4	44,660
1960	119,759	72,142	60.2	69,628	65,778	5,458	60,318	3,852	5.5	47,617
1964	127,224	75,830	59.6	73,091	69,305	4,523	64,782	3,786	5.2	51,394
1965	129,236	77,178	59.7	74,455	71,088	4,361	66,726	3,366	4.5	52,058
1966	131,180	78,893	60.1	75,770	72,895	3,979	68,915	2,875	3.8	52,288
1967	133,319	80,793	60.6	77,347	74,372	3,844	70,527	2,975	3.8	52,527
1968	135,562	82,272	60.7	78,737	75,920	3,817	72,103	2,817	3.6	53,291
1969	137,841	84,240	61.1	80,734	77,902	3,606	74,296	2,832	3.5	53,602
1970	140,272	85,959	61.3	82,771	78,678	3,463	75,215	4,093	4.9	54,315
1971	143,033	87,198	61.0	84,382	79,367	3,394	75,972	5,016	5.9	55,834
1972	146,574	89,484	61.1	87,034	82,153	3,484	78,669	4,882	5.6	57,091
1973	149,423	91,756	61.4	89,429	85,064	3,470	81,594	4,365	4.9	57,667
1974	152,349	94,179	61.8	91,949	86,794	3,515	83,279	5,156	5.6	58,171
1975	155,333	95,955	61.8	93,775	85,846	3,408	82,438	7,929	8.5	59,377
1976	158,294	98,302	62.1	96,158	88,752	3,331	85,421	7,406	7.7	59,991
1977	161,166	101,142	62.8	99,009	92,017	3,283	88,734	6,991	7.1	60,025
1978	164,027	104,368	63.6	102,251	96,048	3,387	92,661	6,202	6.1	59,659
1979	166,951	107,050	64.1	104,962	98,824	3,347	95,477	6,137	5.8	59,900
1980	169,848	109,042	64.2	106,940	99,303	3,364	95,938	7,637	7.1	60,806
1981	172,272	110,812	64.3	108,670	100,397	3,368	97,030	8,273	7.6	61,460

NOTE: Data for 1970–81 have been revised to reflect 1980 census population controls.

2. Employment status by sex, age, and race, seasonally adjusted

[Numbers in thousands]

Employment status	Annual average		1981												1982
	1980	1981	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
TOTAL															
Total noninstitutional population[1]	169,848	172,272	171,229	171,400	171,581	171,770	171,956	172,172	172,385	172,559	172,758	172,966	173,155	173,330	173,495
Total labor force	109,042	110,812	110,048	110,155	110,492	110,906	111,420	110,565	110,827	110,978	110,659	111,170	111,430	111,348	111,039
Civilian noninstitutional population[1]	167,745	170,130	169,104	169,280	169,453	169,641	169,829	170,042	170,246	170,399	170,593	170,809	170,996	171,166	171,335
Civilian labor force	106,940	108,670	107,923	108,034	108,364	108,777	109,293	108,434	108,688	108,818	108,494	109,012	109,272	109,184	108,879
Employed	99,303	100,397	99,901	100,069	100,406	100,878	101,045	100,430	100,864	100,840	100,258	100,343	100,172	99,613	99,581
Agriculture	3,364	3,368	3,445	3,346	3,343	3,470	3,405	3,348	3,342	3,404	3,358	3,378	3,372	3,209	3,411
Nonagricultural industries	95,938	97,030	96,456	96,723	97,063	97,408	97,640	97,082	97,522	97,436	96,900	96,965	96,800	96,404	96,170
Unemployed	7,637	8,273	8,022	7,965	7,958	7,899	8,248	8,004	7,824	7,978	8,236	8,669	9,100	9,571	9,298
Unemployment rate	7.1	7.6	7.4	7.4	7.3	7.3	7.5	7.4	7.2	7.3	7.6	8.0	8.3	8.8	8.5
Not in labor force	60,806	61,460	61,181	61,246	61,089	60,864	60,536	61,608	61,558	61,581	62,099	61,797	61,724	61,982	62,456
Men, 20 years and over															
Civilian noninstitutional population[1]	71,138	72,419	71,850	71,951	72,037	72,142	72,251	72,359	72,472	72,558	72,670	72,795	72,921	73,020	73,120
Civilian labor force	56,455	57,197	56,803	56,816	57,028	57,157	57,479	57,094	57,172	57,250	57,262	57,355	57,459	57,665	57,368
Employed	53,101	53,582	53,342	53,383	53,618	53,820	53,884	53,597	53,874	53,791	53,693	53,504	53,354	53,122	53,047
Agriculture	2,396	2,384	2,409	2,349	2,352	2,419	2,390	2,379	2,383	2,422	2,383	2,413	2,382	2,311	2,390
Nonagricultural industries	50,706	51,199	50,933	51,034	51,266	51,401	51,494	51,218	51,491	51,369	51,310	51,091	50,972	50,811	50,657
Unemployed	3,353	3,615	3,461	3,433	3,410	3,337	3,595	3,497	3,298	3,459	3,569	3,851	4,105	4,543	4,322
Unemployment rate	5.9	6.3	6.1	6.0	6.0	5.8	6.3	6.1	5.8	6.0	6.2	6.7	7.1	7.9	7.5
Not in labor force	14,683	15,222	15,047	15,135	15,009	14,985	14,772	15,265	15,300	15,308	15,408	15,440	15,462	15,355	15,752
Women, 20 years and over															
Civilian noninstitutional population[1]	80,065	81,497	80,856	80,966	81,076	81,193	81,308	81,434	81,561	81,671	81,792	81,920	82,038	82,151	82,260
Civilian labor force	41,106	42,485	41,833	41,974	42,152	42,332	42,608	42,581	42,682	42,666	42,344	42,831	42,987	42,888	42,868
Employed	38,492	39,590	39,029	39,211	39,365	39,536	39,737	39,757	39,810	39,841	39,426	39,814	39,878	39,713	39,764
Agriculture	584	604	626	616	610	609	605	585	590	609	608	596	635	572	649
Nonagricultural industries	37,907	38,986	38,403	38,595	38,755	38,927	39,132	39,172	39,220	39,232	38,818	39,218	39,243	39,141	39,115
Unemployed	2,615	2,895	2,804	2,763	2,787	2,796	2,871	2,824	2,872	2,825	2,918	3,017	3,109	3,175	3,104
Unemployment rate	6.4	6.8	6.7	6.6	6.6	6.6	6.7	6.6	6.7	6.6	6.9	7.0	7.2	7.4	7.2
Not in labor force	38,959	39,012	39,023	38,992	38,924	38,861	38,700	38,853	38,879	39,005	39,448	39,089	39,051	39,263	39,392
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	16,543	16,214	16,397	16,363	16,341	16,305	16,270	16,249	16,213	16,169	16,131	16,093	16,037	15,995	15,955
Civilian labor force	9,378	8,988	9,287	9,244	9,184	9,288	9,206	8,759	8,834	8,902	8,888	8,826	8,826	8,631	8,643
Employed	7,710	7,225	7,530	7,475	7,423	7,522	7,424	7,076	7,180	7,208	7,139	7,025	6,940	6,778	6,771
Agriculture	385	380	410	381	381	442	410	384	369	373	367	369	355	326	373
Nonagricultural industries	7,325	6,845	7,120	7,094	7,042	7,080	7,014	6,692	6,811	6,835	6,772	6,656	6,585	6,452	6,398
Unemployed	1,668	1,763	1,757	1,769	1,761	1,766	1,782	1,683	1,654	1,694	1,749	1,801	1,886	1,853	1,872
Unemployment rate	17.8	19.6	18.9	19.1	19.2	19.0	19.4	19.2	18.7	19.0	19.7	20.4	21.4	21.5	21.7
Not in labor force	7,165	7,226	7,110	7,119	7,157	7,017	7,064	7,490	7,379	7,267	7,243	7,267	7,211	7,364	7,312
White															
Civilian noninstitutional population[1]	146,122	147,908	146,976	147,132	147,335	147,539	147,670	147,804	147,976	148,144	148,370	148,562	148,631	148,755	148,842
Civilian labor force	93,600	95,052	94,332	94,552	94,756	95,199	95,666	94,887	95,126	95,163	94,884	95,365	95,535	95,329	95,120
Employed	87,715	88,709	88,101	88,388	88,653	89,080	89,237	88,799	89,170	89,221	88,628	88,734	88,498	88,010	87,955
Unemployed	5,884	6,343	6,231	6,164	6,103	6,119	6,429	6,088	5,956	5,942	6,256	6,631	7,037	7,319	7,165
Unemployment rate	6.3	6.7	6.6	6.5	6.4	6.4	6.7	6.4	6.3	6.2	6.6	7.0	7.4	7.7	7.5
Not in labor force	52,522	52,856	52,644	52,580	52,579	52,340	52,004	52,917	52,850	52,981	53,486	53,197	53,096	53,426	53,722
Black															
Civilian noninstitutional population[1]	17,824	18,219	18,045	18,076	18,105	18,137	18,170	18,206	18,239	18,266	18,297	18,333	18,362	18,392	18,423
Civilian labor force	10,865	11,086	10,998	10,951	11,036	11,126	11,126	11,033	10,971	11,069	11,134	11,188	11,207	11,226	11,188
Employed	9,313	9,355	9,428	9,350	9,383	9,488	9,460	9,310	9,338	9,267	9,319	9,313	9,321	9,279	9,314
Unemployed	1,553	1,731	1,570	1,601	1,653	1,638	1,666	1,723	1,633	1,802	1,815	1,875	1,886	1,947	1,874
Unemployment rate	14.3	15.6	14.3	14.6	15.0	14.7	15.0	15.6	14.9	16.3	16.3	16.8	16.8	17.3	16.8
Not in labor force	6,959	7,133	7,047	7,125	7,069	7,011	7,044	7,173	7,268	7,197	7,163	7,145	7,155	7,166	7,235

[1] As in table 1, population figures are not seasonally adjusted.

NOTE: Effective with January 1982 data, population counts derived from the 1980 census are incorporated into the estimation procedures used in the Current Population Survey. Data for 1970-81 have been revised. Also, seasonally adjusted data have been revised based on the seasonal experience through December 1981.

3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1981												1982
	1980	1981	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
CHARACTERISTIC															
Total employed, 16 years and over	99,303	100,397	99,901	100,069	100,406	100,878	101,045	100,430	100,984	100,840	100,258	100,343	100,172	99,613	99,581
Men	57,186	57,397	57,323	57,331	57,531	57,782	57,793	57,279	57,760	57,551	57,471	57,266	57,051	56,725	56,629
Women	42,117	43,000	42,578	42,738	42,875	43,096	43,252	43,151	43,224	43,289	42,787	43,077	43,121	42,888	42,952
Married men, spouse present	39,004	38,882	38,950	38,944	39,036	39,186	39,120	38,930	38,981	38,961	38,855	38,746	38,553	38,342	38,234
Married women, spouse present	23,532	23,915	23,806	23,824	23,920	23,979	24,192	24,108	24,150	24,043	23,826	23,874	23,820	23,881	23,744
OCCUPATION															
White-collar workers	51,882	52,949	52,662	52,730	52,880	52,855	53,016	52,957	52,897	53,141	52,908	53,199	53,086	53,084	52,836
Professional and technical	15,968	16,420	16,270	16,185	16,219	16,178	16,080	16,410	16,364	16,621	16,588	16,881	16,657	16,774	16,803
Managers and administrators, except farm	11,138	11,540	11,561	11,629	11,725	11,616	11,489	11,411	11,578	11,460	11,533	11,618	11,461	11,424	11,091
Salesworkers	6,303	6,425	6,384	6,387	6,372	6,290	6,562	6,513	6,373	6,480	6,441	6,400	6,418	6,450	6,520
Clerical workers	18,473	18,564	18,447	18,528	18,544	18,771	18,873	18,623	18,582	18,570	18,336	18,502	18,550	18,436	18,423
Blue-collar workers	31,452	31,261	31,151	31,180	31,289	31,085	31,786	31,538	31,580	31,611	31,266	30,953	30,683	30,344	30,203
Craft and kindred workers	12,787	12,862	12,621	12,694	12,826	12,825	12,911	12,740	12,787	12,724	12,514	12,446	12,411	12,446	12,370
Operatives, except transport	10,565	10,540	10,586	10,618	10,464	10,661	10,716	10,703	10,719	10,658	10,524	10,410	10,220	10,160	9,966
Transport equipment operatives	3,531	3,476	3,425	3,446	3,447	3,483	3,486	3,460	3,526	3,530	3,506	3,580	3,438	3,366	3,415
Nonfarm laborers	4,567	4,583	4,519	4,445	4,551	4,086	4,703	4,583	4,540	4,699	4,722	4,517	4,614	4,361	4,451
Service workers	13,228	13,438	13,250	13,347	13,478	13,468	13,470	13,214	13,526	13,262	13,381	13,525	13,670	13,639	13,709
Farmworkers	2,741	2,749	2,766	2,738	2,730	2,826	2,748	2,710	2,727	2,753	2,743	2,770	2,802	2,690	2,817
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,425	1,464	1,505	1,389	1,381	1,560	1,489	1,437	1,495	1,501	1,461	1,502	1,436	1,352	1,377
Self-employed workers	1,642	1,638	1,650	1,637	1,638	1,661	1,654	1,664	1,580	1,638	1,643	1,631	1,641	1,602	1,674
Unpaid family workers	297	296	304	306	299	296	235	263	244	256	256	261	321	229	300
Nonagricultural industries:															
Wage and salary workers	88,525	89,543	89,005	89,104	89,592	89,913	90,402	89,508	89,971	89,985	89,376	89,460	89,238	88,991	88,759
Government	15,912	15,689	15,988	15,875	15,930	15,885	15,776	15,707	15,637	15,526	15,475	15,481	15,397	15,585	15,578
Private industries	72,612	73,853	73,017	73,229	73,662	74,028	74,626	73,801	74,334	74,460	73,901	73,989	73,841	73,406	73,181
Private households	1,192	1,208	1,214	1,190	1,242	1,249	1,192	1,177	1,216	1,250	1,102	1,182	1,204	1,291	1,249
Other industries	71,420	72,645	71,803	72,039	72,420	72,779	73,434	72,624	73,118	73,210	72,799	72,807	72,637	72,115	71,932
Self-employed workers	7,000	7,097	7,026	7,080	7,065	7,150	6,966	7,126	7,071	7,103	7,217	7,152	7,141	7,057	6,971
Unpaid family workers	413	380	421	384	374	325	358	376	389	387	390	451	425	410	410
PERSONS AT WORK[1]															
Nonagricultural industries	90,209	91,377	91,322	91,287	91,405	91,094	91,745	91,500	92,532	91,569	90,878	91,384	91,323	90,922	90,125
Full-time schedules	73,590	74,339	74,387	74,482	74,453	74,259	74,871	74,693	75,820	74,467	73,794	73,895	73,915	73,380	72,803
Part time for economic reasons	4,064	4,499	4,451	4,227	4,290	4,200	4,294	4,033	4,374	4,350	4,656	5,009	5,026	5,288	5,071
Usually work full time	1,714	1,738	1,688	1,650	1,660	1,583	1,657	1,465	1,690	1,729	1,759	2,006	1,945	2,121	1,783
Usually work part time	2,350	2,761	2,763	2,577	2,630	2,607	2,607	2,568	2,684	2,621	2,897	3,003	3,081	3,167	3,287
Part time for noneconomic reasons	12,555	12,539	12,484	12,578	12,662	12,635	12,610	12,774	12,538	12,752	12,429	12,480	12,382	12,274	12,251

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial disputes.

NOTE: Effective with January 1982 data, population counts derived from the 1980 census are incorporated into the estimation procedures used in the Current Population Survey. Data for 1970-81 have been revised. Also, seasonally adjusted data have been revised based on the seasonal experience through December 1981.

4. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1981												1982
	1980	1981	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
CHARACTERISTIC															
Total, 16 years and over	7.1	7.6	7.4	7.4	7.3	7.3	7.5	7.4	7.2	7.3	7.6	8.0	8.3	8.8	8.5
Men, 20 years and over	5.9	6.3	6.1	6.0	6.0	5.8	6.3	6.1	5.8	6.0	6.2	6.7	7.1	7.9	7.5
Women, 20 years and over	6.4	6.8	6.7	6.6	6.6	6.5	6.7	6.6	6.7	6.6	6.9	7.0	7.2	7.4	7.2
Both sexes, 16 to 19 years	17.8	19.6	18.9	19.1	19.2	19.0	19.4	19.2	18.7	18.0	19.7	20.4	21.4	21.5	21.7
White, total	6.3	6.7	6.6	6.5	6.4	6.4	6.7	6.4	6.3	6.2	6.6	7.0	7.4	7.7	7.5
Men, 20 years and over	5.3	5.6	5.5	5.4	5.3	5.2	5.6	5.3	5.0	5.2	5.5	5.9	6.4	6.9	6.6
Women, 20 years and over	5.6	5.9	5.9	5.7	5.7	5.7	5.9	5.7	5.8	5.5	5.9	6.1	6.3	6.4	6.3
Both sexes, 16 to 19 years	15.5	17.3	16.6	17.2	16.8	17.0	17.5	16.8	16.4	16.1	17.2	17.7	18.0	18.0	19.6
Black, total	14.3	15.6	14.3	14.6	15.0	14.7	15.0	15.6	14.9	16.3	16.3	16.8	16.8	17.3	16.8
Men, 20 years and over	12.4	13.5	11.5	12.0	12.1	12.1	13.0	13.7	12.7	13.6	14.5	14.7	15.5	16.5	16.3
Women, 20 years and over	11.9	13.4	12.3	13.2	13.6	12.9	13.1	13.3	13.1	13.8	14.0	13.9	13.6	14.1	13.3
Both sexes, 16 to 19 years	38.5	41.4	38.7	38.3	38.7	40.2	38.9	40.9	40.0	46.0	46.8	45.6	44.1	42.2	41.2
Married men, spouse present	4.2	4.3	4.2	4.1	4.1	3.8	4.0	4.2	3.9	4.0	4.4	4.8	5.2	5.7	5.3
Married women, spouse present	5.8	6.0	6.0	5.8	5.9	5.9	5.8	5.7	5.7	5.5	6.0	6.1	6.5	6.6	6.2
Women who maintain families	9.2	10.4	10.3	9.8	9.6	9.9	10.4	10.7	11.2	10.1	10.7	10.6	10.8	10.5	10.4
Full-time workers	6.9	7.3	7.2	7.1	7.1	6.9	7.1	7.1	6.8	6.9	7.3	7.7	8.1	8.7	8.4
Part-time workers	8.8	9.4	9.1	9.1	9.1	9.2	9.6	9.2	9.3	9.6	9.6	9.5	10.2	9.2	9.6
Unemployed 15 weeks and over	1.7	2.1	2.2	2.1	2.1	2.0	2.0	2.2	2.0	2.0	2.1	2.1	2.2	2.2	2.2
Labor force time lost[1]	7.9	8.5	8.3	8.2	8.2	8.2	8.6	7.9	7.9	7.9	8.5	9.1	9.5	10.1	10.0
OCCUPATION															
White-collar workers	3.7	4.0	3.9	3.8	3.9	4.0	4.0	3.9	4.0	3.9	4.1	4.1	4.2	4.5	4.2
Professional and technical	2.5	2.8	2.8	2.6	2.7	3.1	2.8	2.8	2.8	2.5	2.8	2.6	2.7	3.4	2.9
Managers and administrators, except farm	2.4	2.7	2.5	2.5	2.5	2.4	2.6	2.7	2.6	2.7	2.7	2.8	3.0	3.1	2.7
Salesworkers	4.4	4.6	4.3	4.1	4.1	4.2	4.6	4.3	4.9	4.7	5.0	4.9	5.0	4.9	4.5
Clerical workers	5.3	5.7	5.6	5.4	5.7	5.6	5.6	5.4	5.7	5.7	5.8	6.0	6.0	6.2	6.3
Blue-collar workers	10.0	10.3	10.2	10.2	10.0	9.7	9.9	9.8	9.5	9.5	10.2	10.9	11.8	12.7	12.5
Craft and kindred workers	6.6	7.5	6.9	7.1	7.1	6.8	7.2	7.1	6.9	7.0	7.7	8.3	8.5	9.3	9.0
Operatives, except transport	12.2	12.2	12.2	12.1	11.7	11.6	11.8	11.1	11.1	11.1	11.6	12.8	14.1	15.5	15.4
Transport equipment operatives	8.8	8.7	9.1	8.6	9.1	8.1	8.2	8.1	7.3	8.0	8.7	8.0	10.4	10.5	10.2
Nonfarm laborers	14.6	14.7	14.8	14.9	14.2	14.0	13.5	14.7	14.4	13.2	14.6	15.6	16.0	16.9	16.9
Service workers	7.9	8.9	8.2	8.7	8.3	8.5	9.4	8.9	8.0	8.9	9.0	9.3	9.7	9.6	9.2
Farmworkers	4.6	5.3	5.0	4.9	5.2	3.9	5.2	6.2	4.8	5.4	4.0	6.2	6.2	6.4	6.9
INDUSTRY															
Nonagricultural private wage and salary workers[2]	7.4	7.7	7.6	7.6	7.5	7.3	7.7	7.4	7.2	7.3	7.7	8.1	8.4	9.1	8.8
Construction	14.1	15.6	13.7	13.7	14.7	14.5	15.7	16.1	15.2	16.2	16.3	17.6	17.8	18.1	18.7
Manufacturing	8.5	8.3	8.5	8.5	8.1	7.6	7.8	7.4	7.3	7.0	7.9	8.6	9.4	11.0	10.4
Durable goods	8.9	8.2	8.4	8.7	8.0	7.5	7.4	7.1	7.1	6.5	7.7	8.6	9.5	11.8	11.0
Nondurable goods	7.9	8.4	8.5	8.3	8.3	7.8	8.6	7.9	7.6	7.9	8.3	8.6	9.3	9.6	9.5
Transportation and public utilities	4.9	5.2	5.5	5.4	6.1	5.5	5.7	4.9	4.1	4.8	4.2	4.8	5.5	6.0	6.4
Wholesale and retail trade	7.4	8.1	7.7	7.7	7.6	7.5	8.3	7.7	7.9	7.9	8.5	8.4	8.6	8.9	8.7
Finance and service industries	5.3	5.9	5.8	5.9	5.6	5.8	5.8	5.8	5.7	5.7	6.0	6.2	6.1	6.4	5.9
Government workers	4.1	4.7	4.4	4.3	4.6	4.7	4.7	4.6	4.6	4.5	4.7	4.7	5.2	5.0	4.8
Agricultural wage and salary workers	11.0	12.1	11.5	11.9	12.1	9.4	11.0	13.3	10.7	12.0	11.0	13.4	14.1	14.8	16.2

[1] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

[2] Includes mining, not shown separately.

NOTE: Effective with January 1982 data, population counts derived from the 1980 census are incorporated into the estimation procedures used in the Current Population Survey. Data for 1970-81 have been revised. Also, seasonally adjusted data have been revised based on the seasonal experience through December 1981.

5. Unemployment rates, by sex and age, seasonally adjusted

Sex and age	Annual average		1981												1982
	1980	1981	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
Total, 16 years and over	7.1	7.6	7.4	7.4	7.3	7.3	7.5	7.4	7.2	7.3	7.6	8.0	8.3	8.8	8.5
16 to 19 years	17.8	19.6	18.9	19.1	19.2	19.0	19.4	19.2	18.7	19.0	19.7	20.4	21.4	21.5	21.7
16 to 17 years	20.0	21.4	20.9	21.3	21.4	21.6	21.3	22.6	19.8	20.8	21.4	21.5	22.6	21.9	21.9
18 to 19 years	16.2	18.4	17.4	17.7	17.6	17.2	17.7	17.5	17.8	17.6	18.5	20.0	20.5	21.2	21.3
20 to 24 years	11.5	12.3	11.9	11.9	11.8	12.0	12.6	12.1	11.5	12.1	12.3	12.7	13.0	13.5	13.5
25 years and over	5.1	5.4	5.3	5.2	5.2	5.1	5.2	5.3	5.2	5.2	5.4	5.7	6.0	6.5	6.3
25 to 54 years	5.5	5.8	5.7	5.6	5.6	5.4	5.6	5.6	5.5	5.5	5.8	6.2	6.5	6.9	6.7
55 years and over	3.3	3.6	3.5	3.5	3.6	3.4	3.4	3.5	3.5	3.5	3.8	3.8	3.8	4.1	4.2
Men, 16 years and over	6.9	7.4	7.2	7.2	7.1	6.9	7.3	7.2	6.7	7.1	7.3	7.7	8.3	9.0	8.6
16 to 19 years	18.3	20.1	20.0	20.0	19.8	19.5	20.0	20.0	18.8	19.8	19.9	20.1	21.8	22.3	22.1
16 to 17 years	20.4	22.0	22.5	22.1	21.7	22.5	22.3	24.0	19.9	21.5	21.5	21.1	22.7	22.6	23.0
18 to 19 years	16.7	18.8	18.3	18.5	18.5	17.4	18.0	18.2	17.9	18.3	18.7	19.3	21.0	22.2	21.4
20 to 24 years	12.5	13.2	12.9	12.9	13.0	13.0	13.8	12.9	11.6	12.9	13.1	13.8	14.4	14.8	14.9
25 years and over	4.8	5.1	4.9	4.9	4.8	4.6	4.7	5.0	4.7	4.9	5.0	5.5	5.8	6.5	6.3
25 to 54 years	5.1	5.5	5.2	5.2	5.1	4.9	5.1	5.2	5.0	5.2	5.5	5.9	6.3	5.9	6.7
55 years and over	3.3	3.5	3.4	3.3	3.3	3.2	3.4	3.4	3.4	3.4	3.5	3.7	3.7	4.4	4.3
Women, 16 years and over	7.4	7.9	7.7	7.7	7.7	7.7	7.8	7.7	7.8	7.7	8.0	8.2	8.4	8.5	8.4
16 to 19 years	17.2	19.0	17.7	18.2	18.5	18.4	18.7	18.4	18.6	18.2	19.5	20.7	20.9	20.5	21.2
16 to 17 years	19.6	20.7	19.1	20.3	21.2	20.5	20.2	21.1	19.7	20.0	21.2	21.9	22.5	21.1	20.6
18 to 19 years	15.6	17.9	16.3	16.8	16.6	17.1	17.4	16.8	17.7	16.9	18.3	20.6	19.9	20.0	21.1
20 to 24 years	10.4	11.2	10.9	10.9	10.5	10.9	11.2	11.2	11.3	11.1	11.4	11.5	11.3	12.0	11.9
25 years and over	5.5	5.9	5.8	5.6	5.8	5.7	5.8	5.7	5.8	5.6	6.0	6.1	6.4	6.4	6.3
25 to 54 years	6.0	6.3	6.3	6.0	6.2	6.1	6.4	6.1	6.1	6.0	6.3	6.5	6.8	6.9	6.7
55 years and over	3.2	3.8	3.6	3.8	4.2	3.7	3.4	3.5	3.7	3.7	4.3	4.0	3.8	3.7	4.1

6. Unemployed persons, by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	1981												1982
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
NUMBER OF UNEMPLOYED													
Lost last job	3,982	4,050	3,989	3,958	4,032	4,173	3,867	4,106	4,426	4,573	4,905	5,343	5,205
On layoff	1,305	1,312	1,323	1,303	1,357	1,302	1,225	1,276	1,452	1,631	1,826	2,042	1,860
Other job losers	2,677	2,738	2,666	2,655	2,675	2,871	2,642	2,830	2,974	2,942	3,079	3,301	3,345
Left last job	923	911	901	903	1,004	896	926	879	921	976	916	923	835
Reentered labor force	2,051	2,020	2,069	2,044	2,106	2,039	2,078	2,034	2,058	2,178	2,330	2,244	2,079
Seeking first job	1,015	943	988	988	956	973	940	971	977	1,002	996	1,021	1,055
PERCENT DISTRIBUTION													
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	50.0	51.1	50.2	50.1	49.8	51.6	49.5	51.4	52.8	52.4	53.6	56.1	56.7
On layoff	16.4	16.6	16.6	16.5	16.8	16.1	15.7	16.0	17.3	18.7	19.9	21.4	20.3
Other job losers	33.6	34.6	33.5	33.6	33.0	35.5	33.8	35.4	35.5	33.7	33.6	34.6	36.5
Job leavers	11.6	11.5	11.3	11.4	12.4	11.1	11.9	11.0	11.0	11.2	10.0	9.7	9.1
Reentrants	25.7	25.5	26.0	25.9	26.0	25.2	26.6	25.5	24.8	25.0	25.5	23.5	22.7
New entrants	12.7	11.9	12.4	12.5	11.8	12.0	12.0	12.2	11.7	11.5	10.9	10.7	11.5
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE													
Job losers	3.7	3.7	3.7	3.7	3.7	3.8	3.6	3.8	4.1	4.2	4.5	4.9	4.8
Job leavers	.9	.8	.8	.8	.9	.8	.9	.8	.8	.9	.8	.8	.8
Reentrants	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.1	1.9
New entrants	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	1.0

7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1981												1982
	1980	1981	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
Less than 5 weeks	3,295	3,449	3,290	3,267	3,277	3,189	3,378	3,303	3,323	3,326	3,529	3,707	3,852	4,037	3,852
5 to 14 weeks	2,470	2,539	2,324	2,379	2,408	2,472	2,606	2,423	2,312	2,469	2,585	2,686	2,882	3,016	3,068
15 weeks and over	1,871	2,285	2,391	2,322	2,269	2,187	2,231	2,363	2,170	2,217	2,248	2,292	2,364	2,372	2,390
15 to 26 weeks	1,052	1,122	1,123	1,072	1,057	1,048	1,061	1,227	1,096	1,078	1,146	1,166	1,229	1,189	1,210
27 weeks and over	820	1,162	1,268	1,250	1,212	1,139	1,170	1,136	1,074	1,139	1,102	1,126	1,135	1,183	1,180
Average (mean) duration, in weeks	11.9	13.7	14.4	14.1	13.9	13.7	13.3	14.3	14.1	14.3	13.7	13.6	13.1	12.8	13.5

NOTE: Effective with January 1982 data, population counts derived from the 1980 census are incorporated into the estimation procedures used in the Current Population Survey. Data for 1970–81 have been revised. Also, seasonally adjusted data have been revised based on the seasonal experience through December 1981.

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by 166,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

LABOR TURNOVER DATA in this section are compiled from personnel records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies. A sample of 40,000 establishments represents all industries in the manufacturing and mining sectors of the economy.

Definitions

Employed persons are all persons who received pay (including holiday and sick pay) for any part of the payroll period including the 12th of the month. Persons holding more than one job (about 5 percent of all persons in the labor force) are counted in each establishment which reports them.

Production workers in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 14–20 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities, in wholesale and retail trade, in finance, insurance, and real estate, and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to eliminate the effects of price change. The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated to underlying wage-rate developments: fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries. **Spendable earnings** are earnings from which estimated social security and Federal income taxes have been deducted. The Bureau of Labor Statistics computes spendable earnings from gross weekly earnings for only two illustrative cases: (1) a worker with no dependents and (2) a married worker with three dependents.

Hours represent the average weekly hours of production or nonsupervisory workers for which pay was received and are different from standard or scheduled hours. **Overtime hours** represent the portion of gross average weekly hours which were in excess of regular hours and for which overtime premiums were paid.

Labor turnover is the movement of all wage and salary workers from one employment status to another. **Accession rates** indicate the average number of persons added to a payroll in a given period per 100 employees; **separation rates** indicate the average number dropped from a payroll per 100 employees. Although month-to-month changes in employment can be calculated from the labor turnover data, the results are not comparable with employment data from the employment and payroll survey. The labor turnover survey measures changes during the calendar month while the employment and payroll survey measures changes from midmonth to midmonth.

Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of June 1981 data, published in the August 1981 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Complete comparable historical unadjusted and seasonally adjusted data are published in a Supplement to Employment and Earnings (unadjusted data from April 1977 through March 1981 and seasonally adjusted data from January 1974 through March 1981) and in *Employment and Earnings, United States, 1909–78*, BLS Bulletin 1312–11 (for prior periods).

Data on recalls were shown for the first time in tables 12 and 13 in the January 1978 issue of the *Review*. For a detailed discussion of the recalls series, along with historical data, see "New Series on Recalls from the Labor Turnover Survey," *Employment and Earnings*, December 1977, pp. 10–19.

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9–20. See also *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976).

The formulas used to construct the spendable average weekly earnings series reflect the latest provisions of the Federal income tax and social security tax laws. For the spendable average weekly earnings formulas for the years 1979–81, see *Employment and Earnings*, November 1981, pp. 7–8. Real earnings data are adjusted using the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W).

8. Employment by Industry, 1951–80

[Nonagricultural payroll data, in thousands]

Year	Total	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale and retail trade	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services	Government		
											Total	Federal	State and local
1951	47,819	929	2,837	16,393	4,226	9,742	2,727	7,015	1,956	5,547	6,389	2,302	4,087
1952	48,793	898	2,668	16,632	4,248	10,004	2,812	7,192	2,035	5,699	6,609	2,420	4,188
1953	50,202	866	2,659	17,549	4,290	10,247	2,854	7,393	2,111	5,835	6,645	2,305	4,340
1954	48,990	791	2,646	16,314	4,084	10,235	2,867	7,368	2,200	5,969	6,751	2,188	4,563
1955	50,641	792	2,839	16,882	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1956	52,369	822	3,039	17,243	4,244	10,858	3,018	7,840	2,389	6,497	7,278	2,209	5,069
1957	52,853	828	2,962	17,174	4,241	10,886	3,028	7,858	2,438	6,708	7,616	2,217	5,399
1958	51,324	751	2,817	15,945	3,976	10,750	2,980	7,770	2,481	6,765	7,839	2,191	5,648
1959[1]	53,268	732	3,004	16,675	4,011	11,127	3,082	8,045	2,549	7,087	8,083	2,233	5,850
1960	54,189	712	2,926	16,796	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1961	53,999	672	2,859	16,326	3,903	11,337	3,133	8,204	2,688	7,620	8,594	2,279	6,315
1962	55,549	650	2,948	16,853	3,906	11,566	3,198	8,368	2,754	7,982	8,890	2,340	6,550
1963	56,653	635	3,010	16,995	3,903	11,778	3,248	8,530	2,830	8,277	9,225	2,358	6,868
1964	58,283	634	3,097	17,274	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	632	3,232	18,062	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	627	3,317	19,214	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	613	3,248	19,447	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	606	3,350	19,781	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	619	3,575	20,167	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	623	3,588	19,367	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	609	3,704	18,623	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	628	3,889	19,151	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	642	4,097	20,154	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	697	4,020	20,077	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	752	3,525	18,323	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	779	3,576	18,997	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	813	3,851	19,682	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	851	4,229	20,505	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	958	4,463	21,040	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,147
1980	90,564	1,020	4,399	20,300	5,143	20,386	5,281	15,104	5,168	17,901	16,249	2,866	13,383

[1] Data include Alaska and Hawaii beginning in 1959.

9. Employment by State

[Nonagricultural payroll data, in thousands]

State	Dec. 1980	Nov. 1981	Dec. 1981 P	State	Dec. 1980	Nov. 1981	Dec. 1981 P
Alabama	1,356.9	1,349.2	1,348.3	Montana	280.7	284.3	285.1
Alaska	163.9	179.0	176.1	Nebraska	634.1	636.2	634.0
Arizona	1,028.6	1,028.7	1,033.5	Nevada	403.5	423.2	420.8
Arkansas	749.7	746.9	742.9	New Hampshire	391.5	390.3	390.3
California	9,967.3	10,016.1	10,032.4	New Jersey	3,074.8	3,105.7	3,096.3
Colorado	1,277.0	1,297.6	1,298.5	New Mexico	462.8	468.4	469.4
Connecticut	1,443.6	1,432.3	1,435.0	New York	7,269.9	7,290.0	7,295.4
Delaware	263.2	257.1	260.3	North Carolina	2,416.1	2,407.6	2,393.6
District of Columbia	616.5	606.1	607.0	North Dakota	247.1	255.0	253.3
Florida	3,711.6	3,826.2	3,868.4	Ohio	4,420.1	4,380.0	4,341.9
Georgia	2,176.2	2,169.4	2,165.4	Oklahoma	1,159.6	1,199.2	1,204.5
Hawaii	407.7	403.3	406.9	Oregon	1,027.8	1,001.4	990.1
Idaho	332.0	325.3	323.1	Pennsylvania	4,765.0	4,682.4	4,649.9
Illinois	4,879.4	4,851.9	4,828.2	Rhode Island	404.3	404.9	402.3
Indiana	2,145.1	2,106.6	2,085.5	South Carolina	1,195.5	1,189.8	1,189.7
Iowa	1,087.0	1,078.1	1,071.8	South Dakota	237.2	237.1	235.8
Kansas	953.0	954.9	953.8	Tennessee	1,736.8	1,719.3	1,706.3
Kentucky	1,227.0	1,191.8	1,187.1	Texas	6,027.2	6,251.5	6,273.9
Louisiana	1,616.9	1,649.9	1,652.7	Utah	557.4	569.3	568.1
Maine	421.2	413.9	411.9	Vermont	203.9	201.9	203.4
Maryland	1,716.8	1,694.6	1,696.8	Virginia	2,150.4	2,174.7	2,176.9
Massachusetts	2,677.5	2,685.0	2,680.5	Washington	1,608.6	1,571.8	1,561.6
Michigan	3,514.2	3,447.4	3,385.0	West Virginia	650.1	632.2	628.0
Minnesota	1,769.7	1,770.4	1,765.1	Wisconsin	1,959.3	1,957.9	1,940.0
Mississippi	838.8	821.2	821.1	Wyoming	213.4	216.2	214.3
Missouri	1,985.1	1,976.1	1,986.4	Virgin Islands	36.9	35.4	35.7

10. Employment by industry division and major manufacturing group

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1981												1982
	1979	1980	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec. p	Jan. p
TOTAL	89,823	90,564	89,988	90,138	90,720	91,337	91,848	92,481	91,800	91,598	92,159	92,424	92,293	91,915	89,781
MINING	958	1,020	1,066	1,071	1,084	941	957	1,132	1,155	1,169	1,169	1,164	1,170	1,167	1,154
CONSTRUCTION	4,463	4,399	3,895	3,901	4,048	4,246	4,356	4,477	4,554	4,579	4,516	4,493	4,369	4,153	3,691
MANUFACTURING	21,040	20,300	20,075	20,065	20,160	20,253	20,342	20,531	20,337	20,473	20,600	20,368	20,122	19,818	19,449
Production workers	15,068	14,223	13,975	13,971	14,049	14,127	14,195	14,325	14,108	14,230	14,376	14,147	13,904	13,601	13,295
Durable goods	12,760	12,181	12,072	12,042	12,120	12,197	12,235	12,334	12,198	12,188	12,292	12,163	11,999	11,799	11,582
Production workers	9,110	8,438	8,305	8,279	8,345	8,412	8,436	8,500	8,347	8,323	8,440	8,313	8,153	7,953	7,774
Lumber and wood products	766.9	690.3	674.6	674.5	678.3	686.9	703.4	711.0	708.6	701.5	691.0	664.5	638.7	618.2	592.8
Furniture and fixtures	497.8	466.8	469.6	471.7	472.1	478.0	479.0	480.5	472.0	480.6	484.7	483.5	476.5	472.2	461.8
Stone, clay, and glass products	708.7	665.6	635.0	630.6	639.5	652.6	659.7	671.0	666.7	669.1	664.5	652.8	641.2	618.4	590.7
Primary metal industries	1,253.9	1,144.1	1,136.7	1,137.7	1,141.3	1,149.9	1,147.5	1,155.5	1,135.5	1,140.3	1,138.8	1,109.3	1,087.8	1,060.6	1,048.2
Fabricated metal products	1,717.7	1,609.0	1,580.2	1,578.1	1,585.4	1,593.7	1,596.1	1,606.8	1,584.5	1,580.9	1,607.5	1,584.2	1,563.5	1,530.9	1,495.7
Machinery, except electrical	2,484.8	2,497.0	2,496.9	2,498.4	2,504.3	2,506.1	2,506.6	2,531.3	2,517.4	2,511.4	2,540.7	2,528.4	2,512.3	2,487.8	2,473.9
Electric and electronic equipment	2,116.9	2,103.2	2,114.0	2,112.3	2,119.5	2,129.7	2,134.7	2,152.7	2,138.9	2,146.1	2,164.8	2,158.3	2,131.3	2,102.2	2,082.8
Transportation equipment	2,077.2	1,875.3	1,854.9	1,824.8	1,860.4	1,874.3	1,877.4	1,882.7	1,840.3	1,799.6	1,848.3	1,832.3	1,803.0	1,766.9	1,732.7
Instruments and related products	691.2	708.5	712.4	710.1	712.1	714.4	715.2	723.2	722.1	726.2	723.1	720.0	718.6	717.3	711.7
Miscellaneous manufacturing	444.8	419.3	398.0	403.3	406.7	411.3	413.4	419.5	412.3	421.8	428.7	429.9	426.2	414.2	391.9
Nondurable goods	8,280	8,118	8,003	8,023	8,040	8,056	8,107	8,197	8,139	8,285	8,308	8,205	8,123	8,019	7,867
Production workers	5,958	5,786	5,670	5,692	5,704	5,715	5,757	5,825	5,761	5,907	5,936	5,834	5,751	5,648	5,521
Food and kindred products	1,732.5	1,710.8	1,645.2	1,639.2	1,632.5	1,631.0	1,648.1	1,673.4	1,714.8	1,773.2	1,776.1	1,729.0	1,680.2	1,657.5	1,614.9
Tobacco manufactures	70.0	69.2	72.0	70.6	68.3	66.2	65.2	66.4	66.3	75.6	77.7	77.0	74.9	72.8	71.7
Textile mill products	885.1	852.7	841.0	841.1	840.9	841.6	844.3	851.0	836.5	847.3	850.2	834.3	826.8	817.8	795.7
Apparel and other textile products	1,304.3	1,265.8	1,222.8	1,238.7	1,250.2	1,256.2	1,265.9	1,263.9	1,231.1	1,276.8	1,287.3	1,274.1	1,259.5	1,223.9	1,185.1
Paper and allied products	706.8	694.0	687.7	687.7	688.6	690.9	693.1	701.0	696.4	700.3	702.0	691.4	686.4	682.1	675.3
Printing and publishing	1,235.1	1,258.3	1,269.0	1,273.6	1,278.2	1,280.4	1,281.8	1,286.2	1,286.5	1,289.4	1,294.1	1,299.7	1,305.1	1,310.7	1,301.8
Chemicals and allied products	1,109.3	1,107.4	1,100.1	1,102.9	1,106.8	1,106.2	1,110.3	1,121.1	1,116.6	1,112.0	1,110.5	1,104.4	1,100.2	1,096.2	1,092.0
Petroleum and coal products	209.8	196.6	206.5	205.7	207.0	209.5	212.9	215.4	216.1	215.4	212.7	211.4	210.4	207.2	199.2
Rubber and miscellaneous plastics products	781.6	730.7	731.8	734.2	737.2	743.5	749.2	759.0	747.0	756.8	760.8	748.2	738.6	726.6	718.5
Leather and leather products	245.7	232.6	226.9	229.5	230.4	231.7	235.9	239.1	227.5	238.6	237.0	235.7	232.1	222.3	212.3
TRANSPORTATION AND PUBLIC UTILITIES	5,136	5,143	5,063	5,076	5,095	5,120	5,149	5,195	5,177	5,175	5,222	5,204	5,183	5,140	5,047
WHOLESALE AND RETAIL TRADE	20,192	20,386	20,366	20,196	20,290	20,513	20,672	20,795	20,735	20,811	20,919	20,999	21,149	21,403	20,726
WHOLESALE TRADE	5,204	5,281	5,276	5,273	5,293	5,317	5,335	5,381	5,376	5,386	5,370	5,381	5,379	5,353	5,304
RETAIL TRADE	14,989	15,104	15,090	14,923	14,997	15,196	15,337	15,414	15,359	15,425	15,549	15,618	15,769	16,050	15,422
FINANCE, INSURANCE, AND REAL ESTATE	4,975	5,168	5,235	5,245	5,263	5,295	5,326	5,384	5,408	5,408	5,361	5,349	5,344	5,351	5,327
SERVICES	17,112	17,901	17,972	18,126	18,287	18,512	18,633	18,764	18,847	18,835	18,812	18,826	18,800	18,754	18,503
GOVERNMENT	15,947	16,249	16,216	16,458	16,493	16,457	16,414	16,203	15,387	15,148	15,560	16,021	16,157	16,129	15,884
Federal	2,773	2,866	2,773	2,774	2,769	2,773	2,782	2,825	2,833	2,803	2,735	2,737	2,729	2,726	2,708
State and local	13,174	13,383	13,443	13,684	13,724	13,684	13,632	13,378	12,554	12,345	12,825	13,284	13,428	13,403	13,176

11. Employment by industry division and major manufacturing group, seasonally adjusted

[Nonagricultural payroll data, in thousands]

Industry division and group	1981												1982
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.^{p}	Jan.^{p}
TOTAL	91,091	91,258	91,347	91,458	91,564	91,615	91,880	91,901	92,033	91,832	91,522	91,096	90,859
MINING	1,083	1,091	1,098	950	957	1,110	1,132	1,151	1,162	1,162	1,172	1,176	1,172
CONSTRUCTION	4,390	4,389	4,416	4,418	4,334	4,284	4,272	4,275	4,272	4,259	4,229	4,191	4,052
MANUFACTURING	20,174	20,177	20,191	20,332	20,414	20,424	20,535	20,505	20,496	20,241	20,017	19,750	19,537
Production workers	14,053	14,053	14,074	14,187	14,247	14,245	14,32	14,294	14,281	14,030	13,797	13,532	13,366
Durable goods	12,084	12,074	12,099	12,207	12,254	12,278	12,333	12,332	12,311	12,115	11,932	11,727	11,588
Production workers	8,306	8,297	8,325	8,412	8,442	8,455	8,491	8,485	8,465	8,267	8,083	7,880	7,772
Lumber and wood products	689	691	692	702	710	699	702	686	677	652	634	618	606
Furniture and fixtures	484	486	467	478	484	486	488	487	485	480	470	465	456
Stone, clay, and glass products	654	654	651	656	658	658	658	660	655	644	634	621	606
Primary metal industries	1,137	1,140	1,141	1,145	1,142	1,144	1,140	1,148	1,139	1,114	1,090	1,061	1,048.
Fabricated metal products	1,579	1,577	1,581	1,595	1,604	1,604	1,614	1,610	1,606	1,575	1,546	1,514	1,494
Machinery, except electrical	2,487	2,481	2,480	2,491	2,511	2,521	2,533	2,542	2,551	2,549	2,522	2,490	2,464
Electric and electronic equipment	2,110	2,110	2,117	2,134	2,143	2,148	2,163	2,166	2,163	2,150	2,119	2,088	2,077
Transportation equipment	1,840	1,833	1,849	1,878	1,872	1,886	1,886	1,889	1,889	1,811	1,783	1,736	1,719
Instruments and related products	713	711	712	714	716	717	723	727	727	723	719	716	712
Miscellaneous manufacturing	411	411	409	414	414	415	426	417	419	417	415	418	404
Nondurable goods	8,090	8,103	8,092	8,125	8,160	8,146	8,202	8,173	8,185	8,126	8,065	8,023	7,949
Production workers	5,747	5,756	5,749	5,775	5,805	5,790	5,836	5,809	5,816	5,763	5,714	5,652	5,594
Food and kindred products	1,696	1,705	1,691	1,697	1,703	1,673	1,691	1,668	1,669	1,675	1,676	1,669	1,665
Tobacco manufactures	71	72	72	72	71	71	71	73	71	70	70	69	71
Textile mill products	841	839	836	842	843	848	856	849	849	833	823	814	795
Apparel and other textile products	1,244	1,243	1,243	1,250	1,258	1,264	1,278	1,272	1,273	1,259	1,251	1,233	1,206
Paper and allied products	691	691	689	691	694	695	696	698	703	691	686	682	678
Printing and publishing	1,269	1,272	1,276	1,280	1,283	1,284	1,290	1,295	1,301	1,302	1,302	1,300	1,302
Chemicals and allied products	1,106	1,109	1,108	1,107	1,109	1,111	1,110	1,106	1,112	1,108	1,104	1,102	1,097
Petroleum and coal products	211	210	210	211	213	212	212	212	211	210	210	209	203
Rubber and miscellaneous plastics products	730	731	734	744	753	757	760	764	760	744	733	722	716
Leather and leather products	231	231	231	231	233	232	238	236	236	234	230	223	216
TRANSPORTATION AND PUBLIC UTILITIES	5,124	5,135	5,139	5,161	5,148	5,149	5,167	5,170	5,186	5,168	5,147	5,109	5,108
WHOLESALE AND RETAIL TRADE	20,629	20,600	20,635	20,636	20,714	20,717	20,796	20,862	20,872	20,916	20,838	20,725	20,893
WHOLESALE TRADE	5,305	5,313	5,316	5,333	5,346	5,349	5,360	5,375	5,370	5,360	5,363	5,337	5,331
RETAIL TRADE	15,224	15,287	15,319	15,303	15,368	15,368	15,436	15,487	15,502	15,556	15,475	15,388	15,562
FINANCE, INSURANCE, AND REAL ESTATE	5,266	5,283	5,293	5,316	5,326	5,331	5,344	5,354	5,366	5,360	5,355	5,367	5,359
SERVICES	18,300	18,343	18,371	18,475	18,540	18,560	18,642	18,667	18,774	18,786	18,838	18,848	18,842
GOVERNMENT	16,223	16,240	16,204	16,170	16,131	16,040	15,992	15,917	15,905	15,938	15,926	15,930	15,896
Federal	2,799	2,795	2,781	2,767	2,779	2,781	2,777	2,770	2,765	2,759	2,748	2,738	2,733
State and local	13,424	13,445	13,423	13,403	13,352	13,259	13,215	13,147	13,140	13,179	13,178	13,192	13,163

12. Labor turnover rates in manufacturing, 1977 to date

[Per 100 employees]

Year	Annual average	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Total accessions												
1977	4.0	3.7	3.7	4.0	3.8	4.6	4.9	4.3	5.3	4.8	3.9	3.1	2.4
1978	4.1	3.8	3.2	3.8	4.0	4.7	4.9	4.4	5.4	4.9	4.3	3.3	2.4
1979	4.0	4.0	3.4	3.8	3.9	4.7	4.8	4.3	5.0	4.5	4.1	3.0	2.2
1980	3.5	3.8	3.3	3.5	3.1	3.4	3.9	3.8	4.5	4.3	3.8	2.7	2.2
1981	...	3.4	3.0	3.4	3.3	3.5	4.0	3.6	4.0	3.5	2.8	2.4	^{p}1.7
	New hires												
1977	2.8	2.2	2.1	2.6	2.7	3.5	3.7	3.0	4.0	3.5	3.0	2.2	1.6
1978	3.1	2.5	2.2	2.7	2.9	3.6	3.9	3.3	4.2	3.9	3.5	2.6	1.7
1979	2.9	2.8	2.5	2.8	2.9	3.6	3.8	3.1	3.7	3.4	3.1	2.2	1.5
1980	2.1	2.4	2.2	2.3	2.0	2.1	2.4	2.1	2.5	2.6	2.2	1.6	1.2
1981	...	1.8	1.8	2.0	2.0	2.3	2.8	2.4	2.7	2.3	1.8	1.3	^{p}.8
	Recalls												
1977	.9	1.2	1.3	1.1	.9	.8	.8	.9	1.0	.8	.6	.6	.6
1978	.7	1.0	.7	.8	.8	.8	.7	.8	.9	.7	.6	.5	.5
1979	.7	.9	.7	.7	.7	.8	.7	.9	.9	.8	.7	.6	.5
1980	1.1	1.1	.9	.9	.8	1.0	1.2	1.5	1.7	1.4	1.1	.9	.6
1981	...	1.3	1.0	1.1	1.1	1.0	.9	1.0	1.0	.9	.8	.9	^{p}.7
	Total separations												
1977	3.8	3.9	3.4	3.4	3.4	3.5	3.5	4.3	5.1	4.9	3.8	3.4	3.4
1978	3.9	3.6	3.1	3.5	3.6	3.7	3.8	4.1	5.3	4.9	4.1	3.5	3.4
1979	4.0	3.8	3.2	3.6	3.7	3.8	3.9	4.3	5.7	4.7	4.2	3.8	3.5
1980	4.0	4.1	3.5	3.7	4.7	4.8	4.4	4.2	4.8	4.1	3.8	3.0	3.1
1981	...	3.6	3.1	3.2	3.1	3.1	3.2	3.6	4.4	4.1	4.2	4.1	^{p}4.0
	Quits												
1977	1.8	1.4	1.3	1.6	1.7	1.9	1.9	1.9	3.1	2.8	1.9	1.5	1.2
1978	2.1	1.5	1.4	1.8	2.0	2.1	2.2	2.1	3.5	3.1	2.3	1.7	1.3
1979	2.0	1.8	1.6	1.9	2.0	2.1	2.1	2.0	3.3	2.7	2.1	1.6	1.1
1980	1.5	1.6	1.5	1.6	1.5	1.5	1.4	1.4	2.2	1.9	1.4	1.1	.9
1981	...	1.2	1.1	1.2	1.3	1.3	1.4	1.5	2.1	1.8	1.3	.9	^{p}.7
	Layoffs												
1977	1.1	1.7	1.4	1.0	.9	.8	.8	1.5	1.0	1.1	1.1	1.1	1.5
1978	.9	1.2	.9	.9	.8	.7	.7	1.1	.8	.8	.9	1.0	1.4
1979	1.1	1.1	.8	.8	.9	.7	.9	1.4	1.3	1.1	1.2	1.5	1.7
1980	1.7	1.6	1.2	1.3	2.3	2.5	2.2	2.0	1.7	1.4	1.5	1.4	1.6
1981	...	1.6	1.2	1.2	1.0	1.0	1.1	1.3	1.3	1.5	2.2	2.6	^{p}2.7

13. Labor turnover rates in manufacturing, by major industry group

[Per 100 employees]

Major industry group	Accession rates									Separation rates								
	Total			New Hires			Recalls			Total			Quits			Layoffs		
	Dec. 1980	Nov. 1981	Dec. 1981^{p}	Dec. 1980	Nov. 1981	Dec. 1981^{p}	Dec. 1980	Nov. 1981	Dec. 1981^{p}	Dec. 1980	Nov. 1981	Dec. 1981^{p}	Dec. 1980	Nov. 1981	Dec. 1981^{p}	Dec. 1980	Nov. 1981	Dec. 1981^{p}
MANUFACTURING	2.2	2.4	1.7	1.2	1.3	0.8	0.8	0.9	0.7	3.1	4.1	4.0	0.9	0.9	0.7	1.6	2.6	2.7
Seasonally adjusted	3.5	3.1	2.7	2.1	1.6	1.4	1.1	1.2	1.0	3.5	4.1	3.9	1.5	1.1	1.1	1.2	2.3	2.1
Durable goods	2.0	2.1	1.5	1.0	1.0	.7	.7	.9	.6	2.6	4.2	3.9	.7	.7	.5	1.4	2.8	2.8
Lumber and wood products	2.8	2.8	2.6	1.6	1.3	.8	1.0	1.4	1.6	4.9	7.6	5.9	1.4	1.3	1.0	2.8	5.5	4.1
Furniture and fixtures	2.8	2.3	1.6	1.7	1.5	.8	1.0	.7	.7	3.3	4.5	3.9	1.3	1.2	.8	1.3	2.7	2.5
Stone, clay, and glass products	2.0	2.0	1.4	1.1	.9	.6	.8	1.0	.7	4.7	4.8	6.4	.8	.7	.6	3.1	3.5	5.3
Primary metal industries	2.3	2.7	1.6	.6	.4	.3	1.5	2.1	1.2	2.5	5.4	5.0	.3	.3	.3	1.6	4.4	4.3
Fabricated metal products	1.9	2.1	1.5	1.1	1.1	.6	.7	.8	.6	2.9	4.7	4.4	.8	.7	.6	1.6	3.2	3.3
Machinery, except electrical	1.7	1.7	1.2	1.0	1.1	.7	.5	.4	.3	1.7	2.7	2.3	.6	.6	.4	.6	1.6	1.4
Electric and electronic equipment	1.8	2.1	1.5	1.0	1.2	.8	.5	.5	.4	2.0	3.4	3.4	.7	.7	.6	.7	2.0	2.0
Transportation equipment	1.8	2.3	1.4	.6	.8	.5	.6	1.2	.7	2.5	4.9	4.0	.4	.5	.4	1.4	3.7	3.1
Instruments and related products	1.5	1.6	1.0	1.2	1.2	.8	.2	.2	.1	1.4	1.9	1.9	.7	.7	.6	.3	.7	.8
Miscellaneous manufacturing	2.5	3.0	2.1	1.5	2.0	1.2	.8	.8	.8	5.9	6.1	6.8	1.1	1.3	.9	4.0	3.9	5.3
Nondurable goods	2.5	2.7	2.0	1.5	1.6	1.1	.9	.9	.8	3.8	4.0	4.1	1.1	1.2	.9	2.1	2.2	2.6
Food and kindred products	3.4	3.7	3.0	1.8	2.0	1.5	1.4	1.5	1.3	6.3	5.9	5.6	1.5	1.4	1.1	4.1	3.8	3.8
Tobacco manufacturers	4.8	4.4	2.8	1.5	1.1	1.0	2.7	2.7	1.6	3.7	6.5	3.6	.3	.4	.5	2.8	5.3	2.7
Textile mill products	2.0	2.4	1.6	1.4	1.4	.8	.4	.8	.7	2.6	3.7	3.6	1.1	1.1	.8	.9	1.9	2.3
Apparel and other products	3.0	3.9	2.6	1.5	2.3	1.2	1.4	1.3	1.2	5.3	5.6	5.9	1.6	1.8	1.2	3.2	3.1	4.0
Paper and allied products	1.7	1.7	1.3	.9	.8	.5	.7	.7	.6	2.5	2.6	2.9	.5	.5	.4	1.4	1.7	2.0
Printing and publishing	2.5	2.7	2.1	1.9	2.1	1.6	.5	.5	.4	3.0	2.8	2.7	1.5	1.5	1.3	.9	.8	.9
Chemicals and allied products	1.1	1.0	.8	.8	.7	.5	.2	.2	.2	1.4	1.5	1.6	.4	.4	.3	.5	.7	.8
Petroleum and coal products	1.4	1.1	1.1	1.1	.8	.9	.2	.2	.2	2.0	1.7	3.1	.4	.4	.4	1.1	.8	2.3
Rubber and miscellaneous plastics products	2.6	2.2	1.5	1.4	1.2	.8	1.0	.7	.6	3.3	4.8	4.3	1.0	.9	.7	1.7	3.1	3.0
Leather and leather products	3.4	3.4	2.4	2.2	2.1	1.2	1.0	1.0	1.1	6.0	5.5	9.6	1.8	2.0	1.4	3.5	2.7	7.5

NOTICE: After release of final December 1981 data in the April issue, the Bureau of Labor Statistics will discontinue computation and publication of the data in tables 12 and 13.

14. Hours and earnings, by industry division, 1950–80

[Gross averages, production or nonsupervisory workers on nonagricultural payrolls]

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Total private			Mining			Construction			Manufacturing		
1950	$53.13	39.8	$1.335	$67.16	37.9	$1.772	$69.68	37.4	$1.863	$58.32	40.5	$1.440
1951	57.86	39.9	1.45	74.11	38.4	1.93	76.96	38.1	2.02	63.34	40.6	1.56
1952	60.65	39.9	1.52	77.59	38.6	2.01	82.86	38.9	2.13	66.75	40.7	1.64
1953	63.76	39.6	1.61	83.03	38.8	2.14	86.41	37.9	2.28	70.47	40.5	1.74
1954	64.52	39.1	1.65	82.60	38.6	2.14	88.91	37.2	2.39	70.49	39.6	1.78
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1956	70.74	39.3	1.80	95.06	40.8	2.33	96.38	37.5	2.57	78.78	40.4	1.95
1957	73.33	38.8	1.89	98.25	40.1	2.45	100.27	37.0	2.71	81.19	39.8	2.04
1958	75.08	38.5	1.95	96.08	38.9	2.47	103.78	36.8	2.82	82.32	39.2	2.10
1959[1]	78.78	39.0	2.02	103.68	40.5	2.56	108.41	37.0	2.93	88.26	40.3	2.19
1960	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1961	82.60	38.6	2.14	106.92	40.5	2.64	118.08	36.9	3.20	92.34	39.8	2.32
1962	85.91	38.7	2.22	110.70	41.0	2.70	122.47	37.0	3.31	96.56	40.4	2.39
1963	88.46	38.8	2.28	114.40	41.6	2.75	127.19	37.3	3.41	99.23	40.5	2.45
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.75	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	269.34	40.2	6.70
1980	235.10	35.3	6.66	396.14	43.2	9.17	367.04	37.0	9.92	288.62	39.7	7.27

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950	....	....	....	$44.55	40.5	$1.100	$50.52	37.7	$1.340	....	....	....
1951	....	....	....	47.79	40.5	1.18	54.67	37.7	1.45	....	....	....
1952	....	....	....	49.20	40.0	1.23	57.08	37.8	1.51	....	....	....
1953	....	....	....	51.35	39.5	1.30	59.57	37.7	1.58	....	....	....
1954	....	....	....	53.33	39.5	1.35	62.04	37.6	1.65	....	....	....
1955	....	....	....	55.16	39.4	1.40	63.92	37.6	1.70	....	....	....
1956	....	....	....	57.48	39.1	1.47	65.68	36.9	1.78	....	....	....
1957	....	....	....	59.60	38.7	1.54	67.53	36.7	1.84	....	....	....
1958	....	....	....	61.76	38.6	1.60	70.12	37.1	1.89	....	....	....
1959[1]	....	....	....	64.41	38.8	1.66	72.74	37.3	1.95	....	....	....
1960	....	....	....	66.01	38.6	1.71	75.14	37.2	2.02	....	....	....
1961	....	....	....	67.41	38.3	1.76	77.12	36.9	2.09	....	....	....
1962	....	....	....	69.91	38.2	1.83	80.94	37.3	2.17	....	....	....
1963	....	....	....	72.01	38.1	1.89	84.38	37.5	2.25	....	....	....
1964	$118.78	41.1	$2.89	74.66	37.9	1.97	85.79	37.3	2.30	$70.03	36.1	$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	351.25	39.6	8.87	176.46	32.2	5.48	209.24	36.2	5.78	190.71	32.6	5.85

[1] Data include Alaska and Hawaii beginning in 1959.

15. Weekly hours, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981												1982
	1979	1980	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec. [p]	Jan. [p]
TOTAL PRIVATE	35.7	35.3	35.1	35.0	35.2	35.2	35.2	35.4	35.6	35.6	35.0	35.1	35.1	35.2	33.7
MINING	43.0	43.2	43.6	42.8	42.3	43.6	43.8	42.1	43.5	44.1	43.8	44.5	44.3	44.8	42.4
CONSTRUCTION	37.0	37.0	36.4	35.0	37.2	36.9	36.9	37.2	37.7	37.3	35.7	37.5	37.0	37.0	33.4
MANUFACTURING	40.2	39.7	39.9	39.5	39.9	39.7	40.1	40.2	39.6	39.8	39.5	39.7	39.6	39.9	36.8
Overtime hours	3.3	2.8	2.9	2.8	2.8	2.6	2.9	3.0	2.8	3.0	2.9	2.8	2.6	2.6	2.2
Durable goods	40.8	40.1	40.4	39.9	40.5	40.3	40.6	40.6	39.9	40.2	39.8	40.1	40.0	40.4	37.4
Overtime hours	3.5	2.8	2.9	2.8	2.9	2.7	3.0	3.0	2.8	2.9	2.8	2.7	2.5	2.6	2.0
Lumber and wood products	39.4	38.6	38.8	38.5	39.0	39.1	39.6	39.5	38.7	39.0	37.9	38.2	37.6	38.3	33.7
Furniture and fixtures	38.7	38.1	38.1	38.3	38.8	38.2	38.5	38.9	37.8	38.6	37.7	38.6	38.1	38.8	32.5
Stone, clay, and glass products	41.5	40.8	40.3	39.6	40.6	40.9	41.1	41.2	40.8	41.0	40.6	40.5	40.5	40.2	37.1
Primary metal industries	41.4	40.1	41.1	40.7	41.1	41.2	40.9	40.9	40.3	40.3	40.8	39.6	39.7	39.6	38.0
Fabricated metal products	40.7	40.4	40.4	40.0	40.6	40.2	40.7	40.8	39.9	40.3	39.6	40.1	40.0	40.5	37.8
Machinery except electrical	41.8	41.0	41.2	40.8	41.2	40.8	41.2	41.1	40.4	40.7	40.4	40.6	40.9	41.6	39.1
Electric and electronic equipment	40.3	39.8	40.1	39.6	40.2	39.8	40.1	40.2	39.7	40.0	39.7	39.9	39.8	40.4	37.6
Transportation equipment	41.1	40.6	40.9	40.1	41.1	41.0	41.6	41.3	40.7	40.5	39.9	40.9	40.8	41.4	37.2
Instruments and related products	40.8	40.5	40.6	40.5	40.6	39.9	40.3	40.4	39.9	40.4	40.4	40.4	40.8	40.5	38.0
Miscellaneous manufacturing	38.8	38.7	38.6	38.4	38.9	38.6	38.9	39.0	38.5	39.0	38.7	39.3	39.5	39.1	36.5
Nondurable goods	39.3	39.0	39.2	38.9	39.1	38.9	39.4	39.5	39.1	39.4	39.1	39.1	39.1	39.3	35.8
Overtime hours	3.1	2.8	2.9	2.8	2.7	2.6	2.9	2.9	2.8	3.0	3.1	2.9	2.8	2.7	2.4
Food and kindred products	39.9	39.7	40.0	39.3	39.2	39.3	39.8	39.8	39.6	40.0	39.8	39.6	39.9	40.3	38.7
Tobacco manufactures	38.0	38.1	38.6	38.5	37.2	37.2	38.6	38.5	38.6	40.7	40.2	39.4	38.8	38.1	35.6
Textile mill products	40.4	40.1	39.9	39.9	40.1	39.4	40.3	40.4	39.7	40.0	38.9	39.4	39.2	39.0	30.6
Apparel and other textile products	35.3	35.4	35.2	35.3	35.8	35.2	36.0	36.4	36.0	36.3	35.2	35.8	35.8	35.5	29.2
Paper and allied products	42.6	42.3	42.7	42.2	42.4	42.3	42.5	42.7	42.4	42.5	43.2	42.4	42.3	42.7	40.9
Printing and publishing	37.5	37.1	37.1	36.9	37.1	37.0	37.3	37.2	37.2	37.5	37.4	37.2	37.3	38.0	36.1
Chemicals and allied products	41.9	41.5	41.6	41.5	41.6	41.6	41.6	41.6	41.5	41.4	42.2	41.5	41.7	42.0	40.4
Petroleum and coal products	43.8	41.8	42.6	42.5	42.6	43.9	43.6	43.5	43.7	43.0	44.4	43.1	43.0	42.7	43.9
Rubber and miscellaneous plastics products	40.5	40.1	41.0	40.2	40.7	40.4	40.9	40.9	40.0	40.4	39.8	40.2	39.9	40.0	37.3
Leather and leather products	36.5	36.7	36.5	36.7	36.8	36.3	37.4	38.1	36.6	36.9	36.0	36.7	36.6	36.4	34.8
TRANSPORTATION AND PUBLIC UTILITIES	39.9	39.6	39.4	39.5	39.4	39.3	39.3	39.8	39.8	39.5	39.2	39.1	39.3	39.2	38.5
WHOLESALE AND RETAIL TRADE	32.6	32.2	31.7	31.7	31.9	32.1	32.0	32.3	32.8	32.8	32.2	31.9	31.9	32.2	31.0
WHOLESALE TRADE	38.8	38.5	38.5	38.3	38.5	38.5	38.5	38.6	38.8	38.7	38.5	38.7	38.6	38.7	37.7
RETAIL TRADE	30.6	30.2	29.5	29.6	29.8	30.0	29.9	30.4	30.9	30.9	30.2	29.8	29.8	30.2	28.9
FINANCE, INSURANCE, AND REAL ESTATE	36.2	36.2	36.4	36.4	36.4	36.3	36.1	36.1	36.3	36.3	36.0	36.2	36.2	36.1	36.1
SERVICES	32.7	32.6	32.5	32.6	32.6	32.6	32.5	32.7	33.0	32.9	32.4	32.5	32.5	32.6	32.1

16. Weekly hours, by industry division and major manufacturing group, seasonally adjusted

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	1981												1982
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.ᵖ	Jan.ᵖ
TOTAL PRIVATE	35.3	35.2	35.3	35.4	35.3	35.2	35.3	35.2	34.8	35.0	35.0	34.9	34.1
MANUFACTURING	40.1	39.8	39.9	40.2	40.3	40.1	40.0	40.0	39.3	39.5	39.3	39.0	36.9
Overtime hours	3.0	2.8	2.8	2.9	3.2	3.0	3.0	3.0	2.7	2.7	2.5	2.4	2.2
Durable goods	40.6	40.1	40.4	40.8	40.8	40.5	40.5	40.5	39.7	39.9	39.7	39.3	37.5
Overtime hours	3.0	2.8	2.8	3.0	3.2	3.0	3.0	3.0	2.6	2.6	2.4	2.4	2.1
Lumber and wood products	39.8	39.1	39.1	38.6	39.8	38.0	38.8	38.6	37.3	37.6	37.5	37.8	34.6
Furniture and fixtures	38.5	38.6	38.6	38.8	39.0	38.9	38.5	38.6	37.5	38.1	37.7	37.6	32.8
Stone, clay, and glass products	41.3	40.6	40.7	41.2	41.0	40.8	40.9	40.8	40.3	40.0	40.0	39.6	38.0
Primary metal industries	41.1	40.7	41.0	41.2	41.0	40.8	40.5	40.7	40.6	39.8	39.7	39.2	38.0
Fabricated metal products	40.5	40.2	40.4	40.9	40.9	40.7	40.5	40.5	39.5	40.0	39.6	39.3	37.9
Machinery, except electrical	41.1	40.8	40.9	41.3	41.4	41.1	41.1	41.2	40.3	40.7	40.6	40.3	39.0
Electric and electronic equipment	40.1	39.6	40.0	40.2	40.4	40.2	40.5	40.4	39.6	39.8	39.3	39.3	37.6
Transportation equipment	41.3	40.5	40.9	42.0	41.8	41.4	41.2	41.3	39.9	40.5	40.3	39.4	37.5
Instruments and related products	40.6	40.5	40.5	40.1	40.4	40.4	40.5	40.8	40.5	40.4	40.3	39.7	38.0
Miscellaneous manufacturing	38.8	38.6	38.7	38.9	39.2	39.1	39.2	39.1	38.4	38.0	38.0	38.4	36.7
Nondurable goods	39.5	39.2	39.2	39.3	39.6	39.4	39.3	39.3	38.9	39.0	38.8	38.6	36.1
Overtime hours	3.0	2.9	2.8	2.9	3.1	3.0	2.9	2.9	2.8	2.8	2.7	2.5	2.4
Food and kindred products	40.3	39.9	39.7	40.1	40.0	39.8	39.4	39.4	39.2	39.5	39.6	39.7	39.0
Textile mill products	40.0	40.0	39.9	39.8	40.5	40.2	40.4	40.3	38.9	39.3	38.8	38.2	30.7
Apparel and other textile products	36.1	35.6	35.7	35.5	36.0	36.1	35.9	36.1	35.2	35.7	35.6	35.1	29.9
Paper and allied products	42.6	42.4	42.4	42.6	42.8	42.7	42.7	42.7	43.1	42.4	41.9	41.8	40.8
Printing and publishing	37.5	37.3	37.1	37.3	37.6	37.4	37.3	37.3	37.1	37.1	36.9	37.3	36.4
Chemicals and allied products	41.6	41.6	41.5	41.5	41.7	41.7	41.8	41.7	42.3	41.5	41.3	41.5	40.4
Petroleum and coal products	43.8	43.8	43.5	44.1	43.8	43.4	43.1	42.8	43.3	42.1	42.3	42.7	45.2
Rubber and miscellaneous plastics products	40.9	40.3	40.5	40.7	41.3	41.0	40.5	40.6	39.6	40.0	39.6	39.3	37.2
Leather and leather products	36.8	37.0	37.1	36.6	37.1	37.1	36.5	36.9	36.1	36.8	36.7	36.1	35.1
WHOLESALE AND RETAIL TRADE	32.2	32.2	32.2	32.3	32.1	32.1	32.2	32.1	32.1	31.9	32.0	31.9	31.5
WHOLESALE TRADE	38.8	38.6	38.6	38.6	38.5	38.5	38.7	38.6	38.5	38.5	38.6	38.4	37.9
RETAIL TRADE	30.1	30.2	30.2	30.3	30.1	30.1	30.1	30.1	30.1	29.9	29.9	29.8	29.5
SERVICES	32.7	32.8	32.8	32.8	32.7	32.5	32.5	32.4	32.4	32.5	32.6	32.7	32.3

NOTE: The industry divisions of mining; construction; tobacco manufactures (a major manufacturing group, nondurable goods); transportation and public utilities; and finance, insurance, and real estate are no longer shown. This is because the seasonal component in these is small relative to the trend-cycle, or irregular components, or both, and consequently cannot be precisely seperated.

17. Hourly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981												1982
	1979	1980	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.ᵖ	Jan.ᵖ
TOTAL PRIVATE	$6.16	$6.66	$7.03	$7.06	$7.10	$7.13	$7.17	$7.20	$7.24	$7.30	$7.40	$7.42	$7.46	$7.44	$7.53
MINING	8.49	9.17	9.77	9.86	9.85	9.70	9.68	9.94	10.11	10.15	10.29	10.28	10.42	10.41	10.58
CONSTRUCTION	9.27	9.92	10.42	10.41	10.44	10.43	10.53	10.60	10.74	10.87	11.02	11.10	11.12	11.19	11.57
MANUFACTURING	6.70	7.27	7.73	7.75	7.80	7.88	7.92	7.97	8.02	8.02	8.15	8.15	8.20	8.25	8.38
Durable goods	7.13	7.75	8.23	8.26	8.32	8.40	8.45	8.52	8.55	8.57	8.68	8.71	8.75	8.80	8.86
Lumber and wood products	6.07	6.53	6.79	6.81	6.79	6.83	6.92	7.10	7.16	7.13	7.15	7.09	7.15	7.14	7.39
Furniture and fixtures	5.06	5.49	5.71	5.74	5.76	5.78	5.83	5.89	5.91	5.98	6.00	6.05	6.04	6.10	6.21
Stone, clay, and glass products	6.85	7.50	7.87	7.89	7.94	8.11	8.20	8.31	8.39	8.41	8.53	8.50	8.54	8.55	8.61
Primary metal industries	8.98	9.77	10.36	10.56	10.52	10.76	10.88	10.76	10.79	10.99	11.22	10.97	11.10	11.09	11.14
Fabricated metal products	6.85	7.45	7.89	7.91	8.01	8.05	8.17	8.23	8.22	8.27	8.34	8.39	8.43	8.53	8.55
Machinery, except electrical	7.32	8.00	8.53	8.56	8.62	8.67	8.75	8.81	8.85	8.86	8.98	9.05	9.10	9.19	9.18
Electric and electronic equipment	6.32	6.95	7.41	7.43	7.47	7.51	7.55	7.60	7.69	7.76	7.79	7.84	7.86	7.92	7.96
Transportation equipment	8.53	9.32	9.96	9.93	10.08	10.14	10.25	10.36	10.35	10.30	10.41	10.65	10.66	10.67	10.58
Instruments and related products	6.17	6.80	7.19	7.20	7.23	7.25	7.31	7.34	7.44	7.56	7.60	7.61	7.70	7.72	7.75
Miscellaneous manufacturing	5.03	5.47	5.82	5.83	5.86	5.91	5.93	5.93	5.98	5.97	6.07	6.06	6.12	6.21	6.34
Nondurable goods	6.01	6.56	6.97	6.98	7.01	7.08	7.11	7.14	7.23	7.24	7.37	7.34	7.39	7.45	7.60
Food and kindred products	6.27	6.86	7.21	7.24	7.29	7.37	7.43	7.43	7.47	7.50	7.58	7.53	7.63	7.71	7.83
Tobacco manufactures	6.67	7.73	8.50	8.56	8.61	8.90	9.03	9.33	9.43	8.61	8.06	8.58	8.96	8.92	9.13
Textile mill products	4.66	5.08	5.35	5.35	5.36	5.36	5.40	5.42	5.51	5.66	5.69	5.72	5.74	5.73	5.76
Apparel and other textile products	4.23	4.57	4.80	4.87	4.94	4.96	4.98	5.00	4.94	4.98	5.06	5.07	5.06	5.04	5.17
Paper and allied products	7.13	7.84	8.27	8.28	8.30	8.37	8.42	8.55	8.73	8.67	8.95	8.82	8.80	8.96	9.06
Printing and publishing	6.94	7.53	7.82	7.96	8.02	8.04	8.10	8.13	8.22	8.27	8.40	8.42	8.44	8.47	8.56
Chemicals and allied products	7.60	8.30	8.74	8.80	8.84	8.94	8.99	9.07	9.16	9.19	9.38	9.37	9.42	9.47	9.67
Petroleum and coal products	9.36	10.09	11.06	11.33	11.23	11.40	11.28	11.29	11.41	11.31	11.53	11.46	11.57	11.52	12.05
Rubber and miscellaneous plastics products	5.97	6.56	7.06	7.04	7.07	7.15	7.22	7.23	7.28	7.32	7.38	7.39	7.41	7.50	7.61
Leather and leather products	4.22	4.58	4.86	4.88	4.90	4.93	4.95	4.98	4.96	4.97	5.08	5.09	5.10	5.14	5.21
TRANSPORTATION AND PUBLIC UTILITIES	8.16	8.87	9.33	9.45	9.42	9.54	9.59	9.63	9.69	9.80	9.97	9.96	10.07	10.07	10.12
WHOLESALE AND RETAIL TRADE	5.06	5.48	5.80	5.84	5.85	5.87	5.89	5.89	5.91	5.94	6.04	6.00	6.03	6.00	6.16
WHOLESALE TRADE	6.39	6.96	7.32	7.38	7.42	7.47	7.51	7.51	7.59	7.67	7.71	7.74	7.81	7.81	7.93
RETAIL TRADE	4.53	4.88	5.18	5.20	5.20	5.22	5.23	5.23	5.24	5.26	5.37	5.29	5.32	5.30	5.44
FINANCE, INSURANCE, AND REAL ESTATE	5.27	5.78	6.10	6.21	6.19	6.20	6.24	6.24	6.27	6.37	6.38	6.42	6.51	6.47	6.57
SERVICES	5.36	5.85	6.21	6.27	6.29	6.30	6.33	6.33	6.34	6.41	6.51	6.57	6.67	6.65	6.77

18. Hourly Earnings Index for production or nonsupervisory workers on private nonagricultural payrolls, by industry division

[Seasonally adjusted data: 1977=100]

Industry	1981												1982	Dec. 1981 to Jan. 1982	Jan. 1981 to Jan. 1982
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.ᵖ	Jan.ᵖ		
TOTAL PRIVATE (in current dollars)	133.8	135.0	135.8	136.7	137.7	138.4	139.0	140.7	141.5	141.9	143.2	143.3	144.8	1.0	8.2
Mining[1]	142.1	143.2	144.0	145.7	145.6	147.2	148.9	149.4	151.5	151.3	153.3	152.7	154.5	1.2	8.8
Construction	127.6	128.0	128.6	129.0	129.4	130.4	131.8	132.5	132.9	134.3	135.4	136.1	140.8	3.5	10.4
Manufacturing	136.5	137.5	138.5	139.9	140.7	141.6	142.5	143.6	144.8	145.5	146.4	146.8	148.3	1.0	8.6
Transportation and public utilities	133.7	135.4	136.1	137.3	138.9	139.8	139.3	141.8	141.7	142.0	144.0	144.2	145.1	.7	8.5
Wholesale and retail trade	133.7	135.0	135.8	136.4	137.4	137.8	138.4	140.0	141.2	140.5	141.5	141.4	142.0	.5	6.2
Finance, insurance, and real estate	133.2	135.0	136.0	135.4	136.8	137.1	137.4	140.4	140.3	140.9	143.2	142.1	143.3	.9	7.6
Services	132.0	133.2	134.0	134.8	136.0	136.6	136.9	139.4	139.8	140.7	142.6	142.4	143.7	.9	8.8
TOTAL PRIVATE (in constant dollars)	92.8	92.7	92.8	93.0	93.1	92.9	92.2	92.7	92.1	92.0	92.4	92.1.	([2])	([2])	([2])

[1] This series is not seasonally adjusted because the seasonal component is small relative to the trend-cycle, irregular components, or both, and consequently cannot be separated with sufficient precision.

[2] Not available

19. Weekly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981												1982
	1979	1980	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.^{p}	Jan.^{p}
TOTAL PRIVATE	$219.91	$235.10	$246.75	$247.10	$249.92	$250.98	$252.38	$254.88	$257.74	$259.88	$259.00	$260.44	$261.85	$261.89	$253.76
MINING	365.07	396.14	425.97	422.01	416.66	422.92	423.96	418.47	439.79	447.62	450.70	457.46	461.61	466.37	448.59
CONSTRUCTION	342.99	367.04	379.29	364.35	388.37	384.87	388.56	394.32	404.90	405.45	393.41	416.25	411.44	414.03	386.44
MANUFACTURING	269.34	288.62	308.43	306.13	311.22	312.84	317.59	320.39	317.59	319.20	321.93	323.56	324.72	329.18	308.36
Durable goods	290.90	310.78	332.49	329.57	336.96	338.52	343.07	345.91	341.15	344.51	345.46	349.27	350.00	355.52	331.36
Lumber and wood products	239.16	252.06	263.45	262.19	264.81	267.05	274.03	280.45	277.09	278.07	270.98	270.84	268.84	273.46	249.04
Furniture and fixtures	195.82	209.17	217.55	219.84	223.49	220.80	224.46	229.12	223.40	230.83	228.20	233.53	230.12	236.68	201.83
Stone, clay, and glass products	284.28	306.00	317.16	312.44	322.36	331.70	337.02	342.37	342.31	344.81	348.32	344.25	345.87	343.71	319.43
Primary metal industries	371.77	391.78	425.80	429.79	432.37	443.31	436.81	440.08	434.84	442.90	457.78	434.41	440.67	439.16	423.32
Fabricated metal products	278.80	300.98	318.76	316.40	325.21	323.61	332.52	335.79	327.98	333.20	330.26	336.44	337.20	345.47	323.19
Machinery except electrical	305.98	328.00	351.44	349.25	355.14	353.74	360.50	362.09	357.54	360.00	362.79	367.43	372.19	382.30	358.94
Electric and electronic equipment	254.70	276.61	287.14	294.23	300.29	298.90	302.76	305.52	305.29	310.40	309.26	312.82	312.83	319.97	299.30
Transportation equipment	350.58	378.39	407.36	398.19	414.29	415.74	428.40	427.87	421.25	417.15	415.36	435.59	434.93	441.74	393.58
Instruments and related products	251.74	275.40	291.91	291.60	293.54	289.26	294.59	296.54	296.86	305.42	307.04	307.44	314.16	312.66	294.50
Miscellaneous manufacturing	195.16	211.69	224.65	223.87	227.57	228.13	230.66	231.27	230.23	232.83	234.91	238.16	241.74	242.81	231.41
Nondurable goods	236.19	255.84	273.22	271.52	274.00	275.41	280.13	282.03	282.69	285.26	288.17	286.90	288.95	292.79	275.30
Food and kindred products	250.17	272.34	288.40	284.53	285.77	289.64	295.71	295.71	295.81	300.00	301.68	298.19	304.44	310.71	303.02
Tobacco manufactures	253.46	294.51	328.10	329.56	320.29	331.06	348.56	359.21	364.00	350.43	348.13	338.05	347.65	339.85	325.03
Textile mill products	188.26	203.71	213.47	213.47	214.94	211.18	217.62	218.97	218.75	226.40	221.34	225.37	225.01	223.47	176.26
Apparel and other textile products	149.32	161.78	172.13	171.91	176.85	174.59	179.28	182.00	177.84	180.77	178.11	181.51	181.15	178.92	150.96
Paper and allied products	303.74	331.63	353.13	349.42	351.92	354.05	357.85	365.09	370.15	368.48	369.64	373.97	376.05	382.59	370.55
Printing and publishing	260.25	279.36	293.83	293.72	297.54	297.48	302.13	302.44	305.78	310.13	314.16	313.22	314.81	321.86	309.02
Chemicals and allied products	318.44	344.45	363.58	365.20	367.74	371.90	373.98	377.31	380.14	380.47	385.84	388.86	392.81	397.74	390.67
Petroleum and coal products	409.97	421.76	471.16	481.53	478.40	500.46	491.81	491.12	498.62	496.33	511.93	493.93	497.51	491.90	529.00
Rubber and miscellaneous plastics products	241.79	263.06	268.46	263.01	267.75	268.86	285.30	285.71	281.20	285.73	283.72	287.08	286.96	300.00	283.85
Leather and leather products	154.03	168.09	177.30	178.10	180.32	178.96	185.13	189.74	181.54	183.39	182.88	186.80	186.66	187.10	181.31
TRANSPORTATION AND PUBLIC UTILITIES	325.58	351.25	367.60	373.28	371.15	374.92	378.89	383.27	385.66	390.66	390.82	389.44	385.75	394.74	389.62
WHOLESALE AND RETAIL TRADE	164.96	176.46	183.86	185.13	186.62	189.43	188.48	190.25	193.85	194.83	194.40	191.40	192.36	193.20	190.96
WHOLESALE TRADE	247.93	267.96	281.82	282.65	285.67	287.60	289.14	289.89	294.49	296.83	296.84	299.54	301.47	302.25	298.96
RETAIL TRADE	138.62	147.38	152.81	153.92	154.96	156.60	156.38	158.90	161.92	162.53	162.17	157.64	158.54	160.06	157.22
FINANCE, INSURANCE, AND REAL ESTATE	190.77	209.24	222.04	226.04	225.32	225.06	225.26	225.26	227.80	231.23	229.68	232.40	235.66	233.57	237.18
SERVICES	175.27	190.71	201.83	204.40	205.05	205.38	206.73	206.89	209.22	210.89	210.92	213.53	216.78	216.79	217.32

20. Gross and spendable weekly earnings, in current and 1977 dollars, 1961 to date

[Averages for production or nonsupervisory workers on private nonagricultural payrolls]

Year and month	Private nonagricultural workers						Manufacturing workers					
	Gross average weekly earnings		Spendable average weekly earnings				Gross average weekly earnings		Spendable average weekly earnings			
			Worker with no dependents		Married worker with 3 dependents				Worker with no dependents		Married worker with 3 dependents	
	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars
1961	$82.60	$167.21	$67.08	$135.79	$74.48	$150.77	$92.34	$186.92	$74.60	$151.01	$82.18	$166.36
1962	85.91	172.16	69.56	139.40	76.99	154.29	96.56	193.51	77.86	156.03	85.53	171.40
1963	88.46	175.17	71.05	140.69	78.56	155.56	99.23	196.50	79.51	157.45	87.25	172.77
1964	91.33	178.38	75.04	146.56	82.57	161.27	102.97	201.11	84.40	164.84	92.18	180.04
1965	95.45	183.21	79.32	152.25	86.63	166.28	107.53	206.39	89.08	170.98	96.78	185.76
1966	98.82	184.37	81.29	151.66	88.66	165.41	112.19	209.31	91.45	170.62	99.33	185.32
1967	101.84	184.83	83.38	151.32	90.86	164.90	114.49	207.79	92.97	168.73	100.93	183.18
1968	107.73	187.68	86.71	151.06	95.28	165.99	122.51	312.43	97.70	170.21	106.75	185.98
1969	114.61	189.44	90.96	150.35	99.99	165.27	129.51	214.07	101.90	168.43	111.44	184.20
1970	119.83	186.94	96.21	150.09	104.90	163.65	133.33	208.00	106.32	165.87	115.58	180.31
1971	127.31	190.58	103.80	155.39	112.43	168.31	142.44	213.23	114.97	172.11	124.24	185.99
1972	136.90	198.41	112.19	162.59	121.68	176.35	154.71	224.22	125.34	181.65	135.57	196.48
1973	145.39	198.35	117.51	160.31	127.38	173.78	166.46	227.09	132.57	180.86	143.50	195.77
1974	154.76	190.12	124.37	152.79	134.61	165.37	176.80	217.20	140.19	172.22	151.56	186.19
1975	163.53	184.16	132.49	149.20	145.65	164.02	190.79	214.85	151.61	170.73	166.29	187.26
1976	175.45	186.85	143.30	152.61	155.87	166.00	209.32	222.92	167.83	178.73	181.32	193.10
1977	189.00	189.00	155.19	155.19	169.93	169.93	228.90	228.90	183.80	183.80	200.06	200.06
1978	203.70	189.31	165.39	153.71	180.71	167.95	249.27	231.66	197.40	183.46	214.87	199.69
1979	219.91	183.41	178.00	148.46	194.82	162.49	269.34	224.64	212.70	177.40	232.38	193.81
1980	235.10	172.74	188.82	138.74	206.06	151.65	288.62	212.06	225.79	165.90	247.01	181.49
1981: January	246.75	171.83	195.68	136.37	213.96	149.00	308.43	214.78	237.60	165.46	260.36	181.31
February	247.10	170.18	195.92	134.93	214.22	147.53	306.13	210.83	236.08	162.59	258.70	178.17
March	249.92	171.06	197.88	135.44	216.34	148.08	311.22	213.02	239.37	163.84	262.38	179.59
April	250.98	170.73	198.61	135.11	217.14	147.71	312.84	212.82	240.39	163.53	263.55	179.29
May	252.38	170.18	199.59	134.59	218.20	147.13	317.59	214.15	243.40	164.13	266.99	180.03
June	254.88	170.49	201.32	134.66	220.08	147.21	320.39	214.31	245.18	164.00	269.01	179.94
July	257.74	170.35	203.30	134.37	222.24	146.89	317.59	209.91	243.40	160.87	266.99	176.48
August	259.88	170.64	204.79	134.46	223.85	146.98	319.20	209.59	244.42	160.49	268.15	176.07
September	259.00	168.40	204.18	132.76	223.19	145.12	321.93	209.32	246.15	160.06	270.13	175.64
October	260.44	169.01	207.07	134.37	225.23	146.16	323.56	209.97	249.93	162.19	272.84	177.05
November	261.85	169.48	208.07	134.67	226.30	146.47	324.72	210.17	250.68	162.25	273.69	177.15
December[p]	261.89	169.07	208.09	134.34	226.33	146.11	329.18	212.51	253.57	163.70	276.97	178.81
1982: January[p]	253.76	(1)	(1)	(1)	(1)	(1)	308.38	(1)	(1)	(1)	(1)	(1)

[1] Not available.

NOTE: The earnings expressed in 1977 dollars have been adjusted for changes in price level as measured by the Bureau's Consumer Price Index for Urban Wage Earners and Clerical Workers. These series are described in "The Spendable Earnings Series: A Technical Note on its Calculation," **Employment and Earnings and Monthly Report on the Labor Force**, February 1969, pp. 6–13. See also "Spendable Earnings Formulas, 1979-81," **Employment and Earnings**, November 1981, pp. 7–8.

NOTICE: After release of final December 1981 data in the April issue, the Bureau of Labor Statistics will discontinue computation and publication of the spendable earnings data. The real earnings series published here will appear with the data in the preceding table.

UNEMPLOYMENT INSURANCE DATA

NATIONAL UNEMPLOYMENT INSURANCE DATA are compiled monthly by the Employment and Training Administration of the U.S. Department of Labor from monthly records of unemployment insurance activity prepared by State agencies. Railroad unemployment insurance data are prepared by the U.S. Railroad Retirement Board.

Definitions

Data for **all programs** represent an unduplicated count of insured unemployment under State programs, Unemployment Compensation for Ex-Servicemen, and Unemployment Compensation for Federal Employees, and the Railroad Insurance Act.

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

An **application** for benefits is filed by a railroad worker at the beginning of his first period of unemployment in a benefit year; no application is required for subsequent periods in the same year. **Number of payments** are payments made in 14-day registration periods. The **average amount of benefit payment** is an average for all compensable periods, not adjusted for recovery of overpayments or settlement of underpayments. However, **total benefits** paid have been adjusted.

21. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1990	1991											
	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.[p]
All programs:													
Insured unemployment	4,065	4,621	4,264	3,948	3,453	3,111	2,949	3,012	2,874	2,690	2,753	3,221	3,935
State unemployment insurance program:[1]													
Initial claims[2]	2,544	2,653	1,808	1,684	1,547	1,417	1,741	2,114	1,610	1,681	1,896	2,298	3,273
Insured unemployment (average weekly volume)	3,321	3,844	3,689	3,382	2,988	2,691	2,586	2,743	2,656	2,466	2,582	3,064	3,778
Rate of insured unemployment	3.8	4.4	4.2	3.9	3.4	3.1	3.0	3.1	3.0	2.9	3.0	3.6	4.3
Weeks of unemployment compensated	12,603	14,229	12,882	13,504	11,871	9,790	9,929	10,486	9,584	9,585	9,424	10,047	14,584
Average weekly benefit amount for total unemployment	$101.43	$102.34	$101.89	$105.63	$105.96	$105.49	$99.02	$103.47	$105.94	$107.39	$108.82	$110.44	$112.89
Total benefits paid	$1,242,957	$1,416,513	$1,313,507	$1,393,612	$1,226,815	$1,006,341	$1,012,764	$1,061,889	$1,004,864	$1,001,020	$987,757	$1,079,704	$1,582,546
Unemployment compensation for ex-servicemen:[3]													
Initial claims[1]	21	19	17	18	18	15	19	22	19	15	11	9	11
Insured unemployment (average weekly volume)	55	57	54	51	46	43	42	44	44	34	26	22	19
Weeks of unemployment compensated	261	257	221	234	214	183	192	203	180	153	118	91	93
Total benefits paid	$27,015	$26,646	$22,517	$24,068	$23,048	$19,985	$21,145	$22,785	$21,425	$17,144	$12,952	$10,008	$10,155
Unemployment compensation for Federal civilian employees:[4]													
Initial claims	18	22	13	12	12	11	13	15	17	18	20	16	17
Insured unemployment (average weekly volume)	37	41	40	36	31	27	25	25	25	29	32	36	39
Weeks of unemployment compensated	159	160	148	158	135	107	105	105	102	100	112	127	174
Total benefits paid	$14,184	$15,432	$14,573	$15,561	$13,701	$11,023	$10,705	$10,805	$9,543	$10,495	$11,719	$13,463	$18,881
Railroad unemployment insurance:													
Applications	11	13	5	5	6	6	26	41	13	15	21	13	....
Insured unemployment (average weekly volume)	39	53	50	44	41	35	30	28	29	34	40	44	....
Number of payments	83	118	104	115	94	79	86	32	63	74	86	83	....
Average amount of benefit payment	$212.27	$209.39	$214.56	$214.93	$201.12	$199.43	$201.06	$199.63	$202.53	$207.98	$197.26	$207.08	....
Total benefits paid	$18,046	$20,303	$22,049	$23,233	$19,239	$15,428	$16,206	$11,541	$7,071	15,046	15,984	$16,377	....
Employment service:[5]													
New applications and renewals	4,476	....	....	8,778	....	....	12,988	....	....	....	....	....	....
Nonfarm placements	871	....	....	1,585	....	....	2,446	....	....	....	....	....	....

[1] Initial claims and State insured unemployment include data under the program for Puerto Rican sugarcane workers.

[2] Includes interstate claims for the Virgin Islands. Excludes transition claims under State programs.

[3] Excludes data on claims and payments made jointly with other programs.

[4] Includes the Virgin Islands. Excludes data on claims and payments made jointly with State programs.

[5] Cumulative total for fiscal year (October 1-September 30). Data computed quarterly.

NOTE: Data for Puerto Rico included. Dashes indicate data not available.

PRICE DATA

PRICE DATA are gathered by the Bureau of Labor Statistics from retail and primary markets in the United States. Price indexes are given in relation to a base period (1967 = 100, unless otherwise noted).

Definitions

The **Consumer Price Index** is a monthly statistical measure of the average change in prices in a fixed market basket of goods and services. Effective with the January 1978 index, the Bureau of Labor Statistics began publishing CPI's for two groups of the population. One index, a new CPI for All Urban Consumers, covers 80 percent of the total noninstitutional population; and the other index, a revised CPI for Urban Wage Earners and Clerical Workers, covers about half the new index population. The All Urban Consumers index includes, in addition to wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctor's and dentist's fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items is kept essentially unchanged between major revisions so that only price changes will be measured. Prices are collected from over 18,000 tenants, 24,000 retail establishments, and 18,000 housing units for property taxes in 85 urban areas across the country. All taxes directly associated with the purchase and use of items are included in the index. Because the CPI's are based on the expenditures of two population groups in 1972-73, they may not accurately reflect the experience of individual families and single persons with different buying habits.

Though the CPI is often called the "Cost-of-Living Index," it measures only price change, which is just one of several important factors affecting living costs. Area indexes do not measure differences in the level of prices among cities. They only measure the average change in prices for each area since the base period.

Producer Price Indexes measure average changes in prices received in primary markets of the United States by producers of commodities in all stages of processing. The sample used for calculating these indexes contains about 2,800 commodities and about 10,000 quotations per month selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The universe includes all commodities produced or imported for sale in commercial transactions in primary markets in the United States.

Producer Price Indexes can be organized by stage of processing or by commodity. The stage of processing structure organizes products by degree of fabrication (that is, finished goods, intermediate or semifinished goods, and crude materials). The commodity structure organizes products by similarity of end-use or material composition.

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States, from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire. Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

In calculating Producer Price Indexes, price changes for the various commodities are averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1972. The detailed data are aggregated to obtain indexes for stage of processing groupings, commodity groupings, durability of product groupings, and a number of special composite groupings.

Price indexes for the output of selected SIC industries measure average price changes in commodities produced by particular industries, as defined in the *Standard Industrial Classification Manual 1972* (Washington, U.S. Office of Management and Budget, 1972). These indexes are derived from several price series, combined to match the economic activity of the specified industry and weighted by the value of shipments in the industry. They use data from comprehensive industrial censuses conducted by the U.S. Bureau of the Census and the U.S. Department of Agriculture.

Notes on the data

Beginning with the May 1978 issue of the *Review*, regional CPI's cross classified by population size, were introduced. These indexes will enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes will be published bimonthly. (See table 24.)

For further details about the new and the revised indexes and a comparison of various aspects of these indexes with the old unrevised CPI, see *Facts About the Revised Consumer Price Index*, a pamphlet in the Consumer Price Index Revision 1978 series. See also *The Consumer Price Index: Concepts and Content Over the Years*, Report 517, revised edition (Bureau of Labor Statistics, May 1978).

For interarea comparisons of living costs at three hypothetical standards of living, see the family budget data published in the *Handbook of Labor Statistics, 1977*, Bulletin 1966 (Bureau of Labor Statistics, 1977), tables 122-133. Additional data and analysis on price changes are provided in the *CPI Detailed Report* and *Producer Prices and Price Indexes*, both monthly publications of the Bureau.

As of January 1976, the Wholesale Price Index (as it was then called) incorporated a revised weighting structure reflecting 1972 values of shipments. From January 1967 through December 1975, 1963 values of shipments were used as weights.

For a discussion of the general method of computing consumer, producer, and industry price indexes, see *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976), chapters 13-15. See also John F. Early, "Improving the measurement of producer price change," *Monthly Labor Review*, April 1978, pp. 7-15. For industry prices, see also Bennett R. Moss, "Industry and Sector Price Indexes," *Monthly Labor Review*, August 1965, pp. 974-82.

22. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967–80

[1967=100]

Year	All items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	116.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.2	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	6.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	267.2	11.3	203.7	8.5	213.6	8.8

23. Consumer Price Index for All Urban Consumers and revised CPI for Urban Wage Earners and Clerical Workers, U.S. city average—general summary and groups, subgroups, and selected items

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.
All items	258.4	274.4	276.5	297.3	279.9	280.7	281.5	258.7	274.6	276.5	279.1	279.7	280.4	281.1
Food and beverages	259.3	268.9	270.1	270.7	270.3	269.9	270.5	260.5	269.4	270.6	271.0	270.7	270.3	270.8
Housing	276.9	297.0	299.7	303.7	303.5	304.2	305.2	277.1	297.0	299.6	303.6	303.3	303.8	304.7
Apparel and upkeep	183.9	184.7	187.4	190.7	191.5	191.3	190.5	182.9	185.5	187.9	190.5	190.6	190.5	189.4
Transportation	281.1	282.6	283.7	285.2	287.2	289.1	289.8	281.9	283.9	285.1	286.6	288.9	290.8	291.5
Medical care	275.8	295.6	299.3	301.7	304.8	308.2	310.2	277.6	295.4	298.6	300.9	304.0	307.1	309.1
Entertainment	212.0	221.1	222.3	224.0	225.5	226.8	227.3	210.1	218.7	219.9	221.5	223.4	224.3	224.4
Other goods and services	224.6	234.4	235.6	243.0	245.2	245.9	246.7	223.0	232.4	233.5	239.3	241.4	242.5	243.5
Commodities	243.8	255.0	256.2	257.7	257.9	258.0	258.4	244.3	255.7	256.9	258.2	258.4	258.5	258.8
Commodities less food and beverages	232.9	244.7	245.8	247.6	248.0	248.3	248.7	233.1	245.5	246.7	248.4	248.7	249.1	249.3
Nondurables less food and beverages	248.8	262.9	263.9	265.8	266.4	266.7	266.7	248.8	266.0	266.8	268.5	268.6	269.0	268.9
Durables	221.1	229.6	230.9	232.6	232.9	233.2	233.7	219.7	228.4	229.9	231.5	232.0	232.3	232.7
Services	284.7	308.8	312.2	317.3	318.6	320.6	321.8	285.5	309.6	312.7	317.7	318.2	321.1	322.4
Rent, residential	199.6	207.8	210.3	211.9	213.6	215.0	216.5	199.4	207.4	209.9	211.5	213.2	214.5	216.0
Household services less rent	338.4	374.8	379.9	387.4	387.2	390.2	390.4	341.9	379.4	384.2	392.2	391.8	393.6	394.8
Transportation services	255.8	275.0	275.7	277.7	281.0	283.2	284.2	254.7	273.8	274.3	276.3	279.9	282.3	283.6
Medical care services	297.9	319.2	323.4	326.1	329.7	333.7	335.7	300.0	318.5	322.1	324.7	328.3	332.0	334.0
Other services	228.1	237.6	239.1	245.6	247.8	248.7	249.5	228.4	236.8	238.3	243.6	246.6	247.2	248.0
Special indexes:														
All items less food	255.5	272.7	274.9	278.2	279.0	280.1	280.8	255.7	273.1	275.2	278.2	279.1	280.1	280.7
All items less mortgage interest costs	245.9	259.3	260.9	262.9	263.0	264.2	264.9	246.7	260.0	261.5	263.3	264.0	264.6	265.2
Commodities less food	231.0	242.6	243.8	245.5	245.9	246.2	246.5	231.2	243.5	244.7	246.3	246.6	247.0	247.2
Nondurables less food	242.0	257.5	258.4	260.3	260.7	261.1	261.1	243.9	260.4	261.2	262.9	263.0	263.4	263.3
Nondurables less food and apparel	274.7	297.8	298.0	299.1	299.5	300.1	300.7	276.6	299.8	300.0	301.3	301.5	302.0	302.5
Nondurables	254.1	267.1	268.1	269.5	269.5	269.5	269.8	255.6	268.7	269.7	270.7	270.7	270.7	270.9
Services less rent	300.7	328.1	331.7	337.5	338.7	340.8	342.0	302.0	329.3	332.6	338.3	339.7	341.6	342.9
Services less medical care	281.2	305.4	308.8	314.1	315.1	316.9	318.1	281.9	306.3	309.4	314.8	315.8	317.5	318.7
Domestically produced farm foods	251.1	259.5	260.6	260.8	259.5	258.3	259.1	251.1	259.0	259.9	259.9	258.6	257.8	258.2
Selected beef cuts	276.2	275.3	276.7	277.9	275.5	271.9	270.7	278.4	277.9	277.2	279.7	278.5	273.2	271.9
Energy	370.4	415.7	416.1	417.1	414.9	414.1	414.6	373.7	418.9	418.9	420.1	417.9	417.3	417.6
All items less energy	249.7	263.5	265.6	268.6	269.4	270.4	271.1	249.3	262.7	264.7	267.5	268.3	269.2	269.9
All items less food and energy	244.5	258.0	261.3	264.8	265.9	267.2	267.9	243.6	258.1	260.3	263.6	264.8	265.9	266.6
Commodities less food and energy	211.7	219.4	220.9	222.9	223.4	223.8	224.2	210.6	218.7	220.2	222.1	222.6	223.0	223.3
Energy commodities	404.9	451.3	449.9	449.3	448.2	448.2	448.0	405.9	451.9	450.6	450.0	448.9	449.0	448.7
Services less energy	282.4	304.9	308.3	313.6	315.3	317.7	318.9	283.4	305.7	308.9	314.0	316.0	318.2	319.5
Purchasing power of the consumer dollar, 1967 = $1	$0.387	$0.364	$0.362	$0.358	$0.357	$0.356	$0.355	$0.387	$0.364	$0.362	$0.358	$0.358	$0.357	$0.356

23. Continued—Consumer Price Index—U.S. city average

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.
FOOD AND BEVERAGES	259.3	269.9	270.1	270.7	270.3	269.9	270.5	260.5	269.4	270.6	271.0	270.7	270.3	270.8
Food	266.4	278.2	277.4	278.0	277.6	277.1	277.8	267.6	276.6	277.7	278.1	277.8	277.4	277.9
Food at home	263.9	271.6	272.8	273.2	272.1	271.0	271.7	263.9	271.1	272.2	272.3	271.3	270.4	270.8
Cereals and bakery products	258.5	272.4	272.6	274.3	275.0	276.3	277.7	258.5	271.5	272.0	273.2	274.0	275.5	276.6
Cereals and cereal products (12/77 = 100)	140.8	149.0	149.5	150.1	150.0	149.9	151.5	142.3	150.6	151.3	151.2	151.5	152.1	152.5
Flour and prepared flour mixes (12/77 = 100)	133.5	139.5	139.6	139.5	139.3	138.4	137.8	134.4	141.9	142.0	141.1	140.9	140.2	138.4
Cereal (12/77 = 100)	143.8	153.4	154.6	155.7	158.1	157.4	160.2	145.0	154.8	156.4	157.2	157.9	158.9	162.1
Rice, pasta, and cornmeal (12/77 = 100)	143.1	151.2	151.4	151.6	151.1	149.6	151.7	145.8	153.2	153.1	152.6	152.7	153.9	152.9
Bakery products (12/77 = 100)	135.4	142.5	142.4	143.5	144.0	144.9	145.4	135.7	141.4	141.5	142.4	142.8	143.7	144.3
White bread	226.3	236.4	235.6	238.2	238.4	241.3	241.5	229.6	233.9	233.0	235.9	236.5	237.6	237.4
Other breads (12/77 = 100)	134.1	140.6	140.8	141.5	141.6	142.8	143.4	137.9	142.9	143.4	143.4	143.6	144.9	145.3
Fresh biscuits, rolls, and muffins (12/77 = 100)	135.4	142.4	143.4	143.3	144.8	145.2	145.9	135.1	141.7	141.0	140.1	141.7	141.9	141.9
Fresh cakes and cupcakes (12/77 = 100)	135.3	142.7	142.7	144.4	143.9	145.0	144.9	134.2	141.4	141.2	142.3	141.7	143.2	143.7
Cookies (12/77 = 100)	134.9	143.0	143.1	143.9	145.7	146.3	147.6	136.1	142.6	144.1	144.6	146.4	146.8	148.4
Crackers, bread, and cracker products (12/77 = 100)	126.9	131.6	130.6	132.0	133.2	133.1	134.2	128.5	131.2	130.9	132.2	134.0	133.4	135.6
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	135.9	143.9	143.9	144.3	144.4	144.8	145.4	136.4	142.8	143.4	144.8	144.9	145.8	147.8
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	137.5	147.2	147.1	148.0	148.9	149.2	149.3	134.0	140.9	141.5	142.1	142.8	143.1	143.0
Meats, poultry, fish, and eggs	255.7	254.1	255.8	257.7	256.4	254.2	253.7	255.0	254.1	255.5	257.5	256.0	254.0	253.1
Meats, poultry, and fish	258.9	260.7	262.2	263.4	262.2	259.2	258.4	259.2	260.5	261.8	263.2	261.7	258.8	257.7
Meats	260.0	259.6	262.0	263.4	262.5	258.6	258.7	259.3	259.7	261.3	263.3	262.1	259.3	257.9
Beef and veal	275.3	274.5	275.9	277.1	274.9	271.5	270.5	276.8	276.5	275.9	278.3	275.3	272.2	270.9
Ground beef other than canned	276.1	264.5	267.4	270.3	267.4	266.1	264.5	281.0	267.9	269.4	273.8	268.6	268.0	265.8
Chuck roast	288.5	283.5	285.3	289.4	287.8	282.6	282.2	296.0	295.5	296.5	289.9	287.2	292.6	291.5
Round roast	245.7	245.6	247.2	244.1	245.1	245.0	242.6	248.6	249.8	247.3	249.1	250.1	248.2	245.9
Round steak	260.2	258.9	256.0	255.9	259.0	258.7	254.6	257.6	257.0	251.5	252.5	254.9	254.8	252.2
Sirloin steak	267.6	264.3	282.2	281.9	273.3	262.0	260.1	269.7	285.6	279.2	281.9	275.1	260.7	260.7
Other beef and veal (12/77 = 100)	160.4	163.5	164.3	164.9	163.4	161.1	161.0	159.2	162.4	162.6	162.8	161.3	159.2	159.1
Pork	229.1	231.5	235.3	238.1	238.6	235.6	234.3	228.2	232.6	236.5	239.4	239.3	235.9	233.8
Bacon	231.9	228.1	231.1	237.1	240.1	238.1	237.2	234.1	230.5	234.5	241.1	245.1	242.9	240.5
Chops	208.7	221.8	224.1	225.1	223.1	217.0	212.4	206.8	222.4	224.4	224.7	221.3	216.2	211.0
Ham other than canned (12/77 = 100)	107.8	102.0	105.3	106.8	109.4	108.9	109.1	105.7	100.4	103.7	105.6	107.5	108.6	108.3
Sausage	285.6	289.7	297.2	300.7	298.7	298.1	299.1	287.2	293.4	298.6	302.3	302.1	299.2	300.0
Canned ham	238.4	233.0	234.9	238.5	241.9	243.1	244.3	242.6	234.4	238.0	242.9	244.7	247.0	247.7
Other pork (12/77 = 100)	127.6	133.6	135.0	135.4	134.1	131.1	130.0	127.4	134.5	136.3	136.7	134.5	130.9	129.2
Other meats	262.8	258.4	261.4	260.7	261.6	260.5	260.6	258.4	255.6	259.6	258.7	260.5	259.9	258.7
Frankfurters	264.0	251.8	250.8	256.4	261.2	259.9	261.0	263.4	251.9	260.4	259.1	262.4	260.9	260.0
Bologna, liverwurst, and salami (12/77 = 100)	149.1	145.9	147.0	147.5	147.6	146.7	146.4	145.2	144.6	145.7	144.8	146.9	145.9	146.3
Other lunchmeats (12/77 = 100)	129.9	129.1	130.6	131.8	131.8	132.1	132.6	127.7	128.5	128.8	129.5	130.2	130.6	130.6
Lamb and organ meats (12/77 = 100)	146.6	147.6	146.8	144.4	143.4	141.7	140.7	148.5	148.9	148.3	146.0	145.0	144.6	143.9
Poultry	202.7	204.8	202.0	199.7	196.6	192.3	191.7	201.1	203.1	201.2	198.1	194.7	190.6	189.5
Fresh whole chicken	206.9	206.9	201.4	197.3	194.0	190.9	190.1	202.2	202.9	199.6	194.0	189.9	188.5	187.8
Fresh and frozen chicken parts (12/77 = 100)	131.6	133.0	131.8	130.5	129.2	127.3	128.1	132.3	133.3	131.6	130.1	129.7	128.5	128.3
Other poultry (12/77 = 100)	126.6	130.0	129.7	129.9	127.2	122.2	120.7	126.2	129.3	129.9	128.6	126.1	121.5	119.8
Fish and seafood	346.9	356.9	356.8	362.6	360.8	358.9	358.6	343.1	353.5	356.4	356.6	358.2	356.6	358.6
Canned fish and seafood (12/77 = 100)	136.4	140.6	139.8	140.9	140.5	141.5	140.7	133.7	138.0	138.5	138.4	140.3	141.0	140.2
Fresh and frozen fish and seafood (12/77 = 100)	129.6	133.1	133.6	136.5	135.6	133.9	134.7	128.8	131.9	134.1	134.9	134.0	132.7	134.4
Eggs	208.6	174.2	177.6	188.8	185.9	194.7	198.0	206.6	175.0	177.7	180.5	187.2	196.7	198.8
Dairy products	238.0	244.2	243.8	244.3	244.6	245.0	245.5	238.8	243.9	243.9	244.1	244.2	244.7	244.9
Fresh milk and cream (12/77 = 100)	131.9	134.9	134.5	134.7	134.7	134.9	135.2	132.2	134.4	134.3	134.3	134.4	134.6	134.6
Fresh whole milk	216.2	220.7	220.2	220.0	220.2	220.8	221.2	218.5	219.9	219.8	219.4	219.5	220.1	220.2
Other fresh milk and cream (12/77 = 100)	131.4	134.9	134.2	135.4	135.2	134.9	135.3	131.9	134.5	134.4	135.3	135.2	134.9	134.9
Processed dairy products (12/77 = 100)	138.2	142.5	142.5	143.0	143.3	143.5	143.9	138.2	143.1	143.3	143.4	143.6	144.0	144.2
Butter	241.0	245.8	246.2	247.1	247.2	248.0	248.7	244.1	247.7	248.5	249.9	249.7	250.2	251.3
Cheese (12/77 = 100)	137.0	140.7	140.8	140.8	140.9	141.1	141.0	137.4	141.3	141.5	140.9	140.7	141.1	141.3
Ice cream and related products (12/77 = 100)	141.4	147.6	147.9	148.7	149.9	149.3	150.3	143.2	148.0	147.9	149.1	149.9	149.4	149.4
Other dairy products (12/77 = 100)	132.4	136.6	135.6	137.3	137.0	138.7	139.7	133.1	137.2	137.2	137.6	138.1	140.2	140.5
Fruits and vegetables	255.6	284.4	286.1	281.6	275.2	272.0	276.4	253.9	281.7	282.5	276.3	270.8	268.1	272.6
Fresh fruits and vegetables	262.0	294.0	295.8	286.9	273.5	267.8	274.9	260.2	290.2	290.4	278.2	267.2	261.9	269.4
Fresh fruits	251.8	292.1	306.9	306.4	291.4	276.1	269.6	248.6	285.5	298.4	293.7	279.5	266.0	260.5
Apples	218.8	251.9	282.1	262.9	237.0	248.7	261.2	216.9	253.1	264.6	261.8	236.5	249.1	261.2
Bananas	244.1	240.6	245.2	250.7	254.9	249.4	254.9	238.2	233.8	239.9	251.3	253.3	248.3	252.8
Oranges	299.3	327.8	353.7	348.2	328.5	314.0	290.6	287.0	307.0	325.1	314.6	290.9	286.0	252.8
Other fresh fruits (12/77 = 100)	128.6	160.4	163.5	168.4	160.9	144.7	141.0	129.2	158.9	160.5	161.5	154.7	139.7	136.7
Fresh vegetables	271.5	295.9	285.5	288.6	258.8	260.1	279.8	270.9	294.4	283.2	284.4	258.1	258.2	277.6
Potatoes	297.7	414.9	375.1	329.1	290.4	286.3	298.8	298.0	404.2	362.8	316.8	287.7	281.5	280.0
Lettuce	255.3	261.3	290.6	293.5	258.3	257.1	343.1	252.8	259.2	290.0	292.9	257.2	247.4	342.7
Tomatoes	206.1	194.0	209.9	193.9	207.3	208.9	204.6	204.5	195.5	211.0	191.3	206.4	209.7	207.8
Other fresh vegetables (12/77 = 100)	156.3	154.5	143.6	137.9	139.6	145.0	150.4	156.2	155.8	144.1	136.6	140.0	145.8	148.1
Processed fruits and vegetables	250.9	276.4	277.9	278.3	279.4	279.2	280.6	249.0	274.6	276.2	276.7	277.2	277.3	278.4
Processed fruits (12/77 = 100)	129.0	143.1	143.4	143.7	144.9	145.1	145.0	129.1	142.8	143.4	143.7	144.2	144.6	144.5
Frozen fruit and fruit juices (12/77 = 100)	120.6	144.0	143.5	143.6	144.7	144.9	142.3	119.9	142.9	142.8	142.8	143.4	144.1	141.2
Fruit juices other than frozen (12/77 = 100)	131.6	146.8	147.4	147.5	148.4	148.6	149.5	132.2	146.1	147.1	147.8	147.6	147.4	148.3
Canned and dried fruits (12/77 = 100)	133.1	138.4	139.1	139.8	141.2	141.6	142.6	133.3	139.1	139.8	140.1	141.1	141.8	143.0
Processed vegetables (12/77 = 100)	123.1	134.6	135.7	135.9	135.9	135.4	136.9	121.5	133.6	134.6	134.8	134.9	134.7	135.7
Frozen vegetables (12/77 = 100)	122.1	133.2	134.9	135.7	136.9	137.4	139.1	121.2	134.1	135.7	136.6	137.5	139.2	140.2

23. Continued—Consumer Price Index—U.S. city average

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.
FOOD AND BEVERAGES — Continued														
Food — Continued														
Food at home — Continued														
Fruits and vegetables — Continued														
Cut corn and canned beans except lima (12/77=100)	124.5	136.0	137.4	136.8	137.7	136.3	136.9	122.8	134.8	135.4	135.1	135.5	136.0	136.5
Other canned and dried vegetables (12/77=100)	122.9	134.6	135.4	135.6	134.6	133.1	134.8	121.0	132.8	133.7	133.8	133.3	131.8	133.2
Other foods at home	317.1	323.3	325.1	325.7	326.4	326.0	325.6	317.8	324.2	326.1	326.2	327.1	327.0	326.4
Sugar and sweets	366.3	360.0	361.3	361.4	359.9	359.1	359.3	368.9	362.8	362.7	363.1	360.2	359.0	359.3
Candy and chewing gum (12/77=100)	136.9	145.9	146.1	146.8	148.8	149.3	149.9	137.4	147.3	147.4	147.6	148.7	148.9	149.8
Sugar and artificial sweeteners (12/77=100)	230.3	164.6	164.3	163.0	157.1	155.2	153.4	231.4	166.6	165.3	164.9	158.4	157.0	154.6
Other sweets (12/77=100)	133.7	142.9	145.0	145.3	145.2	144.9	146.1	133.1	141.8	142.9	143.8	144.0	143.1	144.2
Fats and oils (12/77=100)	251.9	269.0	269.2	268.5	268.5	262.2	261.1	252.6	269.0	268.7	267.4	268.1	263.1	261.0
Margarine	253.6	255.9	258.2	256.7	256.6	255.2	255.7	254.6	256.6	255.7	254.5	255.9	254.9	254.9
Nondairy substitutes and peanut butter (12/77=100)	139.6	181.0	179.8	178.5	178.5	163.0	160.1	139.9	179.4	178.8	177.2	175.2	163.0	158.5
Other fats, oils, and salad dressings (12/77=100)	129.1	129.4	129.4	129.6	130.5	129.8	129.7	129.1	129.4	129.6	129.2	130.3	130.4	130.1
Nonalcoholic beverages	405.2	410.3	413.1	413.7	414.8	413.4	412.5	407.4	411.3	415.2	414.7	416.0	415.2	414.2
Cola drinks, excluding diet cola	285.2	294.7	298.2	298.9	301.1	298.8	298.1	284.0	290.8	296.6	295.6	297.7	296.1	295.7
Carbonated drinks, including diet cola (12/77=100)	134.8	138.6	141.5	142.4	142.3	141.4	139.3	133.5	138.3	138.9	140.3	138.6	139.3	137.2
Roasted coffee	389.7	351.4	346.0	345.1	343.1	341.0	344.4	386.2	346.6	342.8	340.5	338.9	337.3	340.1
Freeze dried and instant coffee	356.5	334.3	333.3	330.8	329.9	330.8	332.0	358.1	334.9	333.8	331.4	332.7	333.2	331.6
Other noncarbonated drinks (12/77=100)	127.5	134.2	134.9	134.9	135.6	136.4	137.0	127.7	134.0	135.0	134.6	135.5	136.4	137.1
Other prepared foods	242.4	256.3	257.9	259.0	260.5	262.7	262.8	242.8	257.9	259.7	260.5	262.3	264.5	264.4
Canned and packaged soup (12/77=100)	127.2	133.2	133.6	134.9	133.1	133.4	133.7	129.0	134.5	134.8	136.4	135.6	136.1	135.7
Frozen prepared foods (12/77=100)	137.6	143.7	143.5	144.8	144.1	146.5	145.9	134.8	142.3	142.5	142.7	142.8	145.1	145.3
Snacks (12/77=100)	138.6	147.5	148.8	149.6	152.0	152.5	152.2	140.1	150.0	151.5	152.6	155.3	155.6	154.2
Seasonings, olives, pickles, and relish (12/77=100)	134.2	142.0	144.4	144.4	146.2	148.9	148.8	133.4	141.4	142.8	142.7	144.8	147.4	147.7
Other condiments (12/77=100)	133.5	142.3	142.9	143.3	143.5	145.0	144.6	136.3	144.4	145.6	145.3	145.5	148.5	148.2
Miscellaneous prepared foods (12/77=100)	133.8	140.7	142.0	142.3	144.5	144.8	145.8	133.5	141.0	142.1	142.8	143.9	145.2	145.8
Other canned and packaged prepared foods (12/77=100)	130.3	139.0	139.5	139.9	140.5	141.8	142.5	130.2	139.8	140.8	141.1	141.9	143.0	143.9
Food away from home	277.7	282.4	283.7	294.8	296.2	297.2	297.7	281.8	295.2	296.4	297.6	299.0	299.6	300.7
Lunch (12/77=100)	135.7	142.6	143.2	143.6	143.9	144.4	144.6	137.3	143.6	144.2	144.6	145.3	145.6	146.3
Dinner (12/77=100)	134.4	141.3	141.9	142.4	143.2	143.6	144.0	136.7	143.0	143.7	144.3	144.8	145.1	145.6
Other meals and snacks (12/77=100)	133.7	141.6	142.1	143.1	143.9	144.6	144.7	135.6	142.7	143.1	143.9	144.8	145.1	145.4
Alcoholic beverages	191.6	200.5	201.4	202.5	201.4	202.3	202.7	193.7	202.8	203.8	204.6	204.3	204.6	204.9
Alcoholic beverages at home (12/77=100)	124.9	130.1	130.6	131.4	130.5	131.2	131.4	126.5	131.9	132.4	132.8	132.5	132.8	132.8
Beer and ale	192.9	201.8	202.6	203.6	202.5	204.0	204.1	192.9	202.4	203.2	203.5	203.1	203.6	203.5
Whiskey	138.9	143.7	144.7	145.4	144.0	144.8	145.0	140.2	144.7	145.6	146.2	146.4	146.2	145.9
Wine	217.6	227.5	227.4	229.7	228.2	227.5	230.0	227.2	236.9	235.5	237.6	238.1	237.4	238.0
Other alcoholic beverages (12/77=100)	112.7	118.3	117.0	117.5	118.3	117.3	117.3	112.1	155.9	117.0	117.1	115.7	118.6	117.4
Alcoholic beverages away from home (12/77=100)	125.8	134.1	134.7	135.4	135.5	135.7	135.8	126.2	134.0	135.4	136.2	136.4	136.6	137.3
HOUSING	276.9	297.0	299.7	303.7	303.5	304.2	305.2	277.1	297.0	299.6	303.6	303.3	303.8	304.7
Shelter	298.5	318.5	322.0	326.9	326.6	327.2	328.0	300.4	320.2	323.6	328.6	328.1	328.5	329.3
Rent, residential	199.6	207.8	210.3	211.9	213.6	215.0	216.5	199.4	207.4	209.9	211.5	213.2	214.5	216.0
Other rental costs	267.7	293.6	298.5	308.1	308.7	305.3	306.3	267.3	293.3	299.0	308.0	308.4	306.0	305.3
Lodging while out of town	282.6	318.3	325.7	326.3	324.2	318.6	319.9	281.0	316.3	324.4	325.3	323.3	317.9	318.0
Tenants' insurance (12/77=100)	126.9	133.3	133.9	135.9	140.0	140.4	140.7	127.2	133.7	134.5	136.4	140.1	140.3	140.6
Homeownership	334.2	358.0	361.8	367.8	366.7	367.2	367.8	337.5	361.2	364.8	371.0	369.7	369.8	370.4
Home purchase	267.2	271.4	272.6	274.5	272.5	270.2	270.5	268.0	271.2	272.3	273.8	271.4	268.6	268.7
Financing, taxes, and insurance	429.4	480.0	488.3	501.8	501.8	505.6	506.3	436.0	486.9	485.3	509.0	508.3	511.9	512.9
Property insurance	365.8	387.1	389.0	389.7	392.5	393.3	394.1	369.0	388.3	390.5	391.9	394.7	395.5	396.5
Property taxes	194.5	201.4	205.2	206.2	207.4	208.0	210.7	196.4	203.2	207.1	208.0	209.2	210.0	212.5
Contracted mortgage interest cost	565.5	630.1	641.3	662.0	661.3	669.8	666.6	558.7	632.6	643.8	664.4	662.5	667.7	668.1
Mortgage interest rates	205.1	229.4	232.4	238.2	238.5	244.1	243.9	205.5	230.3	233.3	239.2	240.5	245.3	245.3
Maintenance and repairs	296.8	319.3	320.5	321.6	320.8	322.8	324.1	294.2	316.2	315.8	318.1	319.2	319.8	321.0
Maintenance and repair services	321.5	349.0	350.6	352.5	351.1	353.8	355.4	320.3	350.5	349.5	352.5	354.2	354.9	356.5
Maintenance and repair commodities	239.1	249.3	249.5	248.7	249.3	249.7	250.3	236.2	242.4	243.1	244.1	244.0	244.5	244.9
Paint and wallpaper, supplies, tools, and equipment (12/77=100)	139.2	146.7	146.9	146.2	146.7	146.5	147.3	134.9	138.2	139.2	139.1	139.9	140.0	140.5
Lumber, awnings, glass, and masonry (12/77=100)	123.2	125.0	124.2	125.0	124.4	124.1	124.3	122.9	123.0	122.0	123.2	122.3	121.8	121.6
Plumbing, electrical, heating, and cooling supplies (12/77=100)	124.8	132.7	132.0	131.2	132.4	133.1	131.5	124.9	130.1	130.6	131.7	132.1	132.4	131.6
Miscellaneous supplies and equipment (12/77=100)	124.2	129.2	130.5	131.2	131.7	131.6	132.5	126.3	132.5	133.3	134.3	133.7	134.2	134.7
Fuel and other utilities	289.9	325.1	327.8	331.1	330.1	329.8	331.8	290.7	326.4	328.7	332.3	330.9	330.9	332.7
Fuels	364.7	417.2	419.5	422.4	419.0	417.6	420.0	364.5	417.6	418.7	422.2	418.4	417.4	419.6
Fuel oil, coal, and bottled gas	585.3	677.9	674.6	673.4	672.7	678.1	692.5	587.0	681.1	677.9	677.0	675.9	679.3	685.5
Fuel oil	610.0	711.0	707.3	705.7	704.3	708.8	713.5	610.9	713.8	710.2	709.0	707.1	706.6	716.0
Other fuels (6/78 = 100)	148.4	164.0	163.6	163.8	165.0	167.7	169.4	150.1	165.4	165.1	165.3	166.4	169.1	170.8
Gas (piped) and electricity	313.9	357.6	360.8	364.5	360.6	358.3	359.9	313.4	356.7	358.4	363.6	359.3	357.5	358.8
Electricity	262.3	308.2	311.9	308.8	303.0	298.6	300.3	262.1	308.2	312.1	308.9	302.7	297.7	298.3
Utility (piped) gas	381.5	418.6	416.2	431.7	434.5	437.0	438.2	379.7	415.8	411.2	428.5	430.8	436.0	436.4

23. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.
HOUSING—Continued														
Fuel and other utilities—Continued														
Other utilities and public services	170.6	180.8	183.7	187.4	189.4	190.7	191.9	170.7	181.3	184.3	187.8	189.8	191.0	192.2
Telephone services	140.3	147.2	149.2	152.5	154.3	155.6	156.8	140.3	147.5	149.5	152.7	154.5	155.8	156.9
Local charges (12/77 = 100)	110.5	116.7	117.3	120.5	121.5	123.5	124.4	110.6	116.9	117.6	120.7	121.8	123.8	124.6
Interstate toll calls (12/77 = 100)	101.8	109.1	113.4	114.9	116.6	116.7	116.7	101.8	109.6	113.8	115.1	116.6	116.8	116.8
Intrastate toll calls (12/77 = 100)	100.9	101.5	101.8	103.9	105.5	105.3	107.1	100.7	101.3	101.6	103.7	105.3	106.0	106.9
Water and sewerage maintenance	267.8	294.0	299.2	304.1	305.2	306.1	307.4	268.7	295.8	301.4	306.0	307.3	307.9	309.4
Household furnishings and operations	211.6	222.4	222.9	224.5	225.6	227.2	227.7	209.0	219.1	219.8	221.2	222.2	223.6	224.2
Housefurnishings	178.3	186.0	186.2	187.9	188.7	189.4	189.2	176.9	184.1	184.5	185.7	186.6	187.3	187.1
Textile housefurnishings	193.2	202.9	203.4	207.7	210.4	211.7	211.2	196.6	206.2	207.3	213.0	214.1	214.7	213.9
Household linens (12/77 = 100)	117.2	123.3	124.6	127.7	130.1	130.8	128.8	122.7	126.0	126.8	129.7	132.0	131.9	129.9
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	123.8	129.8	129.1	131.4	132.2	133.1	134.7	122.4	131.5	132.1	136.3	135.2	136.1	137.4
Furniture and bedding	197.0	206.0	205.4	207.7	207.9	209.2	209.7	194.4	202.3	201.4	202.7	203.8	205.3	206.0
Bedroom furniture (12/77 = 100)	129.2	135.0	135.9	137.6	137.4	139.6	138.6	125.7	130.7	132.2	132.9	132.3	135.2	135.2
Sofas (12/77 = 100)	115.3	117.6	116.0	118.6	119.3	118.7	119.4	114.7	116.2	115.0	117.4	119.0	118.8	119.5
Living room chairs and tables (12/77 = 100)	113.1	117.9	116.7	116.8	117.0	118.8	119.0	115.2	119.5	116.9	117.2	118.5	118.9	119.1
Other furniture (12/77 = 100)	127.8	136.2	135.9	137.3	137.3	137.1	138.4	124.7	132.9	132.2	132.3	133.0	133.1	134.0
Appliances including TV and sound equipment	142.4	147.1	147.3	147.7	147.8	148.2	147.9	142.0	146.3	146.6	146.7	147.2	147.7	147.5
Television and sound equipment (12/77 = 100)	107.2	108.8	108.6	108.7	109.1	109.0	108.9	106.1	107.7	107.8	107.8	108.1	108.3	108.0
Television	105.2	105.6	105.0	104.6	105.0	104.8	104.7	103.7	104.5	104.2	103.6	103.8	103.6	103.3
Sound equipment (12/77 = 100)	110.1	112.7	112.8	113.4	113.8	113.9	113.7	109.2	111.4	111.9	112.4	112.8	113.4	112.9
Household appliances	165.9	174.2	174.9	175.7	175.3	176.1	175.9	166.3	173.6	174.1	174.4	175.1	175.9	176.0
Refrigerators and home freezers	168.5	174.2	175.8	177.5	177.0	178.7	179.9	170.9	178.1	178.9	180.6	181.6	182.7	185.3
Laundry equipment (12/77 = 100)	123.4	128.1	129.2	129.7	130.5	130.7	130.5	121.4	128.3	129.1	128.8	129.8	130.8	130.3
Other household appliances (12/77 = 100)	113.1	119.6	119.5	119.7	118.9	119.4	118.7	112.8	117.1	117.0	117.1	117.1	117.4	116.8
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	112.0	119.2	118.6	118.8	118.2	118.7	117.9	113.9	117.1	116.4	116.0	115.9	116.8	116.2
Office machines, small electric appliances, and air conditioners (12/77 = 100)	114.3	120.1	120.6	120.8	119.8	120.1	119.6	111.5	117.1	117.7	118.3	118.4	118.1	117.3
Other household equipment (12/77 = 100)	124.8	131.2	131.7	133.1	134.2	134.4	134.0	123.1	129.8	131.0	131.6	132.4	132.4	131.9
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	124.6	132.4	133.4	134.8	135.4	136.1	135.9	118.4	127.1	129.3	129.6	129.6	129.7	128.3
Clocks, lamps, and decor items (12/77 = 100)	121.7	125.0	125.8	128.2	128.7	129.5	128.4	118.8	122.9	122.5	123.8	124.5	125.2	124.7
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	130.8	139.5	138.9	140.4	141.1	141.2	141.0	127.6	136.4	137.0	137.8	137.9	137.5	137.1
Lawn equipment, power tools, and other hardware (12/77 = 100)	118.7	122.7	124.0	124.5	127.2	126.9	126.3	122.3	126.7	128.8	129.2	131.2	131.6	131.5
Housekeeping supplies	257.7	271.5	272.0	273.3	274.3	275.4	277.4	256.0	267.9	268.6	270.4	271.2	271.9	274.1
Soaps and detergents	254.0	266.5	267.0	268.9	269.3	269.7	271.6	252.3	263.1	263.6	265.6	265.3	265.2	268.0
Other laundry and cleaning products (12/77 = 100)	127.6	134.8	134.8	135.7	136.7	137.3	138.8	127.6	133.6	134.7	135.8	136.6	137.0	137.5
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	136.1	138.8	138.4	139.9	141.8	143.6	144.5	137.6	139.0	138.7	140.4	142.4	143.9	144.4
Stationery, stationery supplies, and gift wrap (12/77 = 100)	119.5	126.6	126.6	127.2	128.1	128.5	128.8	120.0	127.9	128.2	128.7	130.8	131.3	131.6
Miscellaneous household products (12/77 = 100)	132.5	140.5	141.7	142.8	142.8	143.0	145.4	129.5	136.6	136.9	138.1	137.8	137.4	140.4
Lawn and garden supplies (12/77 = 100)	128.4	138.8	139.2	137.8	136.6	136.8	136.7	122.5	131.7	131.8	131.1	129.0	129.6	129.4
Housekeeping services	277.1	295.3	296.9	298.3	300.5	305.2	306.9	273.8	293.4	295.1	296.9	298.9	303.9	306.4
Postage	257.3	308.0	308.0	308.0	308.0	337.5	337.5	257.3	308.1	308.1	308.1	308.1	337.5	337.5
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	134.4	143.1	143.9	144.7	145.5	147.0	147.8	131.8	142.8	143.8	144.9	145.2	146.7	147.6
Appliance and furniture repair (12/77 = 100)	121.4	127.8	128.5	129.0	131.3	132.2	133.0	120.6	126.4	127.2	128.3	130.5	131.2	131.6
APPAREL AND UPKEEP	183.9	184.7	187.4	190.7	191.5	191.3	190.5	182.9	185.5	187.9	190.5	190.6	190.5	189.4
Apparel commodities	176.0	175.1	178.0	181.4	182.1	181.8	180.7	175.3	176.6	179.0	181.6	181.5	181.5	180.1
Apparel commodities less footwear	172.5	171.2	174.3	178.0	178.4	177.9	176.6	171.6	172.8	175.2	178.1	177.7	177.3	175.6
Men's and boys'	174.3	175.6	177.6	181.1	183.6	183.6	181.6	174.4	176.9	178.4	181.4	182.9	183.2	181.7
Men's (12/77 = 100)	109.8	110.3	111.7	114.3	115.9	115.9	114.5	109.9	111.6	112.8	115.0	115.8	115.9	115.0
Suits, sport coats, and jackets (12/77 = 100)	103.5	102.5	105.6	108.8	108.8	109.9	106.4	98.2	97.4	99.7	102.1	102.0	102.0	99.5
Coats and jackets (12/77 = 100)	99.7	96.7	97.7	101.0	102.4	102.8	101.4	101.9	100.8	102.4	106.1	104.9	105.1	104.1
Furnishings and special clothing (12/77 = 100)	123.9	129.6	129.5	132.7	134.3	133.6	134.2	120.0	124.8	125.3	128.5	130.0	129.8	130.6
Shirts (12/77 = 100)	119.7	115.5	117.9	120.6	123.0	123.0	122.7	120.7	118.8	122.1	123.9	125.5	125.4	125.3
Dungarees, jeans, and trousers (12/77 = 100)	103.4	106.5	106.6	107.8	109.2	109.8	108.5	108.1	113.2	112.5	113.5	114.7	115.5	114.1
Boys' (12/77 = 100)	113.1	115.1	115.8	116.4	118.1	118.0	117.2	112.6	113.6	113.8	114.8	116.4	116.5	115.4
Coats, jackets, sweaters, and shirts (12/77 = 100)	108.6	107.0	109.2	111.3	111.9	111.6	109.9	111.8	107.6	109.5	112.3	113.5	112.8	110.9
Furnishings (12/77 = 100)	118.7	124.5	124.3	125.0	125.6	127.0	127.5	116.2	120.6	120.3	120.9	121.8	123.3	123.5
Suits, trousers, sport coats, and jackets (12/77 = 100)	114.3	117.7	117.5	117.0	119.9	119.3	118.8	112.0	115.6	114.7	114.4	116.6	116.9	115.9
Women's and girls'	157.4	153.5	157.8	162.9	161.2	160.6	159.6	158.2	157.9	161.2	164.9	162.7	162.1	160.7
Women's (12/77 = 100)	104.4	101.2	104.4	108.1	106.8	106.3	105.8	105.3	104.5	107.1	109.8	108.1	107.6	107.1
Coats and jackets	161.4	153.9	162.1	170.8	167.3	164.0	161.8	172.2	159.0	168.7	177.8	171.4	166.3	167.3
Dresses	163.8	162.2	166.2	170.8	166.9	165.0	164.0	154.3	154.1	153.4	155.5	151.5	151.9	149.5
Separates and sportswear (12/77 = 100)	101.4	95.1	97.4	101.1	100.4	101.1	100.7	102.4	99.1	101.1	103.3	102.3	101.9	101.3
Underwear, nightwear, and hosiery (12/77 = 100)	116.8	120.0	121.2	122.8	123.0	124.1	124.8	116.6	120.1	121.0	122.7	123.4	124.0	124.5
Suits (12/77 = 100)	91.9	78.6	87.0	95.4	92.4	89.5	87.7	98.2	100.6	109.8	115.0	110.2	108.5	106.0
Girls' (12/77 = 100)	106.1	108.5	107.9	109.7	109.2	109.2	107.7	104.9	106.9	107.6	108.8	108.4	108.4	106.0
Coats, jackets, dresses, and suits (12/77 = 100)	101.3	100.0	101.6	103.3	98.8	100.3	98.4	98.6	98.9	101.5	103.3	99.8	99.9	96.1
Separates and sportswear (12/77 = 100)	106.1	106.1	108.7	111.0	112.0	111.3	108.9	106.6	108.9	108.9	110.0	110.6	110.2	107.5
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	113.8	117.8	117.0	117.9	119.6	120.0	120.7	112.2	116.3	115.1	115.5	118.5	119.0	119.5

23. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.
APPAREL AND UPKEEP—Continued														
Apparel commodities—Continued														
Apparel commodities less footwear—Continued														
Infants' and toddlers'	250.1	259.8	263.6	266.4	268.5	264.9	259.4	255.4	272.9	279.3	279.8	281.6	274.1	270.6
Other apparel commodities	213.3	212.4	214.0	213.3	216.2	214.8	214.5	204.4	204.8	206.1	206.0	206.2	206.1	203.2
Sewing materials and notions (12/77 = 100)	110.6	115.3	117.5	118.3	118.1	118.6	118.3	110.0	113.6	115.3	116.4	116.3	116.4	116.2
Jewelry and luggage (12/77 = 100)	149.5	146.6	147.2	146.2	149.0	147.5	147.4	142.3	141.0	141.4	140.9	141.1	141.0	138.4
Footwear	196.6	199.0	200.0	202.4	204.2	205.4	205.7	196.7	199.2	200.8	202.3	204.1	206.2	205.9
Men's (12/77 = 100)	124.6	128.0	128.3	128.8	129.3	130.3	130.7	126.0	129.5	129.8	129.7	130.3	132.3	132.5
Boys' and girls' (12/77 = 100)	126.6	130.1	129.1	129.7	131.1	132.1	132.1	127.8	128.7	130.4	130.7	132.2	134.0	134.8
Women's (12/77 = 100)	120.0	118.7	120.6	123.5	124.9	125.2	125.4	117.5	117.8	118.9	121.2	122.5	122.9	121.6
Apparel services	243.4	258.9	260.2	262.0	263.2	264.6	266.4	242.2	256.3	258.2	260.0	262.1	262.3	264.4
Laundry and drycleaning other than coin operated (12/77 = 100)	143.5	153.8	154.7	155.7	157.1	158.2	159.2	143.2	153.1	153.9	155.0	156.4	156.3	157.8
Other apparel services (12/77 = 100)	130.5	136.7	137.2	138.2	137.5	137.9	139.1	129.9	135.1	136.5	137.4	138.3	138.6	139.6
TRANSPORTATION	261.1	282.6	283.7	285.2	287.2	289.1	289.8	261.9	283.9	285.1	286.6	288.9	290.8	291.5
Private	259.4	279.6	280.5	281.9	283.9	285.8	286.5	260.8	281.6	282.6	284.1	286.4	288.3	289.0
New cars	184.5	192.5	191.9	191.3	192.5	195.3	197.0	184.6	192.9	192.1	191.4	192.7	195.2	196.9
Used cars	234.4	260.3	266.9	272.8	278.2	281.4	281.9	234.4	260.3	266.9	272.8	278.2	281.4	281.9
Gasoline	373.3	412.9	411.7	411.2	409.9	409.5	408.4	374.4	414.0	412.9	412.4	411.3	410.9	409.8
Automobile maintenance and repair	280.1	293.5	295.5	298.7	301.3	302.8	304.1	280.6	293.4	296.1	299.3	301.8	303.4	304.8
Body work (12/77 = 100)	136.8	144.1	145.8	147.4	148.7	149.9	150.6	136.7	143.3	145.4	146.1	147.2	148.3	148.9
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	134.0	139.9	140.9	143.1	144.0	144.2	144.7	135.6	141.4	142.6	145.5	146.5	147.3	146.5
Maintenance and servicing (12/77 = 100)	131.6	137.4	137.8	138.9	140.3	140.9	141.5	131.7	137.3	138.2	139.2	140.3	140.5	141.0
Power plant repair (12/77 = 100)	132.7	139.9	141.2	142.6	144.0	144.9	145.6	132.2	139.1	140.5	141.9	143.5	144.7	145.1
Other private transportation	231.0	242.9	243.0	244.2	247.5	249.5	250.6	233.2	246.0	245.6	246.9	250.6	253.0	254.2
Other private transportation commodities	203.6	208.8	212.1	212.6	212.7	213.4	214.5	205.7	210.8	213.4	215.5	216.1	216.8	216.9
Motor oil, coolant, and other products (12/77 = 100)	138.8	144.8	146.8	147.7	148.0	148.5	148.7	139.0	143.4	144.1	145.3	144.8	146.7	147.2
Automobile parts and equipment (12/77 = 100)	130.6	133.6	135.7	136.0	136.0	136.4	137.2	132.0	136.2	137.0	138.4	138.9	139.2	139.2
Tires	182.1	185.6	189.3	189.7	189.4	189.7	191.5	184.7	188.4	191.5	194.1	194.6	195.1	195.2
Other parts and equipment (12/77 = 100)	127.6	131.7	132.4	132.8	133.4	134.1	133.9	127.8	132.2	132.9	133.2	134.3	134.1	133.9
Other private transportation services	240.6	254.3	253.6	255.0	259.1	261.5	262.6	242.9	257.7	256.6	257.7	262.2	265.1	266.6
Automobile insurance	252.5	259.8	260.3	262.0	264.6	265.4	266.0	252.0	259.6	260.1	261.8	264.3	265.0	265.5
Automobile finance charges (12/77 = 100)	159.4	180.9	177.3	178.0	184.4	188.7	190.5	157.9	179.9	176.3	176.5	183.1	187.6	189.9
Automobile rental, registration, and other fees (12/77 = 100)	115.8	118.0	119.5	120.1	120.2	120.7	120.8	117.5	118.4	119.5	119.8	120.0	121.1	121.4
State registration	146.9	147.9	147.9	147.9	147.9	149.0	149.0	147.0	147.9	148.0	148.0	148.0	149.0	149.0
Drivers' licenses (12/77 = 100)	105.3	105.9	[illegible]	109.6	109.9	110.4	111.9	105.1	105.6	105.9	109.5	109.8	110.3	111.9
Vehicle inspection (12/77 = 100)	124.3	128.6	(¹)	(¹)	(¹)	(¹)	128.3	125.1	129.3	(¹)	(¹)	(¹)	(¹)	129.0
Other vehicle-related fees (12/77 = 100)	132.7	136.6	140.0	140.9	141.2	141.3	141.6	142.0	143.1	145.8	145.9	146.5	148.6	149.2
Public	290.1	323.1	326.5	329.1	330.8	333.2	333.8	271.8	317.7	320.9	324.5	326.6	328.2	328.6
Airline fare	327.4	367.3	371.4	372.5	372.0	374.5	374.7	325.7	365.6	370.0	371.8	372.9	373.1	372.8
Intercity bus fare	310.1	343.5	347.5	351.4	361.3	362.2	365.2	309.8	343.6	347.3	351.7	362.1	362.9	366.1
Intracity mass transit	237.1	290.7	294.0	298.6	301.7	304.4	304.6	238.5	291.0	293.9	299.2	301.3	303.6	303.9
Taxi fare	269.7	287.1	288.1	288.6	289.3	291.3	294.7	275.9	295.7	296.7	297.1	298.1	300.4	304.1
Intercity train fare	270.1	304.6	304.6	305.0	315.0	319.2	319.2	270.3	304.9	305.0	305.2	314.9	318.9	318.9
MEDICAL CARE	275.8	295.6	299.3	301.7	304.8	308.2	310.2	277.6	295.4	298.6	300.9	304.0	307.1	309.1
Medical care commodities	175.1	187.7	189.4	190.8	192.1	193.1	194.9	175.6	189.2	190.6	191.9	192.9	193.8	195.4
Prescription drugs	160.7	173.7	175.4	176.5	178.6	179.6	181.0	161.5	175.0	176.5	178.0	179.4	180.3	181.9
Anti-infective drugs (12/77 = 100)	124.7	133.9	134.8	136.5	136.8	136.3	137.8	126.4	135.8	137.0	139.2	139.6	138.9	139.7
Tranquilizers and sedatives (12/77 = 100)	130.2	138.4	139.6	140.0	141.9	143.6	144.8	128.6	137.6	138.8	139.7	141.3	143.3	144.4
Circulatories and diuretics (12/77 = 100)	119.1	126.5	127.6	127.8	129.5	130.4	131.9	120.2	127.9	128.6	129.0	130.5	131.0	131.8
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	142.3	158.1	160.4	160.6	161.9	163.3	164.6	141.7	158.2	160.3	161.4	162.8	164.1	165.9
Pain and symptom control drugs (12/77 = 100)	126.9	139.1	140.2	141.7	144.1	144.9	145.9	129.6	141.8	142.7	143.8	144.2	145.4	147.3
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	122.4	131.8	133.1	134.1	136.8	137.5	138.1	123.1	132.5	133.9	134.6	136.1	136.8	138.0
Nonprescription drugs and medical supplies (12/77 = 100)	126.2	134.5	135.6	136.7	137.0	137.8	139.2	126.5	135.8	136.7	137.4	137.9	138.5	139.7
Eyeglasses (12/77 = 100)	120.8	125.8	126.3	126.9	127.4	127.8	128.4	120.4	125.0	125.3	126.0	126.0	126.7	127.1
Internal and respiratory over-the-counter drugs	198.1	213.1	215.5	217.8	217.3	218.6	221.6	198.0	215.4	217.5	218.9	218.5	220.2	222.8
Nonprescription medical equipment and supplies (12/77 = 100)	122.5	129.9	130.4	131.4	132.7	133.7	134.6	123.7	132.2	132.3	132.6	133.8	134.7	135.2
Medical care services	297.9	319.2	323.4	326.1	329.7	333.7	335.7	300.0	318.5	322.1	324.7	328.3	332.0	334.0
Professional services	261.7	280.4	282.9	284.3	286.4	288.4	290.0	265.0	280.8	282.7	284.5	286.2	288.2	290.3
Physicians' services	280.3	300.7	302.7	304.9	307.9	311.3	313.0	285.7	304.7	306.7	308.6	310.9	314.1	316.0
Dental services	248.6	266.5	269.9	270.8	271.6	272.3	273.9	251.3	264.6	266.6	268.4	269.5	270.1	272.3
Other professional services (12/77 = 100)	128.5	136.8	137.3	137.7	138.9	139.5	140.3	128.6	132.7	133.6	134.3	134.9	136.2	137.2
Other medical care services	341.6	366.1	372.5	376.5	382.1	388.4	390.9	342.9	364.6	370.6	374.1	380.3	386.2	388.1
Hospital and other medical services (12/77 = 100)	141.7	151.7	154.7	156.6	159.0	161.9	162.7	141.3	150.3	153.1	154.8	157.9	160.6	161.1
Hospital room	443.7	478.0	489.4	494.6	503.0	515.4	519.3	443.1	472.2	482.6	488.5	498.9	508.6	512.6
Other hospital and medical care services (12/77 = 100)	141.4	150.4	152.9	155.0	157.2	159.2	159.6	140.6	149.4	151.8	153.4	156.1	158.3	158.4

23. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.
ENTERTAINMENT	212.0	221.1	222.3	224.0	225.5	226.8	227.3	210.1	218.7	219.9	221.5	223.4	224.3	224.4
Entertainment commodities	215.3	225.5	226.5	227.9	228.9	230.3	230.6	210.9	221.1	222.2	224.0	224.2	225.5	225.4
Reading materials (12/77 = 100)	128.2	136.0	136.0	138.1	138.7	139.8	139.6	127.6	135.9	135.9	137.8	138.3	139.3	139.1
Newspapers	246.2	265.0	265.5	266.3	267.1	267.6	267.7	245.5	265.0	265.4	266.2	266.9	267.5	267.6
Magazines, periodicals, and books (12/77 = 100)	131.5	137.3	137.2	141.1	141.9	143.9	143.5	131.5	137.4	137.1	141.2	141.9	143.7	143.4
Sporting goods and equipment (12/77 = 100)	122.9	127.0	127.2	127.3	128.3	130.2	130.0	117.8	120.6	120.8	121.3	121.4	122.8	122.4
Sport vehicles (12/77 = 100)	124.0	129.0	128.6	128.4	129.4	(1)	132.1	116.5	118.5	118.3	118.7	118.6	(1)	120.2
Indoor and warm weather sport equipment (12/77 = 100)	116.2	117.7	118.2	119.1	119.2	119.6	119.9	113.4	117.0	116.7	117.2	117.3	118.2	117.9
Bicycles	184.7	191.0	192.2	193.2	194.4	194.3	193.9	184.9	192.1	193.5	193.9	195.9	196.3	195.2
Other sporting goods and equipment (12/77 = 100)	120.4	122.7	124.1	125.0	126.6	126.7	126.2	119.3	122.9	124.9	125.8	126.2	126.9	126.3
Toys, hobbies, and other entertainment (12/77 = 100)	123.5	129.3	130.5	131.0	131.3	131.3	132.0	121.8	128.5	129.6	130.6	130.5	130.8	130.9
Toys, hobbies, and music equipment (12/77 = 100)	121.3	127.9	129.3	129.4	129.6	129.7	130.1	118.5	125.3	126.6	127.1	126.2	126.7	126.9
Photographic supplies and equipment (12/77 = 100)	122.0	125.7	126.0	126.4	126.0	125.5	125.2	122.4	127.0	127.1	127.7	127.8	127.5	126.3
Pet supplies and expenses (12/77 = 100)	128.4	134.5	136.2	137.2	138.3	138.3	140.2	127.6	135.1	136.6	138.8	139.9	140.1	140.9
Entertainment services	207.8	215.2	216.7	218.9	221.0	222.3	223.0	209.7	215.8	217.0	218.3	223.3	223.4	223.9
Fees for participant sports (12/77 = 100)	125.7	131.6	132.0	134.3	136.4	137.3	137.6	125.9	131.6	132.4	134.0	138.9	139.1	139.3
Admissions (12/77 = 100)	123.1	125.9	128.1	128.0	128.3	128.9	129.7	124.0	125.7	126.9	127.3	128.2	128.3	128.7
Other entertainment services (12/77 = 100)	119.4	121.7	121.7	122.5	123.1	123.4	123.7	121.8	123.2	123.1	122.7	124.2	124.1	124.3
OTHER GOODS AND SERVICES	224.6	234.4	235.6	243.0	245.2	245.9	246.7	223.0	232.4	233.5	239.3	241.4	242.5	243.5
Tobacco products	210.8	219.3	219.9	221.7	225.3	226.2	226.8	210.4	218.4	219.1	220.9	224.5	225.4	225.9
Cigarettes	213.5	221.6	222.2	224.2	228.1	228.9	229.7	213.2	220.7	221.4	223.4	227.2	228.1	228.7
Other tobacco products and smoking accessories (12/77 = 100)	124.9	132.5	132.9	133.1	134.0	134.7	134.4	124.5	133.4	133.9	134.4	134.7	135.0	134.7
Personal care	220.9	233.4	235.1	236.3	236.9	237.7	239.1	220.0	231.2	232.4	233.6	234.1	235.5	237.1
Toilet goods and personal care appliances	215.2	228.7	230.1	231.2	231.6	232.5	234.7	214.3	228.4	229.4	231.1	231.4	233.1	235.4
Products for the hair, hairpieces, and wigs (12/77 = 100)	125.2	133.9	134.1	134.1	134.9	135.4	136.5	125.3	131.7	132.5	133.3	131.8	133.3	135.8
Dental and shaving products (12/77 = 100)	128.4	139.0	140.0	140.0	139.8	140.5	141.2	125.4	137.1	137.6	138.0	138.0	139.3	139.8
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	122.6	127.7	128.9	130.7	131.2	131.8	133.2	121.4	128.3	128.9	130.4	131.6	132.2	133.7
Other toilet goods and small personal care appliances (12/77 = 100)	124.8	133.0	133.9	134.2	133.7	134.3	136.0	126.8	135.9	136.4	137.4	138.2	139.1	139.1
Personal care services	226.6	238.4	240.3	241.5	242.3	243.1	243.9	225.8	234.4	235.7	236.3	237.1	238.1	239.2
Beauty parlor services for women	228.7	240.5	241.9	243.0	243.9	244.8	245.2	227.5	235.1	235.7	236.1	236.7	237.8	238.8
Haircuts and other barber shop services for men (12/77 = 100)	126.4	132.7	134.4	135.3	135.6	135.9	136.8	126.0	131.8	133.3	133.9	134.5	134.9	135.7
Personal and educational expenses	251.5	259.2	260.4	281.5	284.6	284.9	285.1	251.7	260.1	261.7	281.8	284.8	285.6	285.9
Schoolbooks and supplies	222.1	231.3	231.4	252.1	254.5	254.6	254.5	225.8	235.2	235.2	255.9	258.3	258.3	258.5
Personal and educational services	258.2	265.8	267.2	288.5	291.7	292.1	292.3	258.1	266.4	268.4	288.5	291.6	292.5	292.8
Tuition and other school fees	132.2	133.5	134.2	147.4	149.0	149.1	149.1	132.4	133.7	134.7	147.7	149.3	149.4	149.4
College tuition (12/77 = 100)	131.5	133.0	133.2	146.3	148.2	148.3	148.3	131.5	132.9	133.1	146.1	148.1	148.1	148.1
Elementary and high school tuition (12/77 = 100)	134.4	135.3	137.8	151.5	151.6	152.0	152.0	134.3	135.4	138.7	152.1	152.2	152.7	152.7
Personal expenses (12/77 = 100)	133.4	147.9	148.7	150.0	152.3	152.8	153.4	132.2	146.6	147.6	148.5	150.4	152.1	152.7
Special indexes:														
Gasoline, motor oil, coolant, and other products	368.3	407.1	405.9	405.4	404.3	403.9	402.8	369.4	408.0	406.9	406.5	405.4	405.1	404.0
Insurance and finance	364.5	402.7	406.1	417.6	419.0	422.2	423.1	364.7	402.4	407.3	416.4	417.6	420.9	422.1
Utilities and public transportation	255.8	286.5	289.7	293.3	292.7	292.6	293.9	254.4	285.6	288.5	292.4	291.6	291.5	292.6
Housekeeping and home maintenance services	308.4	332.3	334.0	335.7	335.9	339.6	341.3	306.6	322.8	333.0	335.5	337.3	339.9	341.5

[1] Not available.

24. Consumer Price Index for All Urban Consumers: Cross classification of region and population size class by expenditure category and commodity and service group

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000-1.250 million)			Size class C (75,000-385,000)			Size class D (75,000 or less)		
	1981			1981			1981			1981		
	Aug.	Oct.	Dec.	Aug.	Oct.	Dec.	Aug.	Oct.	Dec.	Aug.	Oct.	Dec.
	Northeast											
EXPENDITURE CATEGORY												
All items	142.1	143.8	144.2	150.5	152.3	152.9	155.3	156.2	159.2	147.7	149.2	150.7
Food and beverages	139.4	139.7	139.6	139.9	139.9	139.6	142.3	142.6	142.8	137.6	137.4	137.0
Housing	146.2	147.8	148.0	160.4	161.4	161.9	170.4	170.1	176.3	155.2	158.6	159.3
Apparel and upkeep	117.6	118.9	117.5	118.3	124.8	123.1	123.5	124.8	125.9	125.7	128.5	125.4
Transportation	154.5	156.3	157.9	161.3	164.0	165.4	160.5	162.0	162.7	158.3	159.7	161.8
Medical care	137.6	140.0	142.0	139.2	143.6	146.6	140.8	146.5	146.3	138.9	142.3	143.0
Entertainment	129.3	131.8	131.9	129.1	129.6	131.0	127.8	129.5	133.7	131.7	133.2	134.3
Other goods and services	127.2	134.6	135.4	132.2	138.0	138.7	135.8	141.5	142.0	129.5	137.5	138.5
COMMODITY AND SERVICE GROUP												
Commodities	141.0	142.1	141.8	148.6	149.6	149.6	149.1	149.8	151.1	146.0	146.4	147.2
Commodities less food and beverages	142.0	143.7	143.2	152.7	154.3	154.5	152.3	153.1	154.9	150.0	150.7	152.1
Services	143.5	146.0	147.3	153.6	156.5	158.0	165.4	166.7	172.5	150.5	153.5	156.1
	North Central region											
EXPENDITURE CATEGORY												
All items	152.3	152.6	152.6	149.1	148.8	149.2	145.4	145.9	147.4	145.3	146.7	147.6
Food and beverages	139.4	139.7	139.8	139.2	139.3	139.3	140.8	140.3	140.7	142.4	143.3	143.4
Housing	165.9	164.4	163.3	154.7	153.6	153.8	148.5	147.5	150.0	147.0	148.3	149.1
Apparel and upkeep	112.9	115.5	113.7	120.2	127.2	128.0	116.9	123.4	122.4	121.6	123.1	123.6
Transportation	158.9	161.2	162.9	158.4	159.5	160.8	159.3	161.2	162.3	157.6	158.6	160.1
Medical care	141.3	142.8	144.6	144.5	145.6	146.8	143.9	145.3	147.7	146.9	147.7	151.2
Entertainment	130.9	132.2	134.1	168.4	123.8	124.4	129.8	131.3	132.6	128.1	128.4	129.2
Other goods and services	131.2	136.0	137.0	136.5	142.4	142.9	131.5	135.1	135.6	133.6	140.4	141.7
COMMODITY AND SERVICE GROUP												
Commodities	145.7	145.7	145.1	142.9	142.9	142.9	141.7	141.4	142.2	139.4	140.7	140.7
Commodities less food and beverages	148.7	148.5	147.6	144.5	144.4	144.4	142.1	141.9	142.8	138.1	139.6	138.5
Services	162.1	162.9	163.7	156.4	158.3	159.5	151.6	153.3	156.1	154.8	156.2	158.7
	South											
EXPENDITURE CATEGORY												
All items	148.2	150.9	152.0	151.6	153.4	155.9	148.5	149.2	152.3	147.2	149.4	150.8
Food and beverages	140.2	141.2	141.4	141.7	141.1	141.3	141.6	141.2	141.9	143.9	144.0	143.4
Housing	154.9	158.6	160.3	160.5	162.5	166.7	155.3	154.7	159.7	150.9	153.5	156.2
Apparel and upkeep	121.9	124.4	123.5	120.6	122.6	123.7	115.1	118.3	118.2	108.6	111.8	110.4
Transportation	158.9	160.6	161.9	160.3	162.3	164.1	158.6	160.2	162.3	159.1	160.6	161.6
Medical care	138.3	141.6	143.2	141.6	145.9	147.6	145.6	148.8	153.0	149.9	156.3	160.1
Entertainment	125.3	127.1	127.4	132.2	133.4	137.1	132.1	134.8	136.4	138.6	138.8	138.4
Other goods and services	135.3	139.2	139.7	134.6	139.5	139.5	132.7	138.5	139.9	134.8	139.5	140.5
COMMODITY AND SERVICE GROUP												
Commodities	143.5	145.0	145.9	144.7	145.7	147.5	143.1	143.6	145.3	143.2	144.1	145.1
Commodities less food and beverages	144.9	146.6	147.9	146.0	147.7	150.1	143.8	144.6	146.7	143.0	144.2	145.8
Services	154.9	159.3	160.5	161.9	164.9	168.6	156.9	157.9	163.1	153.1	157.4	159.5
	West											
EXPENDITURE CATEGORY												
All items	152.4	156.3	156.1	151.2	155.0	155.1	146.4	149.2	149.4	147.7	152.1	149.1
Food and beverages	140.3	140.3	140.8	144.6	144.9	145.4	141.2	141.4	140.1	145.2	145.5	145.8
Housing	160.6	167.1	165.5	156.6	162.6	161.6	148.9	153.5	153.8	145.6	153.9	146.1
Apparel and upkeep	121.2	121.8	121.9	124.5	127.6	127.1	114.6	116.5	117.1	134.4	135.9	135.6
Transportation	159.3	161.8	162.9	161.1	163.5	165.0	160.8	162.1	162.8	161.0	162.5	164.6
Medical care	149.2	150.5	155.7	146.1	148.1	151.3	147.0	149.4	151.1	149.9	150.4	152.8
Entertainment	130.2	133.0	133.6	130.1	132.5	133.9	130.8	131.4	129.4	145.4	144.4	145.6
Other goods and services	136.4	140.1	141.0	137.3	141.4	142.8	131.3	136.1	136.8	141.0	145.5	148.0
COMMODITY AND SERVICE GROUP												
Commodities	143.4	145.1	144.9	145.2	147.0	147.2	142.6	144.4	143.7	144.5	146.2	145.5
Commodities less food and beverages	144.7	147.1	146.6	145.5	147.8	148.0	143.2	145.6	145.1	144.2	146.5	145.4
Services	164.3	171.2	170.9	159.4	166.0	166.0	151.7	156.1	157.5	152.5	160.9	154.6

25. Consumer Price Index—U.S. city average, and selected areas

[1967=100 unless otherwise specified]

Area[1]	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.
U.S. city average[2]	258.4	274.4	276.5	279.3	279.9	280.7	281.5	258.7	274.6	276.5	279.1	279.7	280.4	281.1
Anchorage, Alaska (10/67=100)	...	245.1	...	250.5	...	253.7	...	...	241.7	...	245.9	...	249.3	...
Atlanta, Ga.	258.3	...	276.1	...	281.5	...	282.2	260.3	...	276.1	...	283.0	...	284.1
Baltimore, Md.	...	272.5	...	279.9	...	280.7	...	...	273.7	...	281.6	...	280.9	...
Boston, Mass.	...	266.3	...	272.8	...	274.2	...	...	266.5	...	273.6	...	274.3	...
Buffalo, N.Y.	248.5	...	260.3	...	262.5	...	264.3	245.2	...	259.4	...	261.2	...	262.7
Chicago, Ill.-Northwestern Ind.	260.3	272.7	275.8	276.9	276.1	277.0	273.9	258.9	271.7	274.6	275.8	276.3	277.3	274.4
Cincinnati, Ohio-Ky.-Ind.	...	273.3	...	275.2	...	276.6	...	...	276.3	...	277.1	...	279.0	...
Cleveland, Ohio	266.5	...	284.4	...	282.8	...	281.6	266.7	...	283.0	...	282.3	...	281.2
Dallas-Ft. Worth, Tex.	269.5	...	288.2	...	292.5	...	295.1	268.2	...	285.1	...	288.8	...	291.0
Denver-Boulder, Colo.	...	294.2	...	298.9	...	297.8	...	...	299.9	...	304.2	...	302.8	...
Detroit, Mich.	269.7	283.1	283.5	284.2	281.5	279.6	278.3	265.5	278.9	279.1	280.2	278.2	276.4	275.1
Honolulu, Hawaii	236.1	...	256.6	...	259.3	...	258.3	237.0	...	256.6	...	259.1	...	259.3
Houston, Tex.	274.8	...	294.7	...	300.0	...	302.7	272.1	...	291.8	...	295.9	...	298.8
Kansas City, Mo.-Kansas	250.1	...	271.3	...	272.6	...	273.5	257.2	...	270.2	...	271.3	...	272.0
Los Angeles-Long Beach, Anaheim, Calif.	258.7	272.2	274.8	279.3	281.3	281.8	282.3	262.2	276.3	278.6	282.9	284.9	285.5	286.1
Miami, Fla. (11/77=100)	...	146.1	...	150.2	...	153.6	...	...	143.7	...	151.0	...	154.7	...
Milwaukee, Wis.	...	285.6	...	286.9	...	287.5	...	...	291.2	...	292.1	...	291.5	...
Minneapolis-St. Paul, Minn.-Wis.	259.0	...	286.6	...	291.6	...	298.7	260.6	...	287.0	...	291.6	...	298.3
New York, N.Y.-Northeastern N.J.	247.3	262.5	264.8	268.8	268.0	267.8	267.9	247.2	262.3	264.0	267.8	267.0	266.9	266.9
Northeast, Pa. (Scranton)	...	266.0	...	271.5	...	272.2	...	...	269.0	...	275.0	...	275.2	...
Philadelphia, Pa.-N.J.	250.5	267.8	270.5	274.4	274.7	274.1	274.9	252.3	268.5	271.6	274.5	275.2	274.5	274.1
Pittsburgh, Pa.	262.0	...	277.7	...	277.7	...	281.8	262.9	...	278.1	...	278.4	...	282.6
Portland, Oreg.-Wash.	...	280.8	...	291.1	...	276.7	...	...	279.2	...	288.8	...	276.3	...
St. Louis, Mo.-Ill.	...	269.4	...	273.4	...	273.8	...	...	269.2	...	273.0	...	273.0	...
San Diego, Calif.	...	305.4	...	313.9	...	321.3	...	...	300.5	...	308.0	...	315.1	...
San Francisco-Oakland, Calif.	254.9	...	287.9	...	297.0	...	294.0	255.7	...	287.2	...	295.6	...	292.7
Seattle-Everett, Wash.	...	282.3	...	288.6	...	289.2	...	...	277.8	...	284.3	...	285.7	...
Washington, D.C.-Md.-Va.	...	267.1	...	271.8	...	275.5	...	...	271.4	...	275.7	...	279.3	...

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[1] The areas listed include not only the central city but the entire portion of the Standard Metropolitan Statistical Area, as defined for the 1970 Census of Population, except that the Standard Consolidated Area is used for New York and Chicago.

[2] Average of 85 cities.

26. Producer Price Indexes, by stage of processing

[1967=100]

Commodity grouping	Annual average 1981	1981												1982
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[1]	Oct.	Nov.	Dec.	Jan.
FINISHED GOODS														
Finished goods	269.8	260.9	263.3	266.0	268.5	269.6	270.5	271.8	271.5	^{r}271.5	274.0	274.5	275.3	277.4
Finished consumer goods	271.2	262.5	265.0	268.2	270.6	271.5	272.3	273.5	273.0	^{r}273.1	274.7	274.9	275.6	277.4
Finished consumer foods	253.5	251.0	251.3	252.6	251.9	252.8	253.8	257.6	258.3	^{r}258.2	253.7	252.7	253.0	258.4
Crude	263.6	257.9	265.6	279.7	279.3	263.1	258.9	262.7	258.9	^{r}253.5	253.3	259.5	273.4	280.1
Processed	250.6	248.4	247.9	249.1	247.4	249.8	251.3	255.0	254.2	^{r}254.4	251.7	250.0	249.1	252.2
Nondurable goods less foods	319.4	302.7	308.4	316.0	320.4	321.0	322.0	322.5	322.1	^{r}324.2	323.8	325.0	325.9	328.1
Durable goods	218.5	214.9	215.1	214.0	216.6	218.1	218.2	218.1	218.3	^{r}215.8	224.3	224.3	225.0	225.8
Consumer nondurable goods less food and energy	208.6	201.9	203.5	204.8	207.3	207.7	208.4	209.5	210.4	^{r}211.8	212.2	213.3	213.4	216.2
Capital equipment	264.3	254.6	256.7	258.1	260.8	262.5	263.8	265.4	265.8	^{r}268.3	271.4	272.9	274.1	276.1
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	306.0	296.1	298.3	302.0	305.8	306.7	307.2	308.5	310.1	^{r}309.7	309.3	309.0	308.6	311.3
Materials and components for manufacturing	286.2	279.6	280.3	281.6	284.1	285.1	285.8	287.9	289.8	290.2	290.3	289.6	289.7	290.8
Materials for food manufacturing	260.9	260.7	273.2	267.5	263.1	259.0	262.4	260.5	261.0	^{r}254.6	252.7	249.2	247.3	252.9
Materials for nondurable manufacturing	285.9	274.0	276.5	279.4	284.3	287.0	287.7	289.2	291.0	291.2	290.8	289.7	289.5	289.4
Materials for durable manufacturing	312.2	306.9	305.4	306.9	310.6	311.2	310.7	314.4	316.0	^{r}317.1	317.1	315.1	314.4	314.2
Components for manufacturing	259.2	250.3	253.0	254.2	255.4	256.3	257.3	259.5	261.8	^{r}263.8	264.7	266.3	267.7	269.7
Materials and components for construction	287.5	279.2	280.3	282.7	286.0	288.5	289.6	290.4	290.7	^{r}290.0	289.8	289.9	290.8	291.9
Processed fuels and lubricants	595.0	551.9	569.8	598.3	608.5	608.7	605.7	602.0	607.8	^{r}601.4	585.1	584.2	587.7	605.7
Manufacturing industries	498.2	469.5	482.8	503.9	509.0	510.7	505.4	500.3	508.3	^{r}500.5	485.6	485.4	488.6	507.7
Nonmanufacturing industries	680.5	624.7	648.7	681.6	696.2	695.2	694.3	692.0	695.6	^{r}690.5	683.1	681.5	685.3	692.0
Containers	276.2	264.6	268.2	270.9	274.3	276.4	277.2	278.8	280.3	^{r}280.6	281.1	280.7	280.6	282.2
Supplies	263.9	257.8	257.8	258.9	262.4	264.0	264.6	266.0	266.1	266.1	267.1	267.4	268.7	269.8
Manufacturing industries	253.2	242.5	244.8	246.8	250.6	252.3	253.4	255.0	256.0	^{r}256.8	258.9	258.5	261.5	262.5
Nonmanufacturing industries	269.6	265.7	264.6	265.2	268.7	270.2	270.5	272.0	271.8	^{r}271.1	271.5	271.7	272.7	273.9
Feeds	230.4	252.0	237.5	231.7	239.2	242.9	235.4	232.8	229.1	^{r}221.3	216.3	212.0	214.7	215.2
Other supplies	276.4	265.6	268.3	270.6	272.9	273.8	276.3	278.7	279.3	^{r}280.7	282.5	283.9	284.4	285.6
CRUDE MATERIALS														
Crude materials for further processing	329.1	328.0	336.5	334.2	336.3	334.4	335.4	337.3	333.0	^{r}327.4	320.3	314.1	311.6	318.2
Foodstuffs and feedstuffs	257.4	270.7	267.1	262.1	263.5	260.6	264.3	267.2	261.8	^{r}253.4	245.6	238.3	233.7	242.5
Nonfood materials	481.6	450.1	484.9	488.4	492.1	492.4	487.4	487.2	485.3	^{r}486.0	480.5	478.9	479.1	481.1
Nonfood materials except fuel	413.9	391.0	427.9	430.9	432.5	426.3	419.1	413.1	413.9	^{r}410.2	405.5	398.5	396.4	399.7
Manufacturing industries	429.6	406.1	445.5	448.6	450.2	445.5	434.2	429.7	429.6	^{r}425.4	420.0	412.2	409.9	413.2
Construction	262.4	254.8	257.2	259.2	261.5	261.7	262.6	262.6	263.1	^{r}263.6	266.7	266.7	267.1	269.6
Crude fuel	676.5	677.4	697.7	703.6	716.6	738.4	759.2	781.2	769.7	^{r}768.7	779.7	792.6	814.7	810.0
Manufacturing industries	865.4	771.9	796.1	805.8	821.9	850.6	877.2	902.6	883.0	^{r}911.4	899.1	915.8	944.5	938.3
Nonmanufacturing industries	674.3	614.9	630.6	635.0	645.8	662.2	679.5	698.1	687.8	^{r}704.8	698.4	708.4	725.3	723.6
SPECIAL GROUPINGS														
Finished goods excluding foods	273.2	262.4	265.5	268.7	272.1	273.3	274.1	274.7	274.6	^{r}274.7	278.7	279.7	280.6	282.3
Finished consumer goods excluding foods	276.3	265.1	268.5	272.5	276.1	277.0	277.7	277.9	277.7	^{r}277.9	281.3	282.0	282.8	284.4
Finished consumer goods less energy	233.9	233.8	229.6	230.2	231.8	232.8	233.4	235.0	235.0	^{r}234.9	236.8	237.0	237.3	239.8
Intermediate materials less foods and feeds	310.1	298.0	301.0	305.4	309.5	310.7	311.2	312.7	314.5	^{r}314.6	314.5	314.3	315.1	318.6
Intermediate materials less energy	285.2	278.3	279.1	280.5	283.7	284.7	285.5	287.2	288.5	288.7	288.9	288.6	289.0	290.1
Intermediate foods and feeds	250.7	270.9	261.3	256.6	254.9	253.1	253.2	251.1	250.2	^{r}243.5	240.6	236.9	236.4	240.4
Crude materials less agricultural products	545.8	504.0	547.6	551.8	558.0	557.5	551.3	550.6	549.1	^{r}551.4	544.3	540.9	544.1	545.7
Crude materials less energy	254.0	266.0	262.6	259.6	261.1	257.9	259.7	261.8	258.0	^{r}250.4	243.6	235.9	231.6	239.2

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[1] Data for September 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

r=revised.

27. Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[1]	Oct.	Nov.	Dec.	1982 Jan.
	All commodities	293.4	284.8	287.0	290.3	293.4	294.1	294.8	296.2	296.4	r295.7	296.0	295.5	295.9	298.2
	All commodities (1957-59 = 100)	311.3	302.2	305.1	308.0	311.3	312.0	312.8	314.3	314.5	r313.7	314.1	313.5	313.9	316.4
	Farm products and processed foods and feeds	251.5	257.9	255.1	253.5	253.8	252.9	254.3	256.8	254.2	r250.3	246.1	242.7	241.2	246.2
	Industrial commodities	304.1	291.5	295.7	299.6	303.5	304.7	305.1	306.2	307.2	r307.4	308.8	309.1	310.1	311.7
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	254.9	264.5	262.4	260.7	263.3	259.6	260.7	263.3	257.9	r251.1	243.3	237.4	234.5	242.1
01-1	Fresh and dried fruits and vegetables	267.0	258.7	271.5	292.8	286.1	275.3	263.[illegible]	265.6	258.1	r252.8	247.9	253.2	279.8	288.3
01-2	Grains	248.4	277.7	267.5	261.8	264.7	257.7	257.1	257.4	242.7	227.0	227.6	226.5	213.6	225.2
01-3	Livestock	248.0	244.3	244.6	239.3	246.6	251.8	263.0	266.5	262.0	257.3	244.4	231.1	225.0	236.8
01-4	Live poultry	201.2	213.1	220.8	213.5	195.4	207.2	210.0	215.3	210.3	196.7	185.7	175.0	171.4	186.8
01-5	Plant and animal fibers	242.0	264.1	268.4	270.1	274.2	258.3	259.6	251.3	232.5	206.5	211.7	198.5	188.4	198.2
01-6	Fluid milk	287.4	288.4	289.5	289.5	287.2	283.6	285.0	284.3	285.0	287.3	294.3	288.2	286.7	287.6
01-7	Eggs	187.1	185.7	184.8	180.4	196.2	185.0	174.6	185.1	180.7	193.2	193.8	209.7	195.5	187.0
01-8	Hay, hayseeds, and oilseeds	274.1	311.8	295.0	289.5	296.3	290.0	285.3	290.0	284.3	267.2	230.4	221.1	218.8	218.4
01-9	Other farm products	274.3	296.1	295.1	295.9	295.9	259.7	242.7	250.2	263.9	268.9	267.8	275.8	280.2	280.1
02	Processed foods and feeds	248.7	253.3	250.2	248.5	247.6	248.2	249.9	252.2	251.2	r248.9	246.6	244.7	244.0	247.4
02-1	Cereal and bakery products	255.5	251.5	252.1	252.2	253.9	256.3	256.4	258.3	257.7	r258.5	256.6	257.5	255.9	256.6
02-2	Meats, poultry, and fish	246.2	248.1	243.6	242.0	239.1	245.2	248.6	257.1	254.4	r253.3	246.6	240.0	236.3	244.2
02-3	Dairy products	245.7	244.7	245.0	245.1	245.4	244.6	245.2	245.1	245.3	r245.5	247.4	246.9	247.2	247.7
02-4	Processed fruits and vegetables	261.1	238.4	243.7	255.2	258.0	259.4	262.5	265.9	267.3	r270.0	271.3	270.1	271.4	272.8
02-5	Sugar and confectionery	276.8	344.6	323.7	302.0	284.5	282.8	274.8	266.0	267.3	246.8	250.0	249.0	250.9	260.8
02-6	Beverages and beverage materials	247.5	243.0	244.8	245.4	246.0	247.6	248.1	249.0	249.4	r249.1	248.3	250.8	251.5	253.5
02-7	Fats and oils	227.5	230.2	228.2	229.8	232.4	228.2	227.3	234.8	229.5	r224.3	223.6	221.7	219.3	217.0
02-8	Miscellaneous processed foods	250.1	244.2	248.0	249.2	249.9	251.1	251.5	252.2	252.1	253.0	249.8	250.1	250.1	250.5
02-9	Prepared animal feeds	230.3	248.9	235.9	231.1	237.7	241.0	234.3	232.2	228.9	r222.9	218.4	214.6	217.2	217.7
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	199.6	193.1	193.9	195.2	197.6	199.2	200.1	201.3	202.4	r202.9	203.0	203.2	203.1	203.7
03-1	Synthetic fibers (12/75 = 100)	156.7	146.5	147.1	148.9	151.5	156.4	157.9	159.7	161.2	r161.0	163.5	162.5	162.4	163.7
03-2	Processed yarns and threads (12/75 = 100)	137.8	129.8	130.3	134.6	136.0	138.6	139.3	140.3	142.0	r142.3	142.0	140.3	139.8	135.3
03-3	Gray fabrics (12/75 = 100)	146.7	143.6	144.0	144.7	146.6	145.8	147.4	148.2	149.0	r149.1	147.8	147.9	147.7	148.3
03-4	Finished fabrics (12/75 = 100)	125.2	122.2	122.9	123.2	124.9	125.7	125.6	126.0	126.8	r126.8	126.1	126.5	125.8	126.7
03-81	Apparel	185.5	179.9	180.7	181.4	184.3	185.2	186.2	187.2	187.8	r188.0	187.9	188.7	189.1	190.1
03-82	Textile housefurnishings	229.2	219.8	221.3	221.3	222.1	224.0	223.9	227.1	228.8	r232.2	237.4	237.9	238.1	241.9
04	Hides, skins, leather, and related products	261.5	258.2	257.7	261.2	263.5	263.7	261.6	261.1	261.3	r261.7	262.7	261.7	262.7	264.5
04-2	Leather	319.5	332.6	310.0	322.5	337.8	330.0	321.0	319.0	313.7	r313.2	312.1	311.3	311.9	320.3
04-3	Footwear	241.2	238.4	240.7	240.4	241.1	241.4	241.5	242.4	242.5	r242.9	241.6	241.1	241.7	241.4
04-4	Other leather and related products	243.5	230.1	236.9	238.4	238.5	244.2	244.3	242.9	245.1	r245.0	250.1	250.5	250.5	252.7
05	Fuels and related products and power	694.4	634.6	667.5	698.5	707.2	709.0	707.6	704.9	704.3	r703.5	697.2	697.5	702.7	705.8
05-1	Coal	487.3	477.8	480.8	481.1	486.1	487.3	491.7	505.5	507.0	r510.2	511.1	513.1	515.6	526.1
05-2	Coke	456.5	430.1	430.1	430.1	430.1	467.9	469.7	469.7	469.7	r469.7	470.3	470.3	470.3	470.3
05-3	Gas fuels[3]	939.8	857.1	881.6	899.9	907.8	933.9	954.6	969.4	949.3	r976.6	984.7	981.4	1007.7	990.2
05-4	Electric power	366.8	341.4	346.2	351.2	355.5	360.4	366.6	374.6	385.8	r383.8	375.9	377.6	383.8	392.5
05-61	Crude petroleum[4]	803.6	704.4	842.7	842.8	842.5	839.9	815.9	798.9	796.8	r796.8	788.4	786.0	787.4	787.4
05-7	Petroleum products, refined[5]	805.8	736.9	769.6	825.5	840.9	835.3	828.1	816.3	813.4	r806.1	802.0	797.9	798.3	802.9
06	Chemicals and allied products	287.8	274.3	277.6	280.4	286.0	288.6	290.5	291.3	293.3	293.3	292.8	292.5	292.7	293.4
06-1	Industrial chemicals[6]	363.8	344.5	352.1	354.5	362.4	368.5	369.7	370.4	371.5	r371.8	368.4	365.6	364.6	363.8
06-21	Prepared paint	249.9	242.9	246.6	246.6	248.1	250.0	250.0	250.7	250.7	r250.7	251.0	254.8	256.7	259.3
06-22	Paint materials	300.2	284.0	287.0	290.5	295.4	300.3	300.8	304.5	308.5	r308.0	308.0	307.4	307.9	308.7
06-3	Drugs and pharmaceuticals	193.4	184.7	187.3	189.3	191.0	192.4	193.2	195.5	195.0	r197.8	198.1	198.1	198.7	200.9
06-4	Fats and oils, inedible	295.6	310.7	289.7	295.7	312.7	312.1	303.1	290.9	306.6	285.6	277.7	282.5	280.4	272.8
06-5	Agricultural chemicals and chemical products	284.8	267.6	271.6	275.8	277.8	279.1	288.9	288.9	293.4	r292.6	292.3	295.4	294.5	295.8
06-6	Plastic resins and materials	289.2	274.7	276.1	279.4	285.1	287.9	290.0	295.9	297.5	r296.8	297.6	290.9	297.0	293.8
06-7	Other chemicals and allied products	254.4	244.4	245.1	248.3	255.3	254.8	256.3	254.8	257.3	r257.4	258.0	260.9	260.2	262.8
07	Rubber and plastic products	232.8	224.8	226.4	228.4	230.8	231.8	233.4	232.1	234.1	r235.7	237.7	238.7	239.0	239.5
07-1	Rubber and rubber products	256.7	246.2	248.5	252.1	253.0	254.4	256.8	254.7	256.9	r260.3	264.3	266.2	266.4	267.3
07-11	Crude rubber	281.7	279.1	281.9	281.2	279.8	283.2	285.2	284.2	284.7	r283.1	280.5	278.9	280.7	281.8
07-12	Tires and tubes	250.9	240.9	243.5	248.6	250.7	251.2	251.2	246.8	249.9	258.5	257.7	257.5	255.9	258.6
07-13	Miscellaneous rubber products	252.4	238.6	240.4	243.5	243.8	245.7	250.9	251.4	253.1	r253.9	263.4	269.5	271.4	272.6
07-2	Plastic products (6/78 = 100)	128.4	125.0	125.5	126.0	128.2	128.6	129.1	128.7	129.8	r129.9	130.0	130.1	130.3	130.5
08	Lumber and wood products	292.8	296.5	294.7	294.4	299.4	298.4	298.1	296.5	294.5	r289.3	294.4	283.0	285.2	285.7
08-1	Lumber	325.2	331.3	326.9	326.2	333.6	336.3	335.8	332.4	329.9	r320.2	312.0	308.8	309.7	310.6
08-2	Millwork	273.4	273.6	273.8	275.7	276.5	274.8	272.2	273.6	272.3	r271.4	271.2	272.0	273.6	276.8
08-3	Plywood	245.7	251.1	251.2	248.8	256.0	248.3	251.5	247.8	245.6	r240.8	234.4	233.0	239.2	236.8
08-4	Other wood products	239.2	238.5	238.1	236.9	238.3	239.2	239.8	240.7	239.8	r240.5	240.0	239.7	239.5	239.4

See footnotes at end of table.

27. Continued—Producer Price Indexes, by commodity groupings

[1967=100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1980	1981 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[1]	Oct.	Nov.	Dec.	1982 Jan.
	INDUSTRIAL COMMODITIES—Continued														
09	Pulp, paper, and allied products	273.7	264.4	267.2	269.0	271.4	272.1	272.9	274.9	275.9	r277.8	279.1	280.2	280.7	283.9
09-1	Pulp, paper, and products, excluding building paper and board	271.0	260.9	264.5	266.8	268.6	269.9	271.2	272.3	273.7	r274.8	276.5	276.3	276.2	276.1
09-11	Woodpulp	398.1	390.2	390.2	390.2	394.1	394.2	394.2	394.2	394.2	r394.2	404.7	417.0	417.0	412.8
09-12	Wastepaper	175.7	191.5	186.1	185.1	184.2	182.7	182.9	182.1	182.1	178.5	165.1	144.5	143.4	135.2
09-13	Paper	280.0	271.7	272.9	273.8	275.2	275.9	278.5	279.7	282.1	r285.9	286.6	287.1	287.5	288.8
09-14	Paperboard	258.2	250.2	252.8	255.1	255.7	258.8	259.2	259.4	260.6	r261.6	262.6	261.6	259.3	259.7
09-15	Converted paper and paperboard products	259.0	246.9	252.1	255.3	257.3	258.8	258.9	261.2	262.4	r262.8	263.9	263.9	263.9	263.9
09-2	Building paper and board	231.3	219.7	225.7	227.9	232.5	237.3	237.4	235.5	234.2	r234.2	232.5	231.5	227.7	233.2
10	Metals and metal products	300.4	294.0	294.0	296.4	298.8	299.1	298.4	302.0	304.1	r304.9	305.5	303.9	303.6	305.1
10-1	Iron and steel	333.8	323.0	323.2	328.2	331.0	330.4	330.1	338.8	339.9	r339.8	341.5	339.8	339.7	343.1
10-13	Steel mill products	337.6	322.6	322.9	328.7	331.8	331.8	332.2	344.9	344.9	345.3	348.7	348.6	348.9	350.8
10-2	Nonferrous metals	286.0	292.1	287.4	286.5	288.4	287.7	284.5	282.8	287.3	r289.4	286.8	281.4	277.5	275.4
10-3	Metal containers	315.9	311.4	313.8	314.1	314.1	314.1	314.1	315.2	318.7	r318.8	319.0	318.2	318.2	323.4
10-4	Hardware	262.4	254.5	258.0	258.6	258.5	259.4	259.7	263.8	265.3	r267.8	267.5	268.9	269.4	271.3
10-5	Plumbing fixtures and brass fittings	267.4	256.7	259.2	259.5	265.3	266.2	268.9	270.9	271.2	r271.6	272.8	273.0	273.9	274.4
10-6	Heating equipment	223.9	216.6	217.6	219.5	219.8	222.3	223.5	226.4	227.9	r228.5	228.4	227.6	229.2	232.2
10-7	Fabricated structural metal products	295.4	283.1	285.4	289.4	293.1	294.0	295.0	297.9	299.3	r300.0	302.2	302.2	302.7	303.1
10-8	Miscellaneous metal products	270.8	260.5	263.1	264.7	267.2	269.7	269.4	272.0	272.9	r273.7	276.2	277.5	281.4	284.3
11	Machinery and equipment	263.1	253.3	255.3	257.5	259.6	260.7	262.1	264.8	266.2	r268.1	268.8	270.0	271.6	273.5
11-1	Agricultural machinery and equipment	287.7	276.4	278.4	279.8	282.5	285.7	288.8	288.1	290.3	r292.8	292.1	298.7	301.3	302.2
11-2	Construction machinery and equipment	320.8	305.9	310.0	312.8	317.0	318.4	320.1	323.8	325.0	r326.5	329.0	329.6	332.0	337.0
11-3	Metalworking machinery and equipment	301.2	289.7	291.6	294.9	296.7	299.9	301.3	302.9	303.5	305.3	306.5	307.5	312.2	313.7
11-4	General purpose machinery and equipment	288.5	278.6	280.2	282.3	284.4	285.9	287.0	290.6	292.3	r293.9	294.4	295.6	297.2	299.6
11-6	Special industry machinery and equipment	308.0	295.6	299.2	301.0	303.2	307.2	308.8	311.0	310.3	r312.8	314.7	315.2	316.5	319.5
11-7	Electrical machinery and equipment	220.1	211.9	213.7	216.0	217.4	217.5	219.2	221.1	222.8	r224.2	225.0	226.0	226.9	228.3
11-9	Miscellaneous machinery	252.3	243.3	245.2	247.0	248.5	248.8	250.1	254.0	256.0	r258.5	258.3	259.1	259.8	261.3
12	Furniture and household durables	198.4	194.0	195.2	195.8	196.4	197.4	197.3	199.5	199.6	r201.0	201.4	201.6	202.2	202.7
12-1	Household furniture	219.4	212.9	213.8	214.5	216.5	216.4	218.6	220.0	220.7	r222.2	224.1	225.4	227.0	228.2
12-2	Commercial furniture	257.6	246.7	251.6	253.4	254.5	257.7	257.9	258.7	259.1	r261.6	262.5	263.2	264.1	266.6
12-3	Floor coverings	178.6	172.3	171.9	174.1	175.3	179.5	180.7	182.8	181.9	r181.7	181.5	180.8	180.7	179.6
12-4	Household appliances	186.9	182.2	183.5	184.2	185.1	185.5	186.1	188.8	189.1	r190.1	189.5	189.7	190.2	192.0
12-5	Home electronic equipment	89.1	91.1	91.3	91.4	90.9	90.8	88.7	87.4	87.6	87.8	88.3	88.0	87.8	87.5
12-6	Other household durable goods	280.8	278.9	280.8	278.1	275.3	276.7	276.4	282.1	280.9	r285.8	285.3	284.6	285.5	282.8
13	Nonmetallic mineral products	308.5	296.6	297.9	300.9	310.8	312.0	313.6	314.3	314.1	r313.2	313.1	313.5	313.6	315.1
13-11	Flat glass	212.9	203.9	204.3	204.8	210.2	210.2	210.3	218.3	218.3	r218.3	218.5	218.5	218.5	216.0
13-2	Concrete ingredients	296.3	290.0	291.4	292.6	297.4	297.5	297.5	297.7	298.0	r298.5	298.3	298.3	298.5	305.9
13-3	Concrete products	291.2	286.2	286.6	286.9	288.9	291.2	293.5	293.4	293.4	292.9	293.3	293.2	293.5	294.8
13-4	Structural clay products excluding refractories	249.7	238.5	239.8	244.6	246.0	250.1	250.7	250.9	250.9	r255.3	255.6	255.9	257.1	257.1
13-5	Refractories	302.5	282.6	293.5	296.1	296.4	304.0	307.1	307.1	307.1	r307.1	308.8	308.8	308.8	315.4
13-6	Asphalt roofing	407.0	394.8	389.5	390.5	415.9	407.4	428.5	421.9	420.9	r401.6	401.3	408.9	404.2	398.7
13-7	Gypsum products	256.2	250.6	257.3	257.6	256.8	261.1	260.7	259.7	255.3	252.9	252.4	251.3	249.7	250.4
13-8	Glass containers	328.5	311.4	311.4	311.4	326.7	335.3	335.3	335.5	335.5	r335.5	334.8	334.8	334.8	334.7
13-9	Other nonmetallic minerals	463.9	418.7	424.7	441.7	479.1	477.6	476.8	476.2	475.3	r474.3	473.2	473.5	475.4	474.9
14	Transportation equipment (12/68 = 100)	235.4	227.4	229.1	228.1	231.9	233.6	234.3	235.0	235.9	r231.8	244.4	246.2	246.7	248.3
14-1	Motor vehicles and equipment	237.5	229.0	230.9	229.5	233.9	236.0	236.7	237.4	238.4	r232.8	247.5	248.6	249.2	250.4
14-4	Railroad equipment	338.2	332.5	332.5	333.9	335.7	331.2	331.4	336.1	338.7	r338.7	345.0	347.5	348.3	352.4
15	Miscellaneous products	265.6	264.3	264.9	264.0	266.0	266.9	266.3	263.2	262.6	r267.0	268.0	267.2	267.3	268.4
15-1	Toys, sporting goods, small arms, ammunition	212.2	208.4	210.5	211.1	211.3	211.4	211.2	213.2	212.7	r213.6	213.7	213.4	213.8	219.3
15-2	Tobacco products	268.3	254.8	256.1	256.3	268.7	268.7	268.7	268.8	268.8	r274.5	278.0	278.0	277.9	277.9
15-3	Notions	259.6	227.2	247.3	247.3	248.4	267.8	268.0	267.5	267.7	267.8	267.3	269.7	266.7	270.5
15-4	Photographic equipment and supplies	210.1	207.4	209.6	211.2	212.4	212.5	212.5	211.4	207.1	r208.7	209.1	209.1	209.5	210.3
15-5	Mobile homes (12/74 = 100)	(2)	153.0	153.1	155.0	(2)	(2)	(2)	158.1	158.3	r158.7	158.6	158.8	159.0	159.1
15-9	Other miscellaneous products	346.9	363.3	358.1	351.3	349.0	349.4	345.9	333.1	334.6	r345.5	346.7	343.4	343.2	341.9

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[1] Data for September 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

[3] Prices for natural gas are lagged 1 month.

[4] Includes only domestic production.

[5] Most prices for refined petroleum products are lagged 1 month.

[6] Some prices for industrial chemicals are lagged 1 month.

r = revised.

28. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1981	1981												1982
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[1]	Oct.	Nov.	Dec.	Jan.
All commodities — less farm products	295.7	c285.6	288.8	291.9	295.0	296.1	296.7	298.0	298.7	r298.5	299.4	299.3	300.0	301.9
All foods	251.9	c255.6	253.7	253.4	251.4	250.3	252.2	255.2	253.7	251.7	249.4	247.8	248.0	252.0
Processed foods	252.2	c256.8	253.9	252.3	250.3	250.5	253.1	256.0	255.0	252.8	250.6	248.2	248.9	251.0
Industrial commodities less fuels	....	c255.8	257.2	258.6	261.8	262.9	263.5	265.0	266.1	r266.4	268.6	268.9	269.4	270.9
Selected textile mill products (Dec. 1975 = 100)	135.9	131.8	132.5	132.2	134.5	135.7	135.9	136.8	137.2	r138.1	138.5	138.6	138.3	139.3
Hosiery	134.3	129.5	130.3	130.5	134.2	134.6	135.7	135.8	136.3	135.5	136.5	136.5	136.7	137.0
Underwear and nightwear	203.5	199.2	200.9	202.0	202.1	202.3	203.5	204.7	204.7	r204.7	205.0	206.0	206.6	212.4
Chemicals and allied products, including synthetic rubber and fibers and yarns	278.6	264.8	268.3	271.0	276.1	279.0	281.2	282.3	284.0	284.4	284.2	283.8	284.0	284.9
Pharmaceutical preparations	186.8	177.1	179.7	182.1	184.0	185.7	186.6	189.0	188.4	r191.6	192.7	192.4	193.0	195.5
Lumber and wood products, excluding millwork	303.1	c309.0	306.0	304.8	312.3	311.5	312.2	308.7	306.2	r298.0	290.3	287.7	290.4	290.2
Special metals and metal products	279.4	271.8	272.7	273.5	276.8	277.9	277.9	280.2	281.9	280.1	286.6	286.4	286.6	288.0
Fabricated metal products	280.0	c270.0	272.5	274.7	277.0	278.5	279.0	281.7	283.1	r283.9	285.6	286.2	287.9	290.0
Copper and copper products	204.0	207.4	205.0	204.8	207.7	206.6	203.7	202.5	206.2	r205.1	203.8	199.3	195.9	195.1
Machinery and motive products	256.7	c247.5	249.4	250.2	253.1	254.4	255.6	257.4	258.6	r257.7	264.0	265.5	266.7	268.5
Machinery and equipment, except electrical	288.3	c277.5	279.7	281.9	284.3	285.9	287.3	290.4	291.7	r293.8	294.4	295.8	297.8	300.1
Agricultural machinery, including tractors	296.2	285.0	287.3	288.3	289.6	293.7	294.8	295.6	298.2	r301.6	300.4	309.1	312.4	313.7
Metalworking machinery	329.4	c319.2	320.5	323.5	325.9	327.1	328.3	330.1	331.4	r333.9	335.6	338.1	339.8	342.1
Numerically controlled machine tools (Dec. 1971 = 100)	239.4	234.6	235.0	235.7	236.7	237.3	241.4	241.7	241.8	r241.8	242.1	242.5	242.3	240.5
Total tractors	324.0	305.8	311.1	311.8	316.8	322.0	322.5	325.5	327.8	r330.7	332.9	340.4	340.4	346.2
Agricultural machinery and equipment less parts	289.0	278.0	280.2	281.5	283.2	286.7	287.9	288.6	291.1	r294.0	293.1	300.6	303.9	305.3
Farm and garden tractors less parts	298.9	284.4	287.2	287.6	289.3	297.7	298.0	298.0	301.4	r305.5	305.0	316.5	316.5	318.5
Agricultural machinery excluding tractors less parts	294.4	285.7	287.7	289.1	290.2	290.8	292.5	293.9	295.8	r298.7	297.0	303.3	309.3	310.0
Industrial valves	314.8	300.7	305.5	310.1	314.0	314.3	315.3	317.5	319.8	r322.7	319.0	320.0	321.9	325.2
Industrial fittings	302.1	298.6	298.0	298.9	302.7	303.0	303.0	303.0	303.0	304.3	304.1	304.1	304.1	304.1
Construction materials	283.0	c276.6	277.2	279.0	283.9	284.2	285.0	285.7	285.5	284.4	284.5	284.1	285.1	286.4

[1] Data for September 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.
c = corrected.

29. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1981	1981												1982
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[1]	Oct.	Nov.	Dec.	Jan.
Total durable goods	269.8	262.7	263.8	264.9	267.8	268.6	269.1	270.8	271.9	r271.8	274.9	275.2	275.9	277.4
Total nondurable goods	312.4	302.6	306.8	310.9	314.2	314.8	315.7	316.8	316.2	r315.0	312.7	311.5	311.8	314.7
Total manufactures	285.9	277.3	279.3	282.3	285.3	286.2	286.9	288.0	288.6	r288.3	289.7	289.6	290.0	291.8
Durable	269.6	262.3	263.4	264.4	267.2	268.2	268.9	270.6	271.7	r271.7	274.9	275.5	276.3	277.8
Nondurable	303.6	293.5	298.4	301.7	304.9	305.7	306.4	306.9	306.9	r306.3	305.4	304.6	304.5	306.8
Total raw or slightly processed goods	330.7	322.9	330.3	331.2	334.6	334.2	335.4	337.9	335.8	332.7	326.2	323.2	323.8	329.0
Durable	271.4	275.9	275.5	281.7	286.0	280.4	272.4	271.2	275.9	r270.4	264.3	253.8	248.4	254.4
Nondurable	334.0	325.3	333.3	333.8	337.1	337.1	338.9	341.8	339.1	r338.3	329.7	327.3	328.3	333.4

[1] Data for September 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

30. Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981												1982
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[1]	Oct.	Nov.	Dec.	Jan.
	MINING														
1011	Iron ores (12/75 = 100)	167.3	155.8	168.1	168.1	168.1	168.1	168.1	168.1	168.1	168.1	168.1	168.1	171.3	171.3
1092	Mercury ores (12/75 = 100)	346.0	297.9	324.5	335.4	354.1	347.9	352.0	358.3	365.4	364.5	354.1	354.1	343.7	347.9
1211	Bituminous coal and lignite	493.9	476.1	478.1	478.5	483.5	484.5	488.4	502.1	503.4	r506.0	506.6	508.2	510.7	521.3
1311	Crude petroleum and natural gas	898.8	786.5	867.9	901.7	906.6	919.7	713.7	911.5	900.3	r913.6	901.0	907.4	922.6	917.6
1442	Construction sand and gravel	277.3	270.1	272.3	275.2	278.0	278.4	278.4	278.4	278.2	r279.2	279.6	279.6	280.4	287.0
1455	Kaolin and ball clay (6/76 = 100)	138.7	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	143.4	143.4	143.4	147.1
	MANUFACTURING														
2011	Meatpacking plants	243.1	244.7	237.2	236.1	237.8	243.6	245.9	252.6	250.9	r252.7	[illegible]	236.9	234.5	236.6
2013	Sausages and other prepared meats	241.3	235.3	232.9	230.4	227.5	230.4	238.1	248.0	254.0	r253.9	252.0	248.6	248.7	245.7
2016	Poultry dressing plants	192.0	201.9	208.3	203.9	186.7	196.2	198.3	203.6	201.2	188.8	175.5	172.8	168.7	NA
2021	Creamery butter	274.8	273.6	273.5	273.6	273.4	273.4	273.5	273.8	273.7	275.0	279.2	279.5	275.0	275.0

See footnotes at end of table.

30. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[1]	Oct.	Nov.	Dec.	1982 Jan.
	MANUFACTURING—Continued														
2022	Cheese, natural and processed (12/72 = 100)	215.8	215.9	215.6	215.7	216.2	216.2	218.1	213.8	214.5	[1]215.0	215.6	215.9	217.1	218.6
2024	Ice cream and frozen desserts (12/72 = 100)	211.9	210.1	210.6	210.6	211.4	212.4	212.4	212.7	212.7	212.7	212.5	212.5	212.8	212.8
2033	Canned fruits and vegetables	248.5	233.3	237.4	241.5	244.0	245.9	248.9	251.6	252.9	[1]254.3	258.1	255.6	258.8	258.6
2034	Dehydrated food products (12/73 = 100)	177.6	174.1	171.3	172.9	174.2	175.3	175.0	180.5	178.7	183.4	182.3	181.6	182.1	184.0
2041	Flour mills (12/71 = 100)	195.9	203.8	198.4	195.1	201.5	199.4	199.3	196.5	191.0	[1]195.3	190.6	191.5	189.3	191.4
2044	Rice milling	277.2	289.6	289.6	298.0	300.9	300.3	300.3	297.4	284.3	268.2	247.3	235.4	215.1	205.9
2048	Prepared foods, n.e.c. (12/75 = 100)	124.6	132.6	129.3	128.6	128.5	129.8	127.5	125.9	124.8	[1]119.6	117.5	116.4	116.4	116.6
2061	Raw cane sugar	273.5	418.0	367.1	318.8	275.7	224.8	263.3	272.2	254.6	212.3	219.9	224.3	230.8	247.6
2063	Beet sugar	320.6	414.5	386.1	370.7	360.5	334.4	339.7	274.1	287.5	[1]270.7	272.2	262.1	272.4	292.5
2067	Chewing gum	309.8	323.0	323.0	323.1	323.1	303.1	303.1	303.1	303.2	303.2	303.2	303.2	303.2	303.3
2074	Cottonseed oil mills	199.0	221.2	193.7	204.4	218.4	216.6	212.3	212.0	206.0	182.3	172.0	167.2	182.3	184.9
2075	Soybean oil mills	245.8	272.0	252.5	253.2	259.1	258.1	248.4	253.7	245.8	[1]234.2	230.1	221.1	221.5	222.6
2077	Animal and marine fats and oils	288.1	310.8	287.2	284.2	301.7	304.3	291.3	288.8	294.1	[1]281.2	274.1	272.3	266.6	260.3
2083	Malt	282.5	286.1	286.1	286.1	286.1	286.1	286.1	286.1	286.1	275.4	275.4	275.4	275.4	267.1
2085	Distilled liquor, except brandy (12/75 = 100)	134.7	129.2	133.9	133.9	133.9	134.3	134.6	134.6	135.5	135.5	135.5	137.9	137.9	140.1
2091	Canned and cured seafoods (12/73 = 100)	187.8	187.3	187.1	187.6	187.7	187.3	187.5	187.4	188.4	188.8	188.2	188.3	188.5	187.2
2092	Fresh or frozen packaged fish	368.6	374.9	366.7	385.2	383.5	378.2	375.5	367.6	347.1	[1]353.5	358.4	362.3	371.1	398.3
2095	Roasted coffee (12/72 = 100)	238.0	238.2	238.3	238.3	238.5	238.6	238.6	236.4	235.7	[1]237.3	238.6	239.4	240.4	245.0
2098	Macaroni and spaghetti	252.0	243.6	243.6	243.6	243.6	246.6	246.6	259.5	259.5	259.5	259.5	259.5	259.5	259.5
2111	Cigarettes	277.7	263.6	264.1	264.2	278.3	278.3	278.3	278.3	278.3	294.2	298.4	298.4	298.4	298.4
2121	Cigars	169.1	165.1	165.3	167.0	168.5	168.5	168.5	169.7	169.7	[1]174.5	171.6	171.6	171.6	171.6
2131	Chewing and smoking tobacco	320.9	298.7	320.7	320.7	320.8	320.8	320.8	321.0	321.3	[1]325.3	327.6	327.6	326.0	326.0
2211	Weaving mills, cotton (12/72 = 100)	234.1	227.9	230.9	232.3	235.3	233.5	234.3	234.7	237.4	[1]236.0	236.1	236.3	235.2	227.5
2221	Weaving mills, synthetic (12/77 = 100)	136.6	131.9	132.3	133.3	134.9	135.7	137.1	138.0	139.3	[1]138.5	139.1	139.2	139.5	139.8
2251	Women's hosiery, except socks (12/75 = 100)	113.5	109.1	109.2	108.9	114.1	114.2	115.6	115.5	115.0	[1]115.0	115.2	115.2	115.3	115.6
2254	Knit underwear mills	210.2	205.6	208.7	208.7	209.8	210.0	210.0	210.7	210.8	[1]210.9	210.8	212.7	212.9	220.7
2257	Circular knit fabric mills (6/76 = 100)	110.8	109.3	108.6	109.1	110.8	110.5	110.4	111.0	112.0	[1]111.9	112.3	112.1	111.7	111.8
2261	Finishing plants, cotton (6/76 = 100)	144.8	142.4	144.5	144.6	146.9	147.0	146.2	148.3	148.2	[1]145.4	144.9	143.4	141.4	140.5
2262	Finishing plants, synthetics, silk (6/76 = 100)	126.5	121.7	123.1	124.3	125.2	126.6	126.6	127.1	127.8	129.0	129.0	129.1	128.6	129.3
2272	Tufted carpets and rugs	154.3	148.1	147.8	150.2	151.5	154.5	155.6	158.3	157.4	[1]157.3	157.9	156.4	156.3	155.1
2281	Yarn mills, except wool (12/71 = 100)	221.8	216.9	218.1	220.7	220.9	224.1	225.8	225.1	225.4	[1]223.8	222.3	220.1	217.9	216.0
2282	Throwing and winding mills (6/76 = 100)	138.6	123.2	123.2	131.3	131.5	138.1	139.3	142.7	146.8	[1]148.0	148.0	145.5	146.0	135.3
2284	Thread mills (6/76 = 100)	151.4	144.1	144.3	148.4	150.8	150.9	151.1	151.1	151.1	154.8	157.0	158.9	156.8	156.8
2298	Cordage and twine (12/77 = 100)	134.8	129.3	129.3	130.9	132.7	134.3	134.3	134.3	134.3	139.3	139.3	139.3	140.7	141.0
2311	Men's and boys' suits and coats	223.9	218.2	219.7	220.1	220.3	220.4	224.6	225.9	226.2	[1]226.5	227.0	227.1	230.7	230.7
2321	Men's and boys' shirts and nightwear	208.8	206.3	207.3	207.1	207.6	207.1	207.5	210.5	210.6	[1]211.5	210.2	210.4	211.2	190.9
2322	Men's and boys' underwear	230.6	224.9	229.1	231.0	231.0	231.0	230.7	230.8	230.8	[1]230.8	230.8	232.9	233.0	237.6
2323	Men's and boys' neckwear (12/75 = 100)	114.6	115.4	115.4	115.4	115.4	115.4	115.4	113.9	113.9	113.9	113.9	113.9	113.9	115.3
2327	Men's and boys' separate trousers	186.1	185.3	185.3	185.3	186.0	186.1	186.1	186.4	186.4	186.4	186.6	186.6	186.6	187.0
2328	Men's and boys' work clothing	248.4	242.2	242.2	242.3	247.0	248.2	248.3	250.8	251.1	[1]251.2	252.4	252.5	252.5	251.9
2331	Women's and misses' blouses and waists (6/78 = 100)	119.8	116.3	116.3	116.4	118.3	118.4	118.5	121.0	121.2	[1]121.3	123.6	123.8	123.9	123.8
2335	Women's and misses' dresses (12/77 = 100)	121.1	116.5	116.9	118.5	118.4	122.3	122.5	123.0	124.3	[1]123.5	122.5	123.6	122.5	122.6
2341	Women's and children's underwear (12/72 = 100)	169.9	165.5	167.5	168.8	169.0	169.2	170.5	170.6	170.6	[1]170.6	171.2	172.2	172.2	175.3
2342	Brassieres and allied garments (12/75 = 100)	136.8	131.7	132.8	134.9	135.0	135.0	136.9	138.8	138.6	[1]138.8	139.2	139.3	140.5	145.5
2361	Children's dresses and blouses (12/77 = 100)	120.3	118.1	118.9	119.2	120.7	120.5	120.5	121.6	121.7	[1]121.7	120.9	121.3	119.6	122.0
2381	Fabric dress and work gloves	289.3	284.9	289.1	289.1	289.1	292.1	292.1	289.2	289.2	289.2	289.2	289.2	289.2	293.8
2394	Canvas and related products (12/77 = 100)	132.1	126.8	126.8	127.8	129.3	130.0	130.1	130.1	133.1	[1]134.6	138.1	138.1	140.3	145.5
2396	Automotive and apparel trimmings (12/77 = 100)	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
2421	Sawmills and planing mills (12/71 = 100)	228.2	232.3	229.6	228.6	233.3	234.8	234.8	233.5	231.2	[1]225.2	219.7	217.7	218.3	218.5
2436	Softwood veneer and plywood (12/75 = 100)	142.0	149.8	149.3	147.2	152.8	145.7	148.1	143.8	138.6	[1]135.4	129.4	128.6	134.1	132.0
2439	Structural wood members, n.e.c. (12/75 = 100)	158.6	157.1	157.0	157.1	158.3	158.2	158.2	157.6	156.9	[1]156.6	154.6	154.7	153.0	153.2
2448	Wood pallets and skids (12/75 = 100)	152.5	153.8	152.8	152.7	153.1	153.1	153.0	153.1	152.9	[1]152.8	152.0	150.7	150.2	148.8
2451	Mobile homes (12/74 = 100)	156.8	153.1	153.2	155.0	155.8	155.9	156.1	158.1	158.3	[1]158.7	159.1	159.0	160.1	160.2
2492	Particleboard (12/75 = 100)	172.8	163.9	170.3	172.3	180.9	184.5	182.3	179.6	173.6	[1]170.5	166.8	165.7	164.7	171.3
2511	Wood household furniture (12/71 = 100)	197.4	191.2	192.1	193.3	195.4	198.2	197.5	198.6	199.2	[1]200.1	201.6	200.9	201.9	203.3
2512	Upholstered household furniture (12/71 = 100)	174.9	168.8	170.1	170.1	171.8	169.7	173.9	175.1	175.1	[1]175.3	178.3	182.3	184.9	184.1
2515	Mattresses and bedsprings	193.7	186.3	188.3	189.5	190.5	190.4	190.5	191.3	184	[1]195.2	199.4	201.8	202.2	207.5
2521	Wood office furniture	254.6	244.1	250.4	253.5	254.5	255.4	254.6	254.7	254.7	[1]257.1	258.1	258.0	258.6	262.9
2611	Pulp mills (12/73 = 100)	253.2	246.9	246.9	246.9	251.2	251.3	251.3	251.3	251.3	[1]251.3	257.2	265.5	265.5	269.9
2621	Paper mills, except building (12/74 = 100)	156.3	152.0	152.6	153.3	153.9	154.3	155.7	157.0	157.4	[1]158.8	158.8	158.6	158.8	161.8
2631	Paperboard mills (12/74 = 100)	151.8	148.2	149.2	150.8	151.0	152.1	152.3	151.7	152.4	[1]153.7	153.7	153.8	152.7	152.6
2647	Sanitary paper products	343.8	338.3	342.5	343.0	343.2	344.3	344.1	344.2	344.3	[1]344.3	345.3	345.3	345.8	345.6
2654	Sanitary food containers	245.3	232.0	235.2	237.9	239.2	239.2	242.2	246.0	252.9	[1]253.2	254.8	254.7	254.7	255.3
2655	Fiber cans, drums, and similar products (12/75 = 100)	163.0	157.7	160.6	160.7	160.8	160.9	160.9	163.2	163.2	163.2	167.8	167.8	168.1	175.3
2812	Alkalies and chlorine (12/73 = 100)	305.3	277.9	290.2	295.6	294.4	302.2	309.3	306.2	310.4	[1]316.0	314.5	317.0	323.9	329.3
2821	Plastics materials and resins (6/76 = 100)	150.8	142.4	143.5	144.8	148.1	149.7	150.7	155.0	155.6	[1]156.0	155.5	152.3	155.7	154.2
2822	Synthetic rubber	292.9	275.9	290.7	283.9	298.1	293.3	296.3	297.3	299.4	[1]299.3	299.9	301.1	302.7	304.0
2824	Organic fiber, noncellulosic	155.7	144.0	144.7	147.4	149.9	156.2	158.6	159.2	160.3	[1]160.6	163.6	162.5	161.9	161.0
2873	Nitrogenous fertilizers (12/75 = 100)	142.7	135.0	138.1	141.7	147.1	148.5	143.4	143.5	143.9	[1]142.1	143.1	144.4	141.3	142.4
2874	Phosphatic fertilizers	254.1	247.9	248.2	253.5	251.6	251.5	250.9	249.4	260.0	[1]259.4	259.0	258.9	259.0	261.4
2875	Fertilizers, mixing only	270.2	255.8	266.8	270.0	271.1	273.6	273.1	275.3	273.0	[1]272.0	271.2	271.8	268.5	268.1
2892	Explosives	312.0	298.8	295.4	303.9	324.8	314.5	312.6	315.7	319.8	[1]316.5	318.3	316.4	318.0	315.6
2911	Petroleum refining (6/76 = 100)	294.4	268.3	279.5	298.0	306.0	304.1	302.6	299.1	297.5	295.8	294.5	293.2	293.2	293.5
2951	Paving mixtures and blocks (12/75 = 100)	184.3	183.1	185.4	189.1	198.1	198.6	198.4	197.1	198.3	[1]198.0	196.1	198.4	198.8	197.2
2952	Asphalt felts and coatings (12/75 = 100)	178.7	172.4	170.0	169.7	180.4	176.3	185.7	182.8	182.3	[1]174.3	174.2	177.6	175.5	173.5
3011	Tires and inner tubes (12/73 = 100)	215.9	207.0	208.3	213.8	215.5	216.2	216.2	213.1	215.5	[1]220.6	221.3	221.2	221.5	222.0

30. Continued—Producer Price Indexes for the output of selected SIC industries

[1967=100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981												1982
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[1]	Oct.	Nov.	Dec.	Jan.
3021	Rubber and plastic footwear (12/71 = 100)	184.4	182.8	183.4	183.6	183.6	184.0	184.1	185.0	185.4	r185.3	185.0	185.0	185.2	186.1
3031	Reclaimed rubber (12/73 =100)	193.4	190.4	190.4	187.6	187.7	187.7	187.7	192.9	200.3	r200.3	198.1	198.1	198.1	198.1
3079	Miscellaneous plastic products (6/78 = 100)	128.8	125.4	125.4	128.3	128.7	129.1	129.6	129.2	130.2	r130.3	130.5	130.5	130.8	130.9
3111	Leather tanning and finishing (12/77 = 100)	150.6	157.0	145.5	151.4	158.6	154.7	150.7	151.3	148.5	r148.3	147.5	146.9	147.3	150.7
3143	Men's footwear, except athletic (12/75 = 100)	169.1	164.8	166.5	167.6	168.7	168.9	169.6	170.7	171.4	r170.9	169.6	170.6	171.5	172.6
3144	Women's footwear, except athletic	217.8	217.8	220.2	218.7	218.7	219.3	218.5	218.9	217.8	r218.2	217.0	214.5	214.6	213.8
3171	Women's handbags and purses (12/75 = 100)	155.5	149.5	149.5	149.7	149.7	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4
3211	Flat glass (12/71 = 100)	175.6	167.1	167.5	168.1	174.5	174.5	174.6	180.0	180.0	r180.0	180.1	180.1	180.1	177.3
3221	Glass containers	329.4	311.4	311.4	311.4	326.6	335.2	335.2	335.4	335.4	r335.4	334.7	334.7	334.8	334.7
3241	Cement, hydraulic	328.5	324.3	324.3	324.4	332.4	332.3	331.0	331.6	331.6	r332.0	327.2	327.2	327.2	336.4
3251	Brick and structural clay tile	296.9	286.6	288.1	295.3	296.0	297.4	298.5	298.9	298.9	r299.9	300.8	301.4	301.8	291.4
3253	Ceramic wall and floor tile (12/75 = 100)	132.5	127.1	127.1	127.1	129.6	132.1	132.1	132.1	132.1	r140.4	137.7	137.7	137.8	136.8
3255	Clay refractories	310.4	291.5	305.2	308.1	308.6	311.0	312.2	312.3	312.3	r312.5	315.7	317.0	317.1	327.0
3259	Structural clay products, n.e.c.	222.7	209.5	212.8	213.0	212.7	223.9	223.9	223.9	223.9	r227.5	232.2	232.2	237.0	196.4
3261	Vitreous plumbing fixtures	254.9	244.7	248.9	249.4	252.0	252.5	255.8	258.7	258.6	r258.0	258.9	258.3	260.1	261.1
3262	Vitreous china food utensils	335.0	327.4	327.4	329.0	329.2	336.6	336.6	336.6	336.6	336.8	336.8	344.7	344.7	347.7
3263	Fine earthenware food utensils	308.9	298.6	298.6	307.9	309.2	309.6	309.6	309.6	309.6	r313.8	313.3	314.4	314.4	314.5
3269	Pottery products, n.e.c. (12/75 = 100)	160.1	155.5	155.5	158.5	158.6	160.6	160.7	160.7	160.7	r161.8	161.7	163.6	163.6	164.2
3271	Concrete block and brick	270.4	264.1	265.0	263.2	267.4	271.2	271.2	271.2	274.0	274.2	274.0	274.5	275.3	274.8
3273	Ready-mixed concrete	298.7	294.8	295.4	296.0	298.5	299.4	301.7	300.7	300.0	r299.2	298.7	299.2	299.5	301.1
3274	Lime (12/75 = 100)	172.5	165.7	171.7	172.6	172.4	172.6	173.0	173.1	173.9	r173.7	173.9	173.8	174.0	179.1
3275	Gypsum products	257.3	259.9	257.6	257.9	257.1	261.4	260.9	261.8	258.9	r252.9	251.5	252.5	250.6	250.9
3291	Abrasive products (12/71 = 100)	232.5	222.8	221.7	223.1	232.7	233.2	234.1	235.0	235.1	r237.3	237.5	239.6	240.0	239.9
3297	Nonclay refractories (12/74 = 100)	185.3	172.4	177.5	178.9	178.9	186.6	189.7	189.7	189.7	r189.7	189.8	190.2	190.2	191.1
3312	Blast furnaces and steel mills	342.8	328.7	328.9	334.0	336.7	337.3	338.2	350.1	350.0	350.3	353.1	352.9	353.2	354.9
3313	Electrometallurgical products (12/75 = 100)	121.8	119.9	120.0	120.0	120.8	120.6	120.7	121.2	121.5	121.4	125.4	125.4	125.3	125.3
3316	Cold finishing of steel shapes	316.2	302.8	303.1	306.1	308.2	308.2	309.5	325.0	325.7	326.2	326.4	326.4	326.7	327.0
3317	Steel pipes and tubes	341.5	315.5	316.3	326.1	333.1	334.1	336.3	348.2	350.6	r350.5	362.0	362.3	363.1	363.8
3321	Gray iron foundries (12/68 = 100)	299.5	295.2	296.1	295.6	297.0	298.4	298.4	298.8	299.9	r302.0	304.8	303.9	304.7	308.0
3333	Primary zinc	326.5	300.3	300.0	299.7	311.9	332.7	335.1	335.4	353.8	r355.9	332.9	337.5	327.3	308.0
3334	Primary aluminum	333.5	331.7	332.3	332.2	332.8	334.2	332.5	334.2	334.4	r333.6	335.8	332.5	332.8	332.4
3351	Copper rolling and drawing	212.4	218.7	215.3	211.8	213.1	212.6	210.6	209.4	212.9	r214.1	212.9	209.4	208.6	205.6
3353	Aluminum sheet, plate, and foil (12/75 = 100)	175.9	169.3	170.7	172.1	173.8	174.4	176.1	177.3	177.4	r178.0	180.7	179.9	180.9	181.5
3354	Aluminum extruded products (12/75 = 100)	180.1	176.8	177.1	177.3	180.6	180.7	180.8	181.2	181.3	181.2	181.3	181.4	181.1	180.7
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	159.1	155.3	157.1	157.2	157.3	157.4	157.3	157.2	157.2	r157.7	163.3	166.2	166.1	166.1
3411	Metal cans	305.3	302.1	303.0	304.7	304.7	304.7	304.7	305.5	306.7	r306.8	307.2	306.6	306.6	310.3
3425	Hand saws and saw blades (12/72 = 100)	201.3	195.4	196.3	198.0	198.1	200.2	200.2	204.1	204.2	r204.6	204.5	204.6	205.6	211.0
3431	Metal sanitary ware	265.0	256.0	258.4	258.5	262.8	264.8	265.2	269.2	269.7	r270.2	267.7	270.6	272.0	270.9
3465	Automotive stampings (12/75 = 100)	146.4	143.0	143.9	144.2	145.0	145.0	145.2	146.2	146.4	r146.9	147.7	149.7	153.7	154.6
3482	Small arms ammunition (12/75 = 100)	160.5	157.9	157.8	157.2	157.8	157.8	157.8	157.8	158.9	r158.9	165.3	165.3	165.3	173.2
3493	Steel springs, except wire	245.1	238.4	239.2	239.5	241.2	241.7	241.9	243.7	248.9	r252.4	249.6	253.8	254.3	256.4
3494	Valves and pipe fittings (12/71 = 100)	248.4	240.2	242.1	244.8	247.6	247.9	248.5	250.0	251.0	r252.7	251.4	251.9	253.8	255.8
3498	Fabricated pipe and fittings	361.4	335.7	335.7	338.5	358.8	359.9	361.6	364.6	370.0	r375.1	379.1	378.8	379.4	378.6
3519	Internal combustion engines, n.e.c.	311.0	298.2	299.4	302.6	306.0	306.2	307.2	312.0	314.2	r322.1	321.6	322.4	321.5	327.3
3531	Construction machinery (12/76 = 100)	157.0	150.0	151.4	152.6	154.4	155.3	156.9	158.9	158.5	r160.1	161.5	161.6	162.1	164.8
3532	Mining machinery (12/72 = 100)	282.3	272.5	273.5	276.2	279.5	280.0	280.8	282.7	285.3	r286.9	288.7	290.3	291.8	293.9
3533	Oilfield machinery and equipment	395.4	367.0	374.2	378.2	382.2	384.6	390.3	401.3	406.5	r411.3	413.3	418.3	420.1	427.1
3534	Elevators and moving stairways	253.5	250.3	250.3	250.3	251.2	251.2	251.2	252.1	252.8	254.6	257.1	259.9	261.4	268.0
3542	Machine tools, metal forming types (12/71 = 100)	306.4	297.5	298.0	301.9	303.0	304.5	305.7	307.6	309.5	312.0	312.3	312.3	313.0	313.5
3546	Power driven hand tools (12/76 = 100)	147.1	142.6	144.9	145.2	146.4	147.0	147.1	148.2	148.4	148.6	148.8	148.7	149.3	153.3
3552	Textile machinery (12/69 = 100)	243.4	235.7	236.0	240.0	240.4	241.2	244.4	246.2	245.4	r248.2	248.1	247.9	250.0	249.8
3553	Woodworking machinery (12/72 = 100)	224.5	222.5	223.1	224.7	225.5	219.1	219.7	224.0	225.4	r228.9	228.9	229.0	229.0	229.4
3576	Scales and balances, excluding laboratory	226.2	220.5	221.1	224.2	230.2	230.2	230.3	226.6	226.6	226.1	226.1	226.1	226.4	228.2
3592	Carburetors, pistons, rings, valves (6/76 = 100)	177.9	168.9	170.9	171.5	172.0	172.0	176.5	180.8	181.3	r182.1	185.2	187.0	187.1	185.0
3612	Transformers	209.7	194.9	197.1	204.3	206.0	207.8	209.6	210.7	212.8	r214.5	216.2	221.5	219.8	220.3
3623	Welding apparatus, electric (12/72 = 100)	227.2	218.9	220.9	222.1	224.3	225.9	227.2	228.3	229.6	r231.6	231.8	232.4	234.7	235.9
3631	Household cooking equipment (12/75 = 100)	141.1	140.1	141.0	141.1	140.5	140.7	141.0	140.5	141.5	r141.6	141.6	142.0	142.6	144.6
3632	Household refrigerators, freezers (6/76 = 100)	132.3	127.5	127.5	127.6	129.4	129.5	130.8	135.5	135.5	r136.4	136.4	136.4	136.4	138.6
3633	Household laundry equipment (12/73 = 100)	174.2	169.8	170.2	170.9	173.5	173.9	173.6	174.1	174.6	r177.2	178.8	178.5	178.8	179.8
3635	Household vacuum cleaners	158.8	159.1	158.3	158.5	158.4	158.5	158.6	158.6	158.8	r158.8	154.5	154.2	154.0	158.7
3636	Sewing machines (12/75 = 100)	146.6	130.3	130.3	131.9	131.8	153.8	153.8	153.8	153.8	r153.8	155.4	155.4	155.4	155.4
3641	Electric lamps	277.5	265.8	271.2	272.6	275.5	275.1	278.5	275.2	280.0	r283.1	285.9	286.6	282.7	282.0
3644	Noncurrent-carrying wiring devices (12/72 = 100)	250.4	233.1	236.3	240.6	242.6	242.8	251.5	253.3	253.8	r258.5	261.2	264.6	264.6	261.5
3646	Commercial lighting fixtures (12/75 = 100)	154.4	145.1	148.0	151.4	156.1	156.2	156.2	154.4	155.5	r157.6	156.8	157.3	158.4	159.9
3648	Lighting equipment, n.e.c. (12/75 = 100)	155.7	146.3	146.8	152.7	153.2	153.3	153.7	153.8	161.3	r161.7	161.4	162.0	162.7	162.7
3671	Electron tubes receiving type	309.7	284.3	284.4	285.0	285.0	285.1	312.5	327.4	327.5	327.5	327.6	327.8	342.3	371.8
3674	Semiconductors and related devices	90.4	91.1	90.8	91.3	91.2	90.6	90.3	89.2	89.2	r91.4	89.2	91.0	91.9	90.9
3675	Electronic capacitors (12/75 = 100)	170.3	170.3	171.1	173.2	168.7	168.5	171.2	171.4	178.8	r172.4	172.4	169.2	168.0	168.4
3676	Electronic resistors (12/75 = 100)	141.3	139.0	139.9	139.9	140.0	140.8	141.2	142.1	142.5	r142.7	142.6	142.8	142.5	142.9
3678	Electronic connectors (12/75 = 100)	154.8	152.2	153.5	154.5	154.4	153.7	154.3	155.0	155.8	r158.5	158.3	155.8	156.6	157.2
3692	Primary batteries, dry and wet	182.2	179.0	183.3	184.2	182.6	181.0	181.0	181.6	182.7	r182.7	182.7	182.7	182.7	182.1
3711	Motor vehicles and car bodies (12/75 = 100)	150.2	145.3	145.7	144.2	148.4	149.6	150.3	150.3	150.1	r143.4	158.3	158.5	158.9	159.5
3942	Dolls (12/75 = 100)	131.1	130.7	132.3	132.4	132.4	130.9	130.9	130.9	130.9	r130.9	130.6	130.6	130.6	134.9
3944	Games, toys, and children's vehicles	220.5	213.9	220.2	221.2	221.2	221.8	221.9	222.0	222.0	r222.2	220.1	220.5	221.5	225.8
3955	Carbon paper and inked ribbons (12/75 = 100)	138.6	133.0	136.4	136.4	136.9	136.9	140.4	140.4	140.6	140.6	140.6	140.6	140.7	140.3
3995	Burial caskets (6/78 = 100)	139.5	135.0	135.0	136.0	138.1	138.3	138.3	138.3	140.6	143.4	143.4	143.4	142.7	142.7
3996	Hard surface floor coverings (12/75 = 100)	151.8	148.6	148.6	148.7	151.5	151.5	151.5	153.3	153.6	153.7	153.7	153.7	153.7	155.1

[1] Data for September 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

PRODUCTIVITY DATA

PRODUCTIVITY DATA are compiled by the Bureau of Labor Statistics from establishment data and from estimates of compensation and output supplied by the U.S. Department of Commerce and the Federal Reserve Board.

Definitions

Output is the constant dollar gross domestic product produced in a given period. Indexes of **output per hour of labor input,** or labor productivity, measure the value of goods and services produced per hour of labor. **Compensation per hour** includes wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. The data also include an estimate of wages, salaries, and supplementary payments for the self-employed, except for nonfinancial corporations, in which there are no self-employed. **Real compensation per hour** is compensation per hour adjusted by the Consumer Price Index for All Urban Consumers.

Unit labor cost measures the labor compensation cost required to produce one unit of output and is derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from the current dollar gross domestic product and dividing by output. In these tables, **unit nonlabor costs** contain all the components of unit nonlabor payments except unit profits. **Unit profits** include corporate profits and inventory valuation adjustments per unit of output.

The **implicit price deflator** is derived by dividing the current dollar estimate of gross product by the constant dollar estimate, making the deflator, in effect, a price index for gross product of the sector reported.

The use of the term "man hours" to identify the labor component of productivity and costs, in tables 31 through 34, has been discontinued. **Hours of all persons** is now used to describe the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all-employee hour** is now used to describe labor productivity in nonfinancial corporations where there are no self-employed.

Notes on the data

In the private business sector and the nonfarm business sector, the basis for the output measure employed in the computation of output per hour is Gross Domestic Product rather than Gross National Product. Computation of hours includes estimates of nonfarm and farm proprietor hours.

Output data are supplied by the Bureau of Economic Analysis, U.S. Department of Commerce, and the Federal Reserve Board. Quarterly manufacturing output indexes are adjusted by the Bureau of Labor Statistics to annual estimates of output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are from the Bureau of Economic Analysis and the Bureau of Labor Statistics.

Beginning with the September 1976 issue of the *Review*, tables 31–34 were revised to reflect changeover to the new series—private business sector and nonfarm business sector—which differ from the previously published total private economy and nonfarm sector in that output imputed for owner-occupied dwellings and the household and institutions sectors, as well as the statistical discrepancy, are omitted. For a detailed explanation, see J. R. Norsworthy and L. J. Fulco, "New sector definitions for productivity series," *Monthly Labor Review*, October 1976, pages 40–42.

31. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950–81

[1977=100]

Item	1950	1955	1960	1965	1970	1974	1975	1976	1977	1978	1979	1980	1981
Private business sector:													
Output per hour of all persons	50.3	58.2	65.1	78.2	86.1	92.7	94.8	97.9	100.0	99.8	99.5	99.3	^{p}100.4
Compensation per hour	20.0	26.3	33.9	41.7	58.2	78.0	85.5	92.9	100.0	108.4	119.3	131.5	^{p}144.6
Real compensation per hour	50.4	58.6	69.4	80.0	90.8	95.9	96.3	98.8	100.0	100.7	99.6	96.7	^{p}96.4
Unit labor cost	39.8	45.2	52.1	53.3	67.6	84.2	90.2	94.8	100.0	108.6	119.9	132.4	^{p}144.1
Unit nonlabor payments	43.5	47.8	50.8	57.8	63.4	78.9	90.7	94.4	100.0	105.1	110.9	118.3	^{p}130.0
Implicit price deflator	41.0	46.1	51.7	54.8	66.2	82.4	90.4	94.7	100.0	107.4	116.9	127.6	^{p}139.3
Nonfarm business sector:													
Output per hour of all persons	56.2	62.7	68.2	80.4	86.7	93.1	95.0	98.1	100.0	99.8	99.1	98.8	^{p}99.7
Compensation per hour	21.8	28.3	35.6	42.8	58.6	78.4	86.0	93.0	100.0	108.5	119.0	130.8	^{p}143.9
Real compensation per hour	55.0	63.9	73.0	82.2	91.5	96.4	96.8	99.0	100.0	100.7	99.3	96.2	^{p}95.9
Unit labor cost	38.8	45.1	52.3	53.2	67.6	84.3	90.5	94.8	100.0	108.7	120.0	132.4	^{p}144.4
Unit nonlabor payments	42.8	47.9	50.5	58.2	64.0	76.1	88.9	94.0	100.0	103.6	108.5	117.6	^{p}129.8
Implicit price deflator	40.2	46.0	51.7	54.9	66.4	81.6	89.9	94.5	100.0	107.0	116.2	127.4	^{p}139.6
Nonfinancial corporations:													
Output per hour of all employees	(1)	(1)	66.3	79.9	85.4	91.3	94.4	97.4	100.0	100.4	100.4	101.0	(1)
Compensation per hour	(1)	(1)	38.3	43.0	58.3	77.6	85.5	92.5	100.0	108.2	118.7	130.7	(1)
Real compensation per hour	(1)	(1)	74.2	82.6	91.0	95.4	96.3	98.5	100.0	100.5	99.1	98.2	(1)
Unit labor cost	(1)	(1)	54.7	53.8	68.3	85.1	90.6	95.0	100.0	107.8	118.2	129.4	(1)
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	75.7	90.9	95.0	100.0	103.8	108.3	117.3	(1)
Implicit price deflator	(1)	(1)	54.7	58.2	66.5	81.8	90.7	95.0	100.0	108.4	114.8	125.2	(1)
Manufacturing:													
Output per hour of all persons	49.5	56.5	60.1	74.6	79.2	90.9	93.5	97.7	100.0	100.9	102.0	101.7	^{p}104.4
Compensation per hour	21.5	28.8	36.7	42.9	57.6	76.4	85.5	92.4	100.0	108.2	118.8	131.6	^{p}146.2
Real compensation per hour	54.1	65.2	75.1	82.3	88.9	93.9	96.3	98.3	100.0	100.5	99.2	^{r}96.8	^{p}97.4
Unit labor cost	43.4	51.0	61.1	57.4	72.7	84.1	91.4	94.6	100.0	107.3	116.5	129.4	^{p}140.0
Unit nonlabor payments	55.1	59.4	62.0	70.3	66.0	70.4	88.5	95.1	100.0	104.7	105.7	108.7	(1)
Implicit price deflator	46.8	53.4	61.3	61.2	70.7	80.1	90.6	94.7	100.0	106.5	113.4	123.4	(1)

[1] Not available.

r = revised.

32. Annual changes in productivity, hourly compensation, unit costs, and prices, 1971–81

Item	Year											Annual rate of change	
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1950–81	1960–81
Private business sector:													
Output per hour of all persons	3.6	3.5	2.7	−2.3	2.2	3.3	2.1	−0.2	−0.3	−0.2	p1.0	p2.4	p2.1
Compensation per hour	6.6	6.5	8.0	9.4	9.6	8.6	7.7	8.4	10.1	10.2	p10.0	p6.2	p7.2
Real compensation per hour	2.2	3.1	1.7	−1.4	0.4	2.7	1.2	0.7	−1.1	−2.9	p−0.3	p2.3	p1.7
Unit labor cost	2.9	2.9	5.2	11.9	7.2	5.1	5.5	8.6	10.4	10.4	p8.9	p3.6	p5.0
Unit nonlabor payments	7.6	4.5	5.9	4.4	15.0	4.1	5.9	5.1	5.5	6.6	p8.9	p3.3	p4.5
Implicit price deflator	4.4	3.4	5.4	9.4	9.7	4.7	5.6	7.4	8.8	9.2	p9.2	p3.5	p4.9
Nonfarm business sector:													
Output per hour of all persons	3.3	3.7	2.5	−2.4	2.1	3.2	2.0	−0.2	−0.7	−0.3	p0.9	p2.1	p1.8
Compensation per hour	6.6	6.7	7.6	9.4	9.6	8.1	7.6	8.5	9.7	9.9	p10.1	p5.9	p7.0
Real compensation per hour	2.2	3.3	1.3	−1.4	0.4	2.2	1.0	0.7	−1.4	−3.2	p−0.3	p2.0	p1.5
Unit labor cost	3.1	2.8	4.9	12.1	7.4	4.7	5.5	8.7	10.4	10.3	p9.1	p3.7	p5.0
Unit nonlabor payments	7.4	3.2	1.3	5.9	16.7	5.7	6.4	3.6	4.8	8.4	p10.4	p3.3	p4.4
Implicit price deflator	4.5	3.0	3.7	10.1	10.3	5.1	5.8	7.0	8.5	9.7	p9.5	p3.6	p4.8
Nonfinancial corporations:													
Output per hour of all employees	4.8	3.0	2.6	−3.4	3.4	3.2	2.7	0.4	−0.0	0.6	(1)	(1)	p2.1
Compensation per hour	6.5	5.8	7.7	9.7	10.1	8.2	8.1	8.2	9.7	10.1	(1)	(1)	p6.7
Real compensation per hour	2.1	2.5	1.4	−1.1	0.8	2.3	1.5	0.5	−1.4	−3.0	(1)	(1)	p1.5
Unit labor cost	1.6	2.8	4.9	13.6	6.5	4.9	5.3	7.8	9.7	9.5	(1)	(1)	p4.6
Unit nonlabor payments	7.4	2.7	1.5	7.1	20.1	4.6	5.2	3.8	4.4	8.3	(1)	(1)	p3.8
Implicit price deflator	3.5	2.8	3.8	11.4	10.9	4.8	5.2	6.4	7.9	9.1	(1)	(1)	p4.3
Manufacturing:													
Output per hour of all persons	6.1	5.0	5.3	−2.4	2.9	4.4	2.4	0.9	1.1	−0.3	p2.7	p2.6	p2.6
Compensation per hour	6.1	5.4	7.2	10.6	11.9	8.0	8.3	8.2	9.9	10.7	p11.1	p5.8	p6.9
Real compensation per hour	1.8	2.0	0.9	−0.3	2.5	2.1	1.7	0.5	−1.3	−2.5	p0.7	p2.0	p1.4
Unit labor cost	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.3	8.8	11.0	p8.2	p3.1	p4.1
Unit nonlabor payments	11.2	0.8	−3.3	−1.8	25.9	7.4	5.2	4.7	0.9	2.9	(1)	p(1)	p(1)
Implicit price deflator	3.1	0.5	0.3	9.0	13.1	4.6	5.6	6.5	6.4	8.8	(1)	p(1)	p(1)

[1] Not available.

r = revised.

33. Quarterly indexes of productivity, hourly compensation, unit costs, and prices, seasonally adjusted

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1979			1980				1981			
	1980	1981	II	III	IV	I	II	III	IV	I	II	III	IV
Private business sector:													
Output per hour of all persons	99.3	p100.4	99.7	99.4	99.1	98.5	98.1	98.4	99.1	100.3	r101.2	100.9	p99.0
Compensation per hour	131.5	p144.6	118.1	120.7	123.2	126.4	130.1	133.1	135.9	r139.8	r143.3	r146.5	p148.5
Real compensation per hour	96.7	p96.4	100.3	99.2	98.0	96.7	r96.6	96.9	96.0	96.1	r95.9	r96.3	p95.8
Unit labor cost	132.4	p144.1	118.5	121.4	124.3	127.0	131.3	133.9	r137.1	139.4	141.6	r145.2	p150.0
Unit nonlabor payments	118.3	p130.0	110.4	111.5	112.2	115.2	118.0	119.7	122.7	127.6	129.3	r132.4	p130.8
Implicit price deflator	127.6	p139.3	115.6	118.1	120.2	123.0	126.1	129.1	132.2	135.4	137.5	r140.9	p143.5
Nonfarm business sector:													
Output per hour of all persons	98.8	p99.7	99.1	98.9	98.8	99.0	98.2	99.0	99.0	100.0	100.4	99.9	p98.8
Compensation per hour	130.8	p143.9	117.7	120.2	123.0	126.0	129.4	132.3	135.4	r139.2	142.4	r145.7	p148.0
Real compensation per hour	96.2	p95.9	100.0	98.8	97.8	96.4	96.0	96.3	r95.7	95.7	96.3	r95.8	p95.5
Unit labor cost	132.4	p144.4	118.7	121.5	124.4	127.4	131.8	133.6	136.8	139.1	141.9	r145.8	p151.0
Unit nonlabor payments	117.6	p129.8	107.7	109.2	110.1	113.9	115.1	119.2	122.0	127.8	128.7	r132.2	p130.9
Implicit price deflator	127.4	p139.6	115.1	117.4	119.7	122.9	126.3	128.8	131.9	135.3	137.5	r141.2	p144.3
Nonfinancial corporations:													
Output per hour of all employees	101.0	(1)	100.7	100.5	99.9	100.2	100.1	101.8	101.8	103.3	103.9	r103.8	(1)
Compensation per hour	130.7	(1)	117.6	120.1	122.7	125.7	129.3	132.5	135.5	139.2	142.3	r145.5	(1)
Real compensation per hour	96.2	(1)	99.9	98.7	97.5	96.2	95.9	96.5	95.7	95.7	96.2	95.6	(1)
Total unit costs	129.7	(1)	115.3	118.2	121.3	124.2	129.2	131.1	134.1	136.0	138.7	142.2	(1)
Unit labor cost	129.4	(1)	116.8	119.5	122.8	125.4	129.1	130.2	133.1	134.7	137.0	140.2	(1)
Unit nonlabor costs	130.2	(1)	111.2	114.6	117.2	120.9	129.3	133.8	136.9	138.5	143.6	r147.7	(1)
Unit profits	90.2	(1)	100.7	97.5	92.2	95.5	83.4	89.1	92.4	106.8	102.8	r106.7	(1)
Implicit price deflator	125.2	(1)	113.7	115.9	118.1	121.0	124.1	126.4	129.5	132.7	134.7	r138.2	(1)
Manufacturing:													
Output per hour of all persons	101.7	p104.4	102.3	102.0	102.1	102.0	100.7	100.7	103.2	r104.2	r105.2	105.5	p102.4
Compensation per hour	131.6	p146.2	118.6	119.8	122.3	125.4	130.0	133.9	137.3	r141.1	r144.8	r148.0	p150.7
Real compensation per hour	r96.8	p97.4	100.7	98.5	97.2	r96.0	r96.5	97.5	97.0	r97.1	r97.9	r97.3	p97.2
Unit labor cost	129.4	p140.0	115.9	117.5	119.8	122.9	r129.0	133.0	133.0	r135.5	r137.6	r140.3	p147.1

[1] Not available.

r = revised.

34. Percent change from preceding quarter and year in productivity, hourly compensation, unit costs, and prices, seasonally adjusted at annual rate

[1977=100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	II 1980 to III 1980	III 1980 to IV 1980	IV 1980 to I 1981	I 1981 to II 1981	II 1981 to III 1981	III 1981 to IV 1981	III 1979 to III 1980	IV 1979 to IV 1980	I 1980 to I 1981	II 1980 to II 1981	III 1980 to III 1981	IV 1980 to IV 1981
Private business sector:												
Output per hour of all persons	1.3	−1.1	r4.7	3.5	r−1.1	p−7.2	0.0	0.0	r0.8	2.1	1.5	p−0.1
Compensation per hour	9.5	8.6	r11.9	10.4	r9.3	p5.7	10.3	10.3	r10.6	10.1	r10.1	p9.3
Real compensation per hour	1.6	−3.6	r0.5	3.2	r−2.3	p−1.9	−2.3	−2.0	r−0.6	0.3	r−0.6	p−0.2
Unit labor costs	8.1	9.8	6.9	6.6	r10.6	p14.0	10.3	10.3	9.7	7.8	r8.5	p9.5
Unit nonlabor payments	13.7	10.2	r17.1	5.3	r10.1	p−5.3	7.4	9.3	10.8	11.5	r10.6	p6.5
Implicit price deflator	9.8	9.9	10.0	6.2	r10.4	p7.5	9.4	10.0	10.1	9.0	r9.1	p8.5
Nonfarm business sector:												
Output per hour of all persons	3.6	−0.2	r4.4	1.4	r−1.8	p−7.8	r0.2	r0.2	1.1	r2.3	0.9	p−1.0
Compensation per hour	9.0	9.8	r11.7	9.6	r9.5	p6.5	10.1	10.1	r10.5	10.0	r10.2	p9.3
Real compensation per hour	1.2	−2.7	r0.3	r2.6	r−2.2	p−1.2	−2.5	−2.2	r−0.7	r0.3	−0.6	p−0.2
Unit labor costs	5.3	10.1	7.0	8.1	r11.5	p15.2	9.9	9.9	9.2	7.6	r9.2	p10.4
Unit nonlabor payments	15.0	9.9	20.3	3.0	r11.3	p−4.0	9.1	10.8	12.2	11.6	r10.9	p7.3
Implicit price deflator	8.2	10.0	11.0	6.5	r11.4	p8.9	9.6	10.2	10.1	8.9	r9.7	p9.4
Nonfinancial corporations:												
Output per hour of all employees	6.7	0.0	6.3	2.2	r−0.5	(1)	1.3	1.9	3.1	3.8	r2.0	(1)
Compensation per hour	10.2	9.4	11.4	9.3	r9.2	(1)	10.3	10.4	10.8	10.1	9.8	(1)
Real compensation per hour	2.2	−3.1	0.0	2.1	−2.5	(1)	−2.2	−1.9	−0.5	0.3	−0.9	(1)
Total unit costs	6.2	9.4	5.6	8.4	r10.3	(1)	11.0	10.5	9.5	7.4	8.4	(1)
Unit labor costs	3.2	9.4	4.8	7.0	9.7	(1)	8.9	8.4	7.4	6.1	7.7	(1)
Unit nonlabor costs	14.7	9.5	7.9	12.3	r11.8	(1)	16.8	16.9	15.4	11.1	r10.4	(1)
Unit profits	30.3	15.7	77.9	−13.9	r15.7	(1)	−8.6	0.3	11.8	23.3	r16.7	(1)
Implicit price deflator	7.9	9.9	10.4	6.2	r10.7	(1)	9.1	9.8	9.7	8.8	r9.3	(1)
Manufacturing:												
Output per hour of all persons	r−0.1	r10.3	r3.8	4.1	r1.2	p−11.3	r−1.2	1.1	2.1	r4.5	r4.8	p−0.8
Compensation per hour	12.7	10.5	r11.6	10.8	r9.3	p7.5	r11.8	r12.3	r12.5	r11.4	r10.5	p9.8
Real compensation per hour	4.5	−2.2	r−0.2	3.5	r−2.4	p−0.3	−1.0	r−0.2	r1.1	r1.5	r−0.2	p0.2
Unit labor costs	r12.8	0.1	7.5	r6.5	r8.0	p21.1	13.2	11.0	10.2	6.6	r5.5	p10.6

[1] Not available.

r=revised.

LABOR-MANAGEMENT DATA

MAJOR COLLECTIVE BARGAINING DATA are obtained from contracts on file at the Bureau of Labor Statistics, direct contact with the parties, and from secondary sources. Additional detail is published in *Current Wage Developments*, a monthly periodical of the Bureau. Data on work stoppages are based on confidential responses to questionnaires mailed by the Bureau of Labor Statistics to parties involved in work stoppages. Stoppages initially come to the attention of the Bureau from reports of Federal and State mediation agencies, newspapers, and union and industry publications.

Definitions

Data on wage changes apply to private nonfarm industry agreements covering 1,000 workers or more. Data on wage and benefit changes *combined* apply only to those agreements covering 5,000 workers or more. **First-year wage settlements** refer to pay changes going into effect within the first 12 months after the effective date of the agreement. **Changes over the life of the agreement** refer to total agreed-upon settlements (exclusive of potential cost-of-living escalator adjustments) expressed at an average annual rate. **Wage-rate changes** are expressed as a percent of straight-time hourly earnings, while **wage and benefit changes** are expressed as a percent of total compensation.

Effective wage-rate adjustments in major bargaining units measure actual changes during the reference period, whether the result of a newly negotiated increase, a deferred increase negotiated in an earlier year, or a cost-of-living adjustment. Average adjustments are affected by workers receiving no adjustment, as well as by those receiving increases or decreases.

Work stoppages include all known strikes or lockouts involving six workers or more and lasting a full shift or longer. Data cover all workers idle one shift or more in establishments directly involved in a stoppage. They do not measure the indirect or secondary effect on other establishments whose employees are idle owing to material or service shortages.

35. Wage and benefit settlements in major collective bargaining units, 1976 to date

[In percent]

Measures and industry	Annual average					Quarterly average								
	1977	1978	1979	1980	1981^p	1979	1980				1981^p			
						IV	I	II	III	IV	I^r	II^r	III^r	IV
Wage and benefit settlements, all industries:														
First-year settlements	9.6	8.3	9.0	10.4	11.3	8.5	8.8	10.2	11.4	8.5	10.5	11.6	12.3	11.1
Annual rate over life of contract	6.2	6.3	6.6	7.1	9.2	6.0	6.7	7.4	7.2	6.1	9.4	10.8	9.3	5.8
Wage rate settlements, all industries:														
First-year settlements	7.8	7.6	7.4	9.5	10.1	6.3	8.2	9.1	10.5	8.3	7.2	11.8	11.8	9.3
Annual rate over life of contract	5.8	6.4	6.0	7.1	8.1	5.3	3.5	7.3	7.4	6.5	6.5	9.7	9.4	5.6
Manufacturing:														
First-year settlements	8.4	8.3	6.9	7.4	7.3	5.6	7.2	6.7	8.4	7.8	6.7	8.1	9.4	6.0
Annual rate over life of contract	5.5	6.6	5.4	5.4	6.3	4.2	5.7	5.1	5.6	5.8	6.0	6.6	7.9	5.0
Nonmanufacturing (excluding construction):														
First-year settlements	8.0	8.0	7.8	9.5	10.2	7.8	9.4	10.3	9.5	8.2	7.9	11.7	10.3	9.8
Annual rate over life of contract	5.9	6.5	6.2	6.6	7.5	7.4	7.6	8.5	5.9	6.8	7.2	9.0	8.6	5.5
Construction:														
First-year settlements	6.3	6.5	8.8	13.6	13.5	7.5	10.8	12.2	15.4	14.3	11.4	12.9	16.4	11.4
Annual rate over life of contract	6.3	6.2	8.3	11.5	11.3	7.6	9.1	10.4	13.0	12.0	10.3	11.1	12.4	11.7

r = revised.

36. Effective wage adjustments in major collective bargaining units, 1976 to date

[In percent]

Measures and industry	Average annual changes					Average quarterly changes								
	1977	1978	1979	1980	1981 p	1979	1980				1981 p			
						IV	I	II	III	IV	I r	II r	III r	IV
Total effective wage rate adjustment, all industries	8.0	8.2	9.1	9.9	9.1	1.6	1.6	3.3	3.5	1.3	1.6	3.0	3.2	1.3
Change resulting from—														
Current settlement	3.0	2.0	3.0	3.6	2.5	.5	.4	1.0	1.7	.5	.4	1.1	.6	.4
Prior settlement	3.2	3.7	3.0	3.5	3.8	.4	.5	1.4	1.2	.3	.6	1.3	1.5	.4
Cost-of-living adjustment clause	1.7	2.4	3.1	2.8	2.8	.7	.7	.8	.7	.6	.6	.7	1.1	.4
Manufacturing	8.4	8.6	9.6	10.2	8.9	2.4	2.0	3.4	2.9	1.7	2.2	2.1	3.0	1.6
Nonmanufacturing	7.6	7.9	8.8	9.7	9.2	1.0	1.3	3.2	4.0	1.1	1.1	3.7	3.4	1.1

NOTE: Because of rounding and compounding, the sums of individual items may not equal totals.

r = revised.

37. Work stoppages, 1947 to date

Month and year	Number of stoppages		Workers involved		Days idle	
	Beginning in month or year	In effect during month	Beginning in month or year (thousands)	In effect during month (thousands)	Number (thousands)	Percent of estimated working time
1947	3,693	....	2,170	....	34,600	.30
1948	3,419	....	1,960	....	34,100	.28
1949	3,606	....	3,030	....	50,500	.44
1950	4,843	....	2,410	....	38,800	.33
1951	4,737	....	2,220	....	22,900	.18
1952	5,117	....	3,540	....	59,100	.48
1953	5,091	....	2,400	....	28,300	.22
1954	3,468	....	1,530	....	22,600	.18
1955	4,320	....	2,650	....	28,200	.22
1956	3,825	....	1,900	....	33,100	.24
1957	3,673	....	1,390	....	16,500	.12
1958	3,694	....	2,060	....	23,900	.18
1959	3,708	....	1,880	....	69,000	.50
1960	3,333	....	1,320	....	19,100	.14
1961	3,367	....	1,450	....	16,300	.11
1962	3,614	....	1,230	....	18,600	.13
1963	3,362	....	941	....	16,100	.11
1964	3,655	....	1,640	....	22,900	.15
1965	3,963	....	1,550	....	23,300	.15
1966	4,405	....	1,960	....	25,400	.15
1967	4,595	....	2,870	....	42,100	.25
1968	5,045	....	2,649	....	49,018	.28
1969	5,700	....	2,481	....	42,869	.24
1970	5,716	....	3,305	....	66,414	.37
1971	5,138	....	3,280	....	47,589	.26
1972	5,010	....	1,714	....	27,066	.15
1973	5,353	....	2,251	....	27,948	.14
1974	6,074	....	2,778	....	47,991	.24
1975	5,031	....	1,746	....	31,237	.16
1976	5,648	....	2,420	....	37,859	.19
1977	5,506	....	2,040	....	35,822	.17
1978	4,230	....	1,623	....	36,922	.17
1979	4,827	....	1,727	....	34,754	.15
1980	3,885	....	1,366	....	33,289	.14
1981 p	2,577	....	1,082	....	24,670	.11
1980: December	90	380	19	77	1,229	.06
1981 p: January	187	....	38.8	....	942.4	.05
February	213	....	41.5	....	769.9	.04
March	285	....	243.7	....	1,697.5	.08
April	286	....	80.3	....	4,884.5	.24
May	301	....	123.7	....	5,307.6	.26
June	302	....	241.0	....	3,521.1	.17
July	286	....	120.5	....	2,472.6	.12
August	211	....	68.5	....	1,704.3	.09
September	225	....	58.5	....	1,479.3	.08
October	166	....	36.0	....	1,207.9	.06
November	82	....	21.0	....	395.2	.02
December	33	....	8.2	....	287.6	.01

NOTE: The preliminary data for 1981 have been revised.

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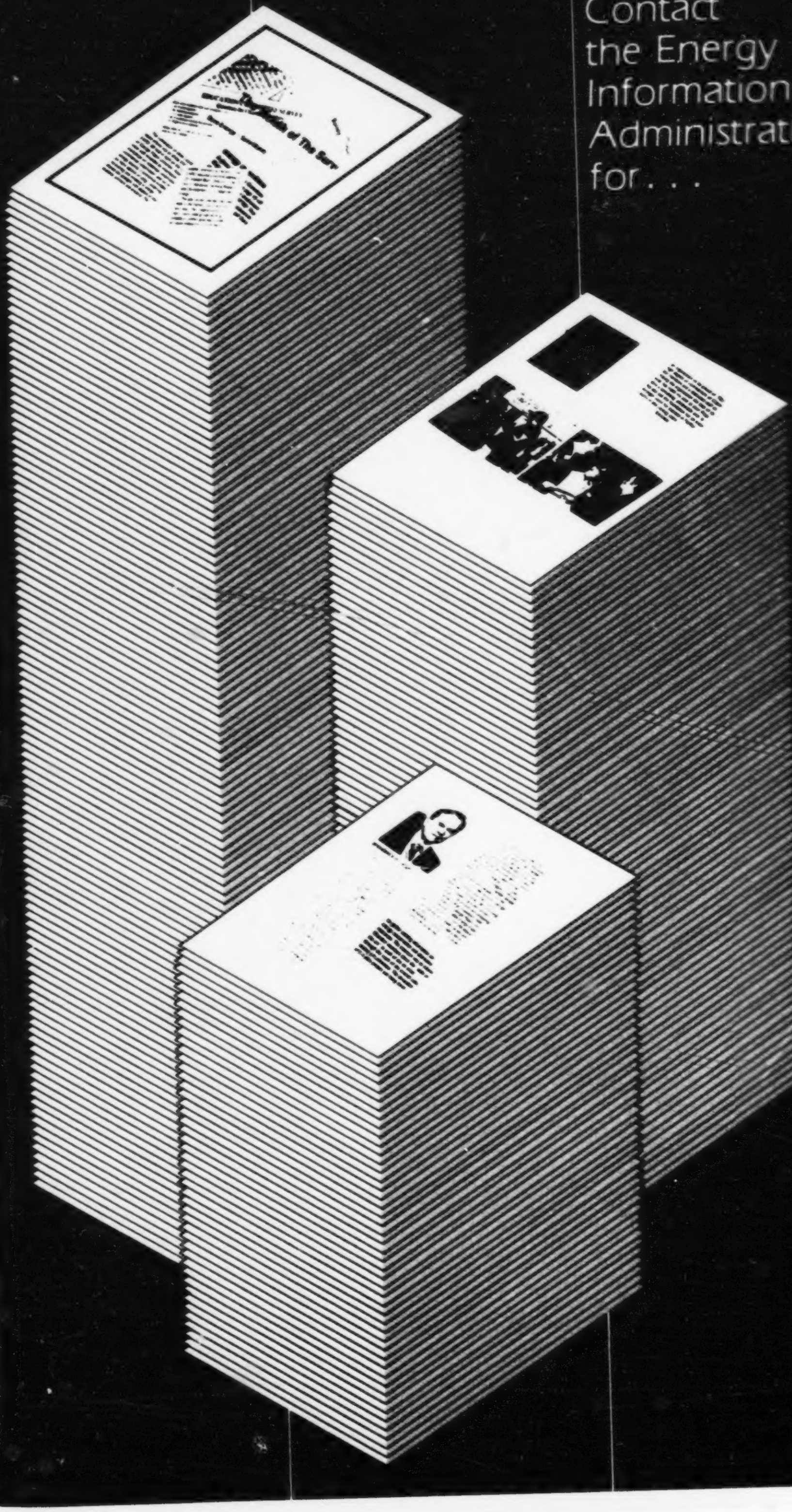

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May 1982

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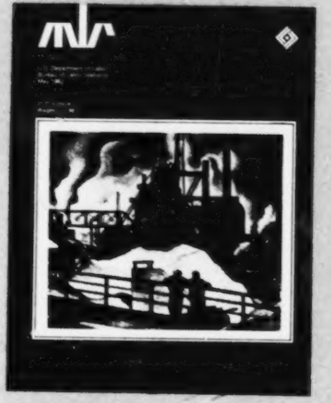

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MAY 1982
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Labor Month In Review

NEW TECHNOLOGY. The Bureau of Labor Statistics continued its studies of technological change by appraising the impact of new technology on productivity and occupations in four major industries. The studies show—

Meat products. Most of the new technology occurred in the 1960's and include rail systems for moving animal carcasses between cutting stations, eliminating the constant repositioning required in the previous method. Also, for beef processing, workers were equipped with power knives and saws for carcass splitting, mechanical hide pullers eliminated the hand cutting operations necessary for hide removal, and rendering operations were mechanized so that one worker became responsible for the entire process. In the poultry processing industry, innovations included mechanized slaughtering, feather removal, and packaging and conveyors and rail systems to move carcasses through the plant. A large proportion of meat and poultry cutting operations is still done manually. Automation is hindered by the difficulty of developing an economical and reliable cutting machine capable of adapting to the physical differences in animal carcasses.

Not much change is expected in job content and skill requirements in the 1980's. In 1978, 3 of 5 meat products workers were operatives—meatcutters, packers, or machine operators; they are expected to account for two-thirds of the industry's work force by 1990.

Foundries. The specific technologies gaining prominence include improved material handling devices, automatic equipment for molding and coremaking, more productive diecasting technology, more widespread use of electric furnaces in melting and mechanized systems in pouring operations, advances in cleaning and finishing equipment, and more extensive instrumentation and computerization. The industry also has invested substantial funds for technology to reduce pollution and improve worker health and safety.

The trend to mechanization will continue to alter the structure of occupations. Foundries are employing proportionally more engineers, technicians, and maintenance workers in response to more extensive and complex production equipment. Hence, production workers have declined relative to the total foundry work force and the composition of occupations in this category is changing. A further decline is expected in occupations which involve large manual tasks. The more widespread use of improved trucks, hoists, conveyors, and related equipment will reduce the need for hand laborers, but will increase the need for truck operators. More maintenance mechanics and repairers will be needed to service the complex equipment. Robots may assume some job functions.

Metalworking machinery. Numerical control of machine tools is the most significant new technology introduced in this industry in the past 25 years. It involves the automatic control of a machine tool's movement by an electronic controller or computer which reads instructions in digital form. Numerically controlled tools reduce setup time and eliminate the need for costly tooling devices, and can produce parts with greater precision and uniformity. Despite these advantages, most machine tool shops still rely on skilled workers using conventional tools.

Operatives and craftworkers, the two largest blue-collar occupations, accounted for one-third of the industry's employment in 1978. Operatives are expected to grow by 36 percent by 1990, while craftworkers' growth will be about half that rate. Thus, operatives will account for a somewhat larger percent of total employment in 1990 than in 1978, while craftworkers' share will decline slightly.

The costliness of numerically controlled machines and the intricacy of their control systems will create a demand for preventive maintenance mechanics trained in electronics. Employment of these mechanics, repairers, and installers (a subdivision of the craftworker group) will expand five times as fast as all craft employment. The professional and technical worker group will grow by 22 percent by 1990. Engineers will remain the dominant occupation for this group, with about half of them still in the mechanical field.

Electrical and electronic equipment. New technology includes equipment to design and fabricate semiconductors and related devices, increased automation in assembly line operations, numerically controlled machine tools, and advanced production equipment.

More than one-half of the industry's work force were engaged in manufacturing communication equipment and electronic components. The structure of occupations is expected to change. All occupational groups, except salesworkers, are expected to increase in the 1980's. Operatives, the largest group, will increase by more than one-fourth, and will continue to be the largest group, at 47 percent of total employment. Assemblers make up more than one-third of the operatives; they are expected to increase at a slightly higher rate than the average for all occupations in the industry.

Technologies applicable to assembly operations will be diffused more widely, but assembly of household appliances and other products will continue to involve a high degree of manual tasks.

The four studies have been published in BLS Bulletin 2104, *Technology and Labor in Four Industries*, which is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Price: $3.25. □

Wage increases moderate in 1981

Most wage series rose more slowly, with much of the slowdown in the fourth quarter; when adjusted for inflation, they showed declines, although the wage-price gap was narrower

ARTHUR SACKLEY

Wage gains were moderate in 1981, as the recession developed and inflation abated. Nearly all of the Bureau of Labor Statistics' measures of wage change recorded smaller advances than in the previous year.[1] When adjusted for inflation, most measures of real wages declined (continuing the trend started in 1979), but at a diminishing rate, mainly because of the slowdown in the rise in consumer prices. The impact of the recession was especially evident in the Bureau's cyclically sensitive average weekly earnings series; it showed the lowest rate of increase in more than a decade. In fact, the only measure that did not rise more slowly than in the previous year was new settlements negotiated during the year in large bargaining units.

The downturn in economic activity and the easing of inflation, a relatively light incidence of collective bargaining, and wage decisions in prior years were among the elements influencing wage changes in 1981. An examination of the role of these factors is helpful in understanding wage developments in the overall economy and in the collective bargaining sector.

The state of the economy was a major influence on wage changes in 1981. After rising vigorously at an annual rate of 8.6 percent in the first quarter, real gross national product leveled off, then fell 4.7 percent in the fourth quarter. Economic indicators relevant to wage changes reflected this shift: from July to December employment dropped by 1.3 million, unemployment rose by 1.8 million, the unemployment rate climbed from 7.2 to 8.8 percent, and both the factory workweek and overtime hours declined markedly.

Cyclical downturns initially tend to depress workers' earnings, as employers cut back on hours of work. Then, as the recession deepens, hiring is restricted and layoffs spread, producing increasing slack in labor markets which, in turn, dampens the pressure for pay increases.

The 1981 recession contributed to some abatement in the upward pressure prices may have exerted on wages in recent years. The Consumer Price Index for All Urban Consumers (CPI-U) rose 8.9 percent in 1981—the smallest increase in 4 years.

The government sector was under some of the same pressure as private industry. Because government services are highly labor intensive, public payrolls were especially vulnerable to the fiscal restraints experienced at all levels of government in 1981. However, available data indicate that most of the labor cost containment measures have affected employment more than wages.

In the organized sector of the economy, activity was comparatively subdued, despite the substantial changes in the economic climate and wage and price movements. It was a very light year for bargaining, and the incidence of work stoppages declined to its lowest level since 1940.

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Wage and compensation changes

Nearly all measures of wage and compensation change registered smaller advances in 1981 than in the previous year, with much of the deceleration occurring in the fourth quarter. The measures also show a smaller percentage rise in wages than in the Consumer Price Index, resulting in further erosion in purchasing power for most workers, although the gap between price and wage increases was narrower than in recent years. Table 1 shows trend data in current and 1977 dollars for several key compensation series.

Hourly compensation is the measure with the broadest scope. It includes payrolls and employer contributions to social insurance and private benefit plans. Hourly compensation in the private nonfarm business sector went up 9.3 percent in 1981. Although this was the third largest increase in the series in the last decade, it was less than that of 1980, and was the first year-to-year decline in the rate of increase since 1977. Hourly compensation data not only measure trends in wages and benefits, but also the labor cost component in unit labor costs, a key indicator of inflationary trends. Typically, at the onset of a recession, output declines faster than employment and hours of work. Consequently, productivity (output per employee hour) falls, as was the case in the second half of 1981. The fourth-quarter decline in productivity was the largest since the productivity series began in 1947. The magnitude of this drop was reflected in a steep climb in unit labor costs (hourly compensation divided by output per employee hour) as the recession deepened, despite a slower rise in hourly compensation.

The average hourly and weekly earnings series are more restricted in scope than hourly compensation. They cover only wages and salaries of production and nonsupervisory workers in the private nonfarm economy. These measures typically decline or slow their rate of increase in the initial phase of a downturn through the effects of a shift in the employment mix caused by layoffs in cyclically sensitive high-wage industries, less overtime, and, for weekly earnings, shorter workweeks. This was the pattern in 1981.

Average hourly earnings rose 7.2 percent in 1981, the smallest increase since 1977. Some of the slowdown is attributable to recession-related layoffs in construction and durable goods manufacturing, both relatively high-paying sectors. The shift away from these high-wage industries depressed average earnings. Average weekly earnings, reflecting the slower rise in hourly earnings and a reduction in the workweek during the second half of the year, went up by only 6.0 percent in 1981—the smallest gain since the 1960's.

Wage measures that are not influenced by changes in the workweek and shifts in the distribution of employment by industry are less sensitive to cyclical fluctuations in economic activity. The Hourly Earnings Index minimizes these shift effects, by excluding overtime in manufacturing industries and by applying fixed-weighted aggregate employee hours to average earnings at a detailed industry level. It provides data for broad industry groups and the private nonfarm economy. The Hourly Earnings Index went up 8.2 percent in 1981, a smaller increase than the 9.4-percent rise of the previous year, but the deceleration was not as pronounced as that for average hourly or weekly earnings.

The Employment Cost Index is broader in occupational and industrial coverage than the Hourly Earnings Index, and measures compensation as well as wages.[2] It more closely approximates underlying wage rate trends

Table 1. Changes in employee wages and compensation, 1971–81

[In percent]

Measure	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Average hourly compensation:[1]											
Current dollars	5.6	7.2	8.1	10.9	7.8	8.3	7.5	9.0	9.8	10.1	9.3
1977 dollars	2.1	3.7	–.2	–1.1	.4	3.0	.8	.0	–2.6	–2.2	–.2
Gross average hourly earnings:[2]											
Current dollars	6.9	7.6	6.6	8.4	6.1	7.9	7.3	9.2	7.9	8.8	7.2
1977 dollars	3.4	4.2	–2.0	–3.4	–.9	2.9	.5	.1	–4.8	–3.2	–1.5
Gross average weekly earnings:[2]											
Current dollars	7.2	7.0	6.6	6.3	6.7	7.0	7.0	9.1	7.6	7.9	6.0
1977 dollars	3.8	3.5	–2.1	–5.2	–.5	2.0	.3	.1	–5.4	–4.1	–2.5
Hourly Earnings Index:[2]											
Current dollars	7.0	6.2	6.4	9.3	7.1	7.5	7.4	8.6	8.2	9.3	8.2
1977 dollars	3.5	2.7	–2.3	–2.7	.0	2.5	.7	–.4	–4.5	–2.8	–.4
Employment Cost Index:[3]											
Current dollars	—	—	—	—	—	7.2	7.0	7.7	8.7	9.0	8.8
1977 dollars	—	—	—	—	—	2.2	.3	–1.1	–4.2	–3.1	.0

[1] Covers all employees in the nonfarm business sector.

[2] Covers production and nonsupervisory workers in the private nonfarm economy.

[3] Covers only wages and salaries in the private nonfarm economy, excluding households. Data are unavailable before 1976.

NOTE: Percent changes are based on seasonally adjusted data and reflect fourth quarter to fourth quarter change for average hourly compensation and December to December change for other measures.

because it controls for both occupational and industry employment shifts, and excludes all overtime pay and hours, not only those in manufacturing firms. Furthermore, it measures changes in benefit cost resulting from changes in benefit practices rather than temporary shifts in benefit usage or other transient influences. Because of these and other features, this index is less sensitive than the other measures to short-term economic fluctuations. The 1981 Employment Cost Index shows a relatively smaller change from the previous year than the other measures. The wage and salary series went up 8.8 percent in 1981, compared with 9.0 percent in 1980. Compensation (wages and benefits), as measured by this index, went up 9.8 percent in both years.

All measures of wage change that have been discussed here showed slower gains toward the end of 1981 than during the early part of the year. The annual rates of change in the 6 months ending in December were 6.2 percent for the average hourly earnings, 4.4 percent for weekly earnings, and 7.3 percent for the Hourly Earnings Index. Average hourly compensation rose at a 6.5-percent annual rate in the fourth quarter. After a large advance in the first quarter, both the compensation and wage series of the Employment Cost Index registered smaller gains during the remainder of 1981.

Even though the rate of growth in the Consumer Price Index slowed more than the pace of most measures of wages, it still exceeded the rate of pay gains. As a result, the gap between price and wage increases narrowed, but erosion in workers' purchasing power continued. Real gross average weekly earnings, a widely used indicator of the impact of price increases on pay, fell 2.5 percent in 1981.

Government compensation

All the BLS compensation data discussed to this point cover only the private sector. The Employment Cost Index, however, has recently been expanded to include data for State and local governments, but results for a full year are not yet available for annual comparisons. Data on government workers from other sources suggest that the initial impact of fiscal restraints in 1981 was on employment rather than pay gains. For the first time since the immediate post-World War II period, aggregate employment fell, as layoffs and hiring freezes were imposed. During most of 1981, salaries of 1.4 million Federal white-collar employees under the General Schedule pay system were 9.1 percent higher than during the same period a year earlier, mostly a result of a pay raise in October 1980. Their annual pay raise in October 1981 was limited to 4.8 percent, the smallest increase since the passage of the Federal Pay Comparability Act of 1970. Under special legislation and presidential order, about 450,000 blue-collar Federal employees also were held to a 4.8-percent pay increase. Limited data for State and local employees indicate that their pay gains were mainly the result of decisions in prior years, and that 1981 wage decisions were less generous.

Collective bargaining

The major collective bargaining wage-and-benefit change statistics are more limited in scope than the earnings-and-compensation change series because the data are restricted to bargaining units of at least 1,000 workers in the private economy, and at least 5,000 in State and local governments.[3] Although such bargaining units employ less than 10 percent of the labor force, wage decisions affecting them influence wage developments in the overall economy. And negotiated wage decisions affecting them may set patterns for wage decisions in smaller bargaining situations and in nonunion establishments or political jurisdictions.

The major collective bargaining series provide two basic types of information for assessing wage developments—data on negotiated wage-and-benefit settlements and data on effective wage rate adjustments. Settlement data are forward looking and relate to changes in wages and compensation provided for in contracts reached during a period. They are expressed as changes during the first year and average annual changes over the life of the contract. Effective wage rate adjustments include those changes resulting from agreements negotiated during the period, deferred wage changes resulting from settlements reached in prior periods, and increases triggered by cost-of-living adjustments (COLA) clauses. Of the two types of data, effective wage adjustments are more comparable to the earnings and compensation change measures discussed earlier.

Effective wage adjustments in major collective bargaining units in private industry average 9.5 percent in 1981, down from 9.9 percent in the previous year, paralleling the deceleration in the rate of increase of more comprehensive earnings and compensation series. (See table 2.) A light bargaining year appears to have been an important factor in the smaller increase. Deferred increases are generally lower, on average, than first-year changes under new settlements. In the light bargaining year of 1981, more workers were covered by deferred increases than by new settlements, holding down the size of the overall adjustment.

In 1981, approximately 6.3 million workers received deferred increases averaging 5.3 percent. When prorated over all workers, the increase was 3.8 percent. New settlements provided adjustments of 9.8 percent, but covered only 2.2 million workers, resulting in an adjustment of just 2.5 percent for all workers. The average COLA increase for the 4.6 million covered workers in 1981 was 6.1 percent (approximately three-fourths of the rise in the CPI over the period of COLA review), or

3.2 percent averaged over all workers.

Data on settlements negotiated during the year are useful as indicators of the size of future wage changes. In 1981, negotiated settlements provided wage adjustments averaging 9.8 percent in the first year of the contract, and 7.9 percent annually over the life of the contract. These are the largest annual increases since 1975, another recession year. Increases in wages and benefits, calculated for settlements covering 5,000 workers or more, were 11.3 percent for the first year, and 8.4 percent over the life of the contract.

The higher wage adjustments reflected in settlement data are not necessarily inconsistent with the 1981 economic environment if other factors are taken into account. The multi-year nature of most contracts tends to reduce the impact of prevailing economic conditions on the amount of wages provided for in current settlements. Current settlements may be influenced by precedent-setting agreements reached earlier in other bargaining situations under quite different economic circumstances, and may also reflect what has occurred in the interim between the previous settlement and current negotiations. For example, a steep rise in consumer prices since the previous contract, not compensated by COLA's, may create pressures for catch-up increases, even though inflation may have abated in the meantime. This may have been the situation in 1981. When the same parties to 1981 settlements last negotiated (on average, about 30 months before), the average wage adjustment was 8.6 percent in the first year, and 7.0 percent annually over the life of the contract. Over a comparable span from mid-1978 to mid-1981, the CPI rose at an annual rate of nearly 12 percent. Although some of the gap between negotiated wage increases and this price rise was offset by COLA's, most workers experienced an erosion in the purchasing power of their pay.

Expectations concerning future inflation and other related economic factors are also important considerations which may dilute the impact of current economic conditions on multi-year contracts. Concern about the rate of inflation may have influenced bargaining. In 1981, the rate of price increase did not dip below the double-digit level until most of the year's negotiations had been concluded. Contracts with COLA's provided for adjustments of 8.0 percent the first year and 5.5 percent annually over the contract life; for contracts without COLA, the comparable adjustments were 10.6 and 8.8 percent.

Wage decisions may also be less sensitive to prevailing economic conditions than to pressures to maintain existing pay relationships among groups of workers and industries. Management and labor tend to prefer employment and hours adjustments to marked changes in compensation which may upset longstanding wage relationships.

The influence of 1981 settlements was tempered by the relatively small number of workers they covered. Agreements reached during the year covered only 2.4 million workers, compared with 3.8 million in 1980. Another consideration is that settlements in the construction industry, which make up a higher proportion of total settlements in light than in heavy bargaining years, were a major factor in boosting the overall average adjustment. Settlements in this industry accounted for nearly 1 in 4 workers covered by major agreements concluded in 1981. When construction settlements are excluded from the data, first-year contract changes averaged 8.6 percent, and adjustments over the life of the contract, 6.7 percent.

Several mitigating circumstances should be taken into account in assessing the sizable wage gains of construction settlements against the general economic slowdown and depressed activity in the industry. One consider-

Table 2. Average change in major private collective bargaining agreements, 1971–81

[In percent]

Measure	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Settlements											
Wage-rate (contracts covering 1,000 workers or more):											
First-year adjustment	11.6	7.3	5.8	9.8	10.2	8.4	7.8	7.6	7.4	9.5	9.8
Average annual change over life of contract	8.1	6.4	5.1	7.3	7.8	6.4	5.8	6.4	6.0	7.1	7.9
Wage and benefit (contracts covering 5,000 workers or more):											
First-year adjustment	13.1	8.5	7.1	10.7	11.4	8.5	9.6	8.3	9.0	10.4	11.3
Average annual change over life of contract	8.8	7.4	6.1	7.8	8.1	6.6	6.2	6.3	6.6	7.1	9.2
Effective wage-rate changes											
Total effective adjustment[1]	9.2	6.6	7.0	9.4	8.7	8.1	8.0	8.2	9.1	9.9	9.5
Current settlement	4.3	1.7	3.0	4.8	2.8	3.2	3.0	2.0	3.0	3.6	2.5
Prior settlement	4.2	4.2	2.7	2.6	3.7	3.2	3.2	3.7	3.0	3.5	3.8
Cost-of-living adjustment provisions	.7	.7	1.3	1.9	2.2	1.6	1.7	2.4	3.1	2.8	3.2

[1] Detail may not add to totals because of rounding.

NOTE: Data include wage-and-benefit changes in major collective bargaining agreements (those covering 1,000 workers or more) in the private nonfarm economy. Settlement data exclude possible increases under cost-of-living adjustment provisions, except for minimum increases guaranteed in the contract.

Table 3. Wage change in major State and local collective bargaining agreements, 1980–81

[In percent]

Measure	1980	1981
Settlements		
First-year adjustment		
Wage rates	7.5	7.4
Wage and benefit	7.3	7.8
Average annual change over life of contract:		
Wage rates	7.8	7.1
Wages and benefits	7.4	7.3
Effective wage-rate changes		
Total effective adjustment	6.5	8.7
Current settlement	3.1	3.3
Prior settlement	3.0	4.5
Cost-of-living adjustment provision	.4	.9

ation is the concentration of construction settlements in the spring, when economic activity was considerably more robust than in subsequent months. Another is that major bargaining situations are concentrated in heavy and commercial construction, which generally has not shared in the slump experienced by the less organized residential segment of the industry.

Collective bargaining data for State and local government workers show the influence of past wage decisions. When prorated over the approximately 1 million workers in large bargaining units, the average effective wage adjustment was 8.7 percent in 1981, compared with 6.5 percent the previous year. (See table 3.) However, the major factor in the higher 1981 adjustment was the larger component of the total adjustment attributable to settlements negotiated in prior years. For settlements reached in 1981, the data are more consistent with what might be expected in light of the fiscal pressures on public officials to limit pay adjustments. On balance, 1981 settlements provided smaller adjustments than those negotiated in the previous year.

Although overall, both private industry and State and local government settlements were relatively large in 1981, there were wage-and-benefit concessions by workers in several key industries experiencing economic difficulties. Wage or benefit concession, or both, were negotiated for 95,000 workers in the automobile, airlines, and meatpacking industries. About 67,000 other workers were covered by agreements negotiated in 1981 that provided for no wage change in the first contract year. Similarly, a settlement for city workers in Detroit provided for a compensation freeze.

Outlook for 1982

Nearly all of the economic conditions affecting wage developments in 1981, such as declines in aggregate output, high levels of unemployment, and the moderating rate of inflation, persisted in the first few months of 1982. If they persist through most of the year, they may temper pressure for wage gains.

Historically, when economic declines have leveled off and economic activity has picked up, some factors influencing wage changes in recessions have operated in reverse. Additions to the workweek, more overtime, and rehiring in the durable goods and construction industries have tended to push up average earnings at a brisk pace. If the pattern of prior recoveries is repeated, output would go up faster than employment and hours, resulting in an increase in productivity, and a modest rise in unit labor cost.

Negotiations in several key industries highlight this heavy bargaining year.[4] About 3.6 million workers are covered by major agreements expiring or reopening in 1982, compared with only 2.6 million in 1981. Agreements have already been reached in the automobile, petroleum refining, meatpacking, and trucking industries; negotiations are underway in the rubber industry; and bargaining is scheduled later for the electrical machinery and equipment industry. These six industries cover 1.2 million workers, and another 500,000 construction workers are covered by agreements which are expiring or reopening this year, mostly in the spring.

In several completed contract negotiations, the outcomes appear to have been influenced by economic problems facing individual industries. These problems included substantial excess capacity and falling oil prices for petroleum refiners; severe competitive pressures on carriers in the wake of deregulation of interstate trucking; long-term technological changes in the meatpacking industry and declining profitability which forced the closing of many less efficient, obsolete plants; and mounting losses in the automobile industry, a consequence of the severe slump in car sales and foreign competition. At the time of negotiations, workers in these industries were facing employment cutbacks. Therefore, job security was a major issue on the bargaining agenda.

The key contract in petroleum refining provided for a smaller wage increase than the union had proposed. In trucking, the major agreement included a wage freeze; in meatpacking, the pattern-setting agreement provided for a number of wage-and-benefit concessions and a moratorium on plant closings until mid-1983; the United Automobile Workers made substantial labor cost concessions to both Ford and General Motors in exchange for job security guaranties. Do these settlements portend a general moderating of pressure for wage gains in favor of greater job security, or do they merely reflect individual industry circumstances? This question awaits further developments for resolution.

In addition to wage changes resulting from settlements in 1982, about 4.3 million workers are scheduled to receive increases averaging 6.3 percent from contracts negotiated in prior years. This is the highest average deferred increase since 1971. Additionally, cost-of-living increases are scheduled for 3.4 million workers. Although the amount depends on the inflation rate and the formula used, a continuing abatement in price increases would dampen the size of these adjustments.[5]

In the public sector, budgetary constraints at all levels can be expected to hold down wage gains. President Reagan's 1983 budget submission projects a 5-percent pay raise for Federal white- and blue-collar workers in 1982, essentially the same amount as in 1981. One element in wage developments in 1981 will not be present in 1982: for the first time since 1973, no increase is scheduled in the Federal minimum wage. ☐

FOOTNOTES

[1] For a detailed description of the individual measures, see *BLS Measures of Compensation*, Bulletin 1941 (Bureau of Labor Statistics, 1977).

[2] Movements in this measure are discussed in Beth Levin, "The Employment Cost Index: recent trends and expansion," p. 9, this issue.

[3] For a more detailed review of collective bargaining in 1982, see Mary Anne Andrews and David Schlein, "Bargaining Calendar will be heavy in 1982," *Monthly Labor Review*, December 1981, pp. 21–31.

[4] For more details, see Joan Borum, "Negotiated Changes in Wages and Benefits in Major Collective Bargaining Agreements, in 1981," *Current Wage Developments*, April 1982.

[5] Wage increases and COLA's scheduled in 1982 are analyzed in Douglas R. LeRoy, "Scheduled wage increases and cost-of-living provisions in 1982," *Monthly Labor Review*, January 1982, pp. 16–20.

The 'mandatory' agenda

In brief, there are today many 'mandatory' subjects of bargaining with which the employer must deal in good faith. Such subjects include wages, hours of employment, health insurance, pensions, safety practices, the grievance procedure, procedures for discharge, layoff, recall and discipline, seniority, and subcontracting. Managers are not required to make concessions or agree to union proposals on any of these (or various other) subjects. They *are* obligated, however, to meet with the union at reasonable times and with the good-faith intention of reaching an agreement. On 'nonmandatory' or 'voluntary' subjects —those that are lawful but not easily related to 'wages, hours and other conditions of employment'—employers are not so obligated and are free to refuse to bargain about them.

—ARTHUR A. SLOANE AND FRED WITNEY
Labor Relations, 4th ed.
(Englewood Cliffs, N.J., Prentice-Hall,
Inc., 1981), p. 105.

The Employment Cost Index: recent trends and expansion

The 9.8-percent rise in compensation in 1981 matched the year-earlier level; coverage was extended to employees of State and local governments and index numbers for wages and compensation were published for the first time

BETH LEVIN

After nearly a decade of developmental work, the Bureau of Labor Statistics Employment Cost Index (ECI) today tracks labor cost trends for nearly 88 million workers in the civilian nonfarm economy. There were two noteworthy expansions of the series in 1981—the inclusion of State and local government workers and the introduction of index numbers.

Last year, increases in the Employment Cost Index for private nonfarm workers were nearly the same as in 1980. (See tables 1 and 2.) The compensation index was up 9.8 percent in both years, while the wage and salary index increase of 8.8 percent in 1981 was slightly below the 9.0-percent increase in 1980. In contrast, the Consumer Price Index for Urban Wage Earners and Clerical Workers rose 12.5 percent in 1980 compared with 8.7 percent in 1981. Consequently, real wages increased slightly in 1981, while they fell in 1980. The last year prior to 1981 in which real wages increased was 1977.

All of the ECI compensation series published set record high increases in the first quarter of 1981.[1] However, in the remaining quarters of the year, compensation gains were generally below the pace set in the same periods in 1980. Legislated increases in the minimum wage and in the social security tax rate and earnings ceiling pushed up the March gains. The social security changes accounted for 0.5 percentage point of the 3.6-percent rise in compensation for all private nonfarm workers during the first quarter.

Changes in social security and other legally required benefits often cause the first quarter compensation advance to be the largest of the year. However, in 1981 both the social security tax rate and earnings ceiling increases were higher than usual:

	Tax rate		*Earnings ceiling*	
Year	*Level (in percent)*	*Percent increase*	*Level*	*Percent increase*
1978	6.05	3.4	$17,700	7.3
1979	6.13	1.3	$22,900	29.4
1980	6.13	—	$25,900	13.1
1981	6.65	8.5	$29,700	14.7
1982	6.70	.8	$32,400	9.1

While the overall wage and salary changes in 1981 were similar to those in 1980, the underlying patterns were quite different. Union and blue-collar workers' advances declined in 1981 relative to 1980, while white-collar and nonunion workers' accelerated over the same period.

One factor in the moderation of gains in the union sector was the relatively light bargaining year for major collective bargaining contracts (those covering 1,000 workers or more) in 1981. In addition, economic conditions led to wage concessions by unionized workers in

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the meatpacking, rubber, and automobile industries in manufacturing, and in airlines and the railroad and trucking industries in nonmanufacturing.[2]

Union workers' pay increases dropped from 10.9 percent in 1980 to 9.6 percent in 1981. Within the manufacturing sector, union wage gains fell to 8.9 percent in 1981 from 11.0 percent in 1980, and in nonmanufacturing, they declined from 10.8 percent in 1980 to 10.2 percent in 1981. (See table 3.)

The rate of compensation increase for blue-collar workers, which decelerated from 10.1 percent in 1980 to 9.6 percent in 1981, reflected the highly unionized composition of these occupations. Wage gains for blue-collar workers slowed even more than compensation gains, dropping from 9.6 percent in 1980 to 8.6 percent in 1981. This decline in overall blue-collar wage advances was noted in all series.

Manufacturing workers did not post the dampened compensation gains that blue-collar workers did. Their rate of compensation change was identical in 1980 and 1981, at 9.8 percent. However, the pace of manufacturing wage increases did decline noticeably in 1981 (8.7 percent) relative to 1980 (9.4 percent). The first quarter's movement accounts for the difference between the compensation and wage and salary gains over the year. While there was a record 3.5-percent jump in compensation, the gain in wages and salaries was a moderate 2.2 percent. During the same quarter a year earlier, the increases were both 2.8 percent.

Both the durable and nondurable goods industries showed a pattern of deceleration of pay advances over the year which was similar to that for manufacturing as a whole.

In contrast to the slowdown evident in highly unionized sectors of the economy, nonunion workers and white-collar workers posted greater gains during 1981 than in 1980. Wages for nonunion workers rose 8.5 percent in 1981 compared with 8.0 percent the prior year. White-collar workers posted 9.1-percent wage gains in 1981, up from 8.7 percent in 1980. Similarly, white-collar compensation increases were higher in 1981 (10.1 percent) than in 1980 (9.5 percent).

Many of the year-to-year differences occurred because of record increases in first-quarter 1981. In that quarter, nonunion wage gains were 3.3 percent, up from 2.5 percent in 1980. White-collar workers received increases of 3.1 percent compared with 2.4 percent in first-quarter 1980. Within the white-collar group, catch-up increases

Table 1. Employment Cost Index for compensation (wages, salaries, and employer costs for employee benefits), civilian nonfarm workers,[1] by occupation and industry group, December 1979–81

[Not seasonally adjusted]

Series	Indexes (June 1981 = 100)									Percent changes for		
	1979	1980				1981				12 months ended	3 months ended	12 months ended
	Dec.	March	June	Sept.	Dec.	March	June	Sept.	Dec.	Dec. 1980	Dec. 1981	
Civilian nonfarm workers[1]	—	—	—	—	—	—	100.0	102.6	104.5	—	1.9	—
Workers, by occupational group:												
White-collar workers	—	—	—	—	—	—	100.0	102.7	104.9	—	2.1	—
Blue-collar workers	—	—	—	—	—	—	100.0	102.3	104.1	—	1.8	—
Service workers	—	—	—	—	—	—	100.0	102.8	104.2	—	1.4	—
Workers, by industry division:												
Manufacturing	—	—	—	—	—	—	100.0	102.1	104.0	—	1.9	—
Nonmanufacturing	—	—	—	—	—	—	100.0	102.8	104.8	—	1.9	—
Services	—	—	—	—	—	—	100.0	104.4	107.1	—	2.6	—
Public administration[2]	—	—	—	—	—	—	100.0	104.3	106.0	—	1.6	—
Private nonfarm workers[3]	86.3	88.6	90.7	92.8	94.7	98.1	100.0	102.0	104.0	9.8	2.0	9.8
Workers, by occupational group:												
White-collar workers	86.3	88.7	90.8	92.6	94.5	98.3	100.0	101.8	104.0	9.5	2.2	10.1
Blue-collar workers	86.2	88.3	90.5	93.0	94.9	97.8	100.0	102.2	104.0	10.1	1.8	9.6
Service workers	86.2	89.9	90.8	92.7	94.3	99.3	100.0	101.9	103.1	9.4	1.2	9.3
Workers, by industry division:												
Manufacturing	86.3	88.7	90.5	92.6	94.7	98.0	100.0	102.1	104.0	9.8	1.9	9.8
Nonmanufacturing	86.3	88.6	90.8	92.9	94.7	98.2	100.0	102.0	103.9	9.8	1.9	9.7
State and local government workers	—	—	—	—	—	—	100.0	105.3	107.4	—	2.0	—
Workers, by occupational group:												
White-collar workers	—	—	—	—	—	—	100.0	105.7	107.8	—	2.0	—
Blue-collar workers	—	—	—	—	—	—	100.0	104.2	105.9	—	1.6	—
Workers, by industry division:												
Services	—	—	—	—	—	—	100.0	105.8	107.9	—	2.0	—
Schools	—	—	—	—	—	—	100.0	106.0	107.9	—	1.8	—
Elementary and secondary	—	—	—	—	—	—	100.0	106.3	108.3	—	1.9	—
Hospitals and other services[4]	—	—	—	—	—	—	100.0	105.0	107.8	—	2.7	—
Public administration[2]	—	—	—	—	—	—	100.0	104.3	106.0	—	1.6	—

[1] Excludes private household and Federal workers.

[2] Consists of legislative, judicial, administrative, and regulatory activities.

[3] Excludes private household workers.

[4] Includes, for example, library, social, and health services.

NOTE: Dashes indicate data not available.

Table 2. Employment Cost Index for wages and salaries of civilian nonfarm workers,[1] by occupation and industry group, December 1979–81

[Not seasonally adjusted]

Series	Indexes (June 1981 = 100)									Percent changes for		
	1979	1980				1981				12 months ended	3 months ended	12 months ended
	Dec.	March	June	Sept.	Dec.	March	June	Sept.	Dec.	Dec. 1980	Dec. 1981	
Civilian nonfarm workers[1]	—	—	—	—	—	—	100.0	102.5	104.4	—	1.9	—
Workers, by occupational group:												
White-collar workers	—	—	—	—	—	—	100.0	102.6	104.7	—	2.0	—
Blue-collar workers	—	—	—	—	—	—	100.0	102.4	104.0	—	1.6	—
Service workers	—	—	—	—	—	—	100.0	102.5	103.6	—	1.1	—
Workers, by industry division:												
Manufacturing	—	—	—	—	—	—	100.0	102.1	104.0	—	1.9	—
Nonmanufacturing	—	—	—	—	—	—	100.0	102.7	104.5	—	1.8	—
Services	—	—	—	—	—	—	100.0	104.4	106.6	—	2.1	—
Public administration[2]	—	—	—	—	—	—	100.0	103.8	105.5	—	1.6	—
Private nonfarm workers[3]	87.5	89.6	91.5	93.5	95.4	98.0	100.0	102.0	103.8	9.0	1.8	8.8
Workers, by occupational group:												
White-collar workers	87.6	89.7	91.4	93.3	95.2	98.1	100.0	101.8	103.9	8.7	2.1	9.1
Professional and technical workers	86.3	89.2	90.8	93.2	95.3	98.2	100.0	103.3	105.5	10.5	2.1	10.7
Managers and administrators	88.3	90.6	92.0	93.5	94.7	98.6	100.0	101.6	102.8	7.2	1.2	8.6
Sales workers	88.9	88.5	90.7	92.2	94.8	96.2	100.0	98.0	101.9	6.7	4.0	7.5
Clerical workers	87.7	90.3	91.9	93.8	95.7	98.6	100.0	102.7	104.2	9.1	1.5	8.9
Blue-collar workers	87.4	89.3	91.6	93.8	95.7	97.7	100.0	102.3	103.9	9.6	1.6	8.6
Craft and kindred workers	87.8	89.3	91.4	94.0	96.1	97.8	100.0	102.9	104.3	9.4	1.4	8.5
Operatives, except transport	86.6	89.4	91.5	93.6	95.5	97.8	100.0	102.1	104.1	10.2	2.0	9.0
Transport equipment operatives	88.1	89.1	92.2	93.5	95.3	96.8	100.0	101.0	102.7	8.2	1.7	7.8
Nonfarm laborers	87.4	89.6	91.8	93.9	95.7	97.5	100.0	101.5	103.3	9.5	1.8	7.9
Service workers	87.7	90.8	91.9	93.4	94.8	99.2	100.0	101.8	102.7	8.1	.9	8.3
Workers, by industry division:												
Manufacturing	87.5	89.9	91.8	93.6	95.7	97.9	100.0	102.1	104.0	9.4	1.9	8.7
Durables	87.1	89.3	91.2	93.5	95.7	97.9	100.0	102.1	104.5	9.8	2.4	9.2
Nondurables	88.1	91.0	92.7	93.8	95.7	97.8	100.0	102.0	103.1	8.6	1.1	7.7
Nonmanufacturing	87.5	89.5	91.3	93.4	95.2	98.1	100.0	102.0	103.8	8.8	1.8	9.0
Construction	88.2	89.3	91.9	94.5	95.9	97.6	100.0	103.0	104.3	8.8	1.3	8.8
Transportation and public utilities	86.0	88.2	90.2	93.1	95.6	97.7	100.0	102.0	103.6	11.1	1.6	8.4
Wholesale and retail trade	88.2	90.5	92.2	93.6	95.1	98.2	100.0	101.3	102.3	7.8	1.0	7.6
Wholesale trade	87.2	89.7	92.1	93.0	95.9	98.5	100.0	102.0	103.4	10.0	1.4	7.8
Retail trade	88.6	90.8	92.2	93.8	94.8	98.1	100.0	101.0	101.9	7.0	.9	7.5
Finance, insurance, and real estate	86.7	87.1	89.4	91.2	93.1	95.7	100.0	98.3	102.3	7.4	4.1	9.9
Services	88.0	90.5	91.9	94.2	95.7	99.6	100.0	103.6	105.8	8.7	2.1	10.6
State and local government workers	—	—	—	—	—	—	100.0	105.0	107.0	—	1.9	—
Workers, by occupational group:												
White-collar workers	—	—	—	—	—	—	100.0	105.4	107.5	—	2.0	—
Blue-collar workers	—	—	—	—	—	—	100.0	103.9	105.5	—	1.5	—
Workers, by industry division:												
Services	—	—	—	—	—	—	100.0	105.5	107.6	—	2.0	—
Schools	—	—	—	—	—	—	100.0	105.7	107.7	—	1.9	—
Elementary and secondary	—	—	—	—	—	—	100.0	106.0	107.9	—	1.8	—
Hospitals and other services[4]	—	—	—	—	—	—	100.0	104.6	107.3	—	2.6	—
Public administration[2]	—	—	—	—	—	—	100.0	103.3	105.5	—	1.6	—

[1] Excludes private household and Federal workers.

[2] Consists of legislative, judicial, administrative, and regulatory activities.

[3] Excludes private household workers.

[4] Includes, for example, library, social, and health services.

NOTE: Dashes indicate data not available.

for managers and administrators in the first quarter, as well as the effect of an 8.1-percent rise in the minimum wage on sales and clerical workers, boosted the overall annual wage increase. While service workers also posted record gains for the first quarter, they showed little difference in gains over the entire year relative to 1980.

In nonmanufacturing, both compensation and wage advances were similar to those experienced in 1980. Compensation was up 9.7 percent in 1981 versus 9.8 percent in 1980, and the comparable wage increases were 9.0 percent and 8.8 percent, respectively. The component industries of nonmanufacturing, however, showed a variety of wage change patterns between the 2 years. Construction posted the same increase (8.8 percent) in both years, while finance, insurance, and real estate, and services—sectors with a high concentration of white-collar employees—showed a large acceleration of wage gains in 1981. Transportation and public utilities, and wholesale trade recorded sharp declines in the rate of increase from 1980 to 1981.

State and local governments

Compensation of State and local government workers rose 5.3 percent in its September introductory quarter, compared with a 2.0 percent rise for private nonfarm workers. The difference between the two series was also

The Employment Cost Index: a chronology

Development of a measure of change in total compensation (wages and benefit costs) began during the early 1970's when concerns about labor cost escalation became particularly acute. At that time, Federal policymakers indicated the need for a measure of labor cost trends which would:

- be timely and comprehensive, covering all types of workers and industries in the U.S. economy and all elements of employee compensation;
- be fixed-weighted so that it would be unaffected by employment shifts among occupations and industries with different wage and compensation levels; and
- have internally consistent subseries (for example, by occupation or industry) to provide insights into overall wage and compensation trends.

The Employment Cost Index was planned in stages to satisfy these needs, beginning with the development of its conceptual and statistical framework during 1971–74. The first publication of ECI statistics in June 1976 presented percent changes for 21 private nonfarm wage and salary series for the quarters ended December 1975 and March 1976. Series were added until trends for 35 private nonfarm wage and salary series were available for the first quarter of 1979. One year later, measures of changes in compensation (wages and salaries plus employer costs for employee benefits) were introduced for six private nonfarm series—total; white-collar, blue-collar, and service workers; and manufacturing and nonmanufacturing industries. Following the publication of the compensation series, the Office of Management and Budget designated the ECI as a "Principal Federal Economic Indicator." During the past year, the State and local government sector was added, and indexes were published for all series.

The Bureau publishes standard (fixed-base-period-employment weighted) ECI indexes (June 1981 = 100) of wages and salaries and of compensation for the civilian nonfarm economy and for a number of subgroups. In addition, special wage and salary indexes are calculated for broad regions, union status, and area size. The currently available ECI indexes and their inception dates are listed below.

ECI series

Indexes of compensation

Civilian nonfarm economy (8 series): total; white-collar, blue-collar, and service workers; manufacturing and nonmanufacturing industries, plus services and public administration. Beginning in *June 1981.*

Private nonfarm economy (6 series): total; white-collar, blue-collar, and service workers; manufacturing and nonmanufacturing industries. *December 1979.*

State and local government (8 series): total; white-collar and blue-collar workers; services, schools, elementary and secondary schools, hospitals and other services, and public administration. *June 1981.*

Indexes of wages and salaries

Civilian nonfarm economy (8 series): total; white-collar, blue-collar, and service workers; manufacturing and nonmanufacturing industries, plus services and public administration. *June 1981.*

Private nonfarm economy (23 series): total; white-collar (plus 4 subseries), blue-collar (plus 4 subseries), and service workers; manufacturing, durables, nondurables, and nonmanufacturing (plus 7 subseries) industries. *September 1975.* Exceptions: Durable manufacturing, nondurable manufacturing, and retail trade are available from *September 1976*; salesworkers from *March 1977*; wholesale trade from *June 1977*; and finance, insurance, and real estate from *December 1978.*

State and local government (8 series): total; white-collar and blue-collar workers; services, schools, elementary and secondary schools, hospitals and other services, and public administration. *June 1981.*

Special indexes of private nonfarm wages

Four regions of the Nation. *September 1975.*

Union and nonunion workers. *September 1975.*

Union and nonunion workers by manufacturing and nonmanufacturing sectors. *September 1976.*

Metropolitan and nonmetropolitan areas. *September 1975.*

Table 3. Employment Cost Index for wages and salaries of private nonfarm workers,[1] by bargaining status, region, and area size, December 1979–81

[Not seasonally adjusted]

Series	Indexes (June 1981 = 100)									Percent changes for		
	1979	1980				1981				12 months ended	3 months ended	12 months ended
	Dec.	March	June	Sept.	Dec.	March	June	Sept.	Dec.	Dec. 1980	Dec. 1981	
Workers, by bargaining status:												
Union	86.4	88.4	90.8	93.5	95.8	97.4	100.0	102.7	105.0	10.9	2.2	9.6
Manufacturing	86.6	88.8	91.3	93.8	96.1	97.7	100.0	102.6	104.7	11.0	2.0	8.9
Nonmanufacturing	86.2	88.0	90.4	93.1	95.5	97.1	100.0	102.8	105.2	10.8	2.3	10.2
Nonunion	88.0	90.2	91.8	93.4	95.1	98.2	100.0	101.6	103.2	8.0	1.6	8.5
Manufacturing	88.4	91.0	92.3	93.4	95.4	97.9	100.0	101.7	103.3	7.9	1.6	8.3
Nonmanufacturing	87.9	89.9	91.5	93.4	95.0	98.3	100.0	101.6	103.2	8.1	1.6	8.6
Workers, by region:												
Northeast	88.4	90.6	92.5	94.2	96.0	98.3	100.0	101.7	104.4	8.6	2.7	8.8
South	87.3	89.7	91.4	93.2	94.9	98.0	100.0	101.9	102.8	8.8	.9	8.3
North Central	87.6	89.7	91.6	93.3	95.3	98.1	100.0	101.6	103.3	8.8	1.7	8.4
West	86.0	88.2	90.4	93.5	95.3	97.9	100.0	103.2	105.1	10.8	1.8	10.3
Workers, by area size:												
Metropolitan areas	87.6	89.4	91.4	93.5	95.4	97.9	100.0	102.1	104.0	9.0	1.9	9.0
Other areas	87.0	90.1	91.5	92.9	95.1	98.3	100.0	101.8	103.1	9.4	1.3	8.4

[1] Excludes private household workers.

NOTE: The indexes for these series are not strictly comparable to those for the aggregate, occupational, and industry series. See G. Donald Wood, Jr., "Estimation procedures for the Employment Cost Index," pp. 40, in this issue.

dramatic for wages and salaries—5.0 percent compared with 2.0 percent. These differences can be explained by a concentration of wage and compensation changes for State and local government workers in the third quarter that does not occur in the private nonfarm sector.

One group that tends to receive annual increases during the September quarter is teachers. This is demonstrated by pay and compensation changes in schools, which rose 5.7 percent and 6.0 percent, respectively. Workers in elementary and secondary schools posted even larger gains in compensation (6.3 percent) and wages (6.0 percent).

The impact that teachers have in these gains is clear from the proportion of workers they represent within these industries. At the State and local level, they account for about one-fifth of total census employment. They make up roughly half of all workers in schools and about 60 percent of all workers in elementary and secondary schools.

Another concentration of pay and compensation increases in the third quarter is due to the timing of State and local jurisdictions' fiscal years. Many governments begin their fiscal year during the third quarter, and these jurisdictions frequently link compensation changes to the start of the fiscal year.

While these types of gains were not as large or as widespread as those for teachers, they were clearly greater than those in the private sector. For example, blue-collar State and local government workers posted an average compensation change of 4.2 percent, compared with only 2.2 percent for private nonfarm blue-collar workers.

The collection of wage and benefit data from establishments in State and local government is a major improvement of the ECI program. The addition of 13.3 million State and local government workers to the 74.5 million surveyed in the private nonfarm sector brings ECI coverage to nearly 88 million workers.[3] The ECI is the only source of quarterly measures of compensation change for all State and local government workers.

Initial data collection for the government units, begun in June 1980, was completed in January 1981; quarterly collection began in March 1981. The series was calculated and reviewed on a test basis for the March and June quarters. After all aspects had been assessed, the first percent changes, relating to the third quarter, were published. Statistics on civilian nonfarm workers (excluding Federal employees), which combine private nonfarm and State and local government data,[4] were also released at that time.

The method for measuring base-period cost and calculating quarterly change for establishments in State and local government is the same as that used for establishments in the private nonfarm sector. State and local government data are taken from 750 sample establishments. Data are collected for about five narrowly defined occupations in each sampled establishment. This results in a total of about 3,700 establishment-occupation observations. The specific jobs for which data are collected in each establishment are selected by the BLS representative who visits the establishment. The selection is based upon probability sampling and uses the establishment's job titles and employment. As in the private nonfarm sector, occupations are classified based on categories used in the 1970 census, while each government unit is designated in an industry according to a 1972 Standard Industrial Classification defined by the U.S. Office of Management and Budget.

Index numbers

The private nonfarm wage and salary index (June 1981=100) went from 64.0 in September 1975 to 103.8 in December 1981, an increase of 62.2 percent.[5] Most industry and occupation wage gains were closely clustered around the aggregate—white-collar workers, 59.4 percent; blue-collar workers, 66.2 percent; service workers, 61.7 percent; manufacturing workers, 65.3 percent; and nonmanufacturing workers, 60.7 percent.

The ECI industry and occupation indexes are standard Laspeyres indexes, similar to the Consumer Price Index in concept and form. The CPI compares what it would cost to purchase a fixed set of consumption items at current prices to what it would cost to purchase the same set of items at prices that existed in the reference period. The ECI compares what it would cost employers at current wages (or compensation costs) to hire a fixed set of labor inputs (employment in specific occupations in specific industries) to what it would have cost to hire the same set of labor inputs at reference-period wage or compensation levels.

Special wage and salary indexes are calculated for broad regions, and by union status and area size. The formula for these indexes cannot be expressed in a standard Laspeyres index number form, but they are a form of chain index. That is, each quarter the change in wages is estimated using a fixed set of employment weights based on that quarter's sample. The index is developed by taking the product of the quarterly relatives. Further explanation of ECI index techniques is given in the technical note on page 40 of this issue.

MUCH PROGRESS HAS BEEN MADE toward making the ECI the type of labor cost trend indicator it was designed to be. It is a comprehensive, fixed-weight measure with internally consistent subseries. Benefit costs in addition to wages are included, and worker coverage has been expanded to State and local governments. The introduction of standard Laspeyres indexes in December 1981 guarantees the fixed-weight nature of the industry and occupation subseries. In addition, the special indexes by bargaining status, region, and area size, while not fixed-base-period weighted, aid in analyzing wage and salary trends.

Long range objectives include introduction of additional compensation series, publication of benefit cost changes, and coverage of the Federal civilian work force.

FOOTNOTES

[1] Data are collected for the pay period including the 12th day of the last month of each quarter—March, June, September, and December.

[2] For further information on collective bargaining in 1981, see George Ruben, "Organized labor in 1981: a shifting of priorities," *Monthly Labor Review*, January 1982, pp. 21–28.

[3] In the base year of 1970, there were 9.8 million State and local government workers and 58.3 million private nonfarm workers.

[4] All ECI series exclude farm and private household workers.

[5] Percent changes for any period can be calculated by dividing the more recent quarter's index by the earlier index, subtracting 1 from the result, and then multiplying by 100. For example, the steps in the calculation of percent change for the private nonfarm compensation series from December 1980 to December 1981 are as follows:

1) $\frac{\text{December 1981 index} = 104.0}{\text{December 1980 index} = 94.7} = 1.098$

2) $1.098 - 1 = .098$

3) $.098 \times 100 = 9.8$ percent

Time rates tighten their grip on manufacturing industries

Incentive pay plans continued to drop in popularity in 37 industries comparing incidence for the 1973–80 period with that for 1961–68; but alternative methods of motivating workers drew more attention from labor and management

NORMA W. CARLSON

Despite mounting concern in recent years over limited productivity gains in the Nation's manufacturing industries, interest in incentive pay systems seems to be declining as a way to stimulate worker output. A review of wage payment plans in manufacturing industries found that time rates continue to cover the great majority of production and related workers rather than losing their grip; time-rated systems are actually strengthening their hold in U.S. factories.

Emphasis on machine-paced manufacturing operations is a major reason for the limited incidence of incentive plans. As in earlier years, incentives tend to be concentrated in the restricted group of industries where workers can exert substantial influence on the rate of output. However, the widespread application of time rates does not mean that the impact of workers on production is being ignored. Various innovative programs, many independent of compensation systems, have emerged to address the issue of worker motivation.

This article examines recent trends in incentive and time-rated payments in manufacturing. It also explores factors that have influenced the movement toward time pay. Finally, the article highlights developments in the quality-of-worklife movement that seeks, among other goals, to motivate workers to higher performance on the job. Data were obtained from the Bureau of Labor Statistics' nationwide occupational wage surveys in selected manufacturing industries. These surveys collect information on occupational wage rates and the incidence of certain establishment practices, such as methods of wage payment, for about 50 manufacturing industries. Thirty-seven were selected for this study on the basis of available data for two 7-year periods, 1961–68 and 1973–80. The periods were defined over several years because the industries on the survey roster are studied every 3 to 5 years, not annually. The sample was also restricted to industries defined at the 4-digit level of detail in the Standard Industrial Classification Manual prepared by the U.S. Office of Management and Budget. Altogether for both periods examined, the 37-industry group represents about a quarter of the production and related workers in all manufacturing.[1] The span between observations for a single industry ranged from 10 years to 18; the average was 14 years.

Methods of wage payment

Workers are paid under a wide variety of incentive or time-rated plans.[2] Incentive plans, which establish a close link between output and earnings, are intended to fill a dual role, that is, to both stimulate worker efficiency and provide a system of employee compensation. In contrast, time-payment plans base earnings on a fixed hourly or weekly rate and rely heavily on supervi-

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sory skills to maintain quantity and quality of work.

Early in the Nation's industrial era, the basic methods of pay were simple piece rates and day rates. But as the manufacturing sector grew and mechanization of production increased, compensation plans became more complex. The scientific management movement dating from the early 1900's sparked wide experimentation with numerous incentive plans devised by Frederick W. Taylor and his colleagues. Some of these plans are still in use today, such as the Halsey, Rowan, and Bedaux systems, but many have been modified.[3] In the 1930's, measured daywork plans were introduced in factories with time-payment systems, incorporating a measure of control of worker performance through production standards.[4] Today, an assortment of incentive and time-rated plans offers features which are adaptable to the varying situations found in modern industrial plants.

Incentive workers may receive either piece rates or production bonuses. Payments under incentive systems may be based on either individual or group performance. Time-rated wage plans include both formal and informal arrangements. The former provide single rates or ranges of rates for specific job categories. Pay rates under informal plans are determined primarily by the qualifications of the individual worker (table 1).

Bureau studies since World War II document both the dominance of time-based plans and the gradual drop in the proportion of factory workers paid under incentive systems. A summary prepared in 1947 indicated that for 56 manufacturing industries, 30 percent of

Table 1. Method of wage payment in manufacturing, by number of production and related workers covered and by type of plan, 1973–80[1]

[In percent]

Industry and survey date	Production workers (in thousands)	Time-rated workers				Incentive workers				
		Total	Single rate	Range of rates	Individual rates	Total	Individual		Group	
							Piecework	Bonus	Piecework	Bonus
Meatpacking, 5/79	104.3	[2]90	72	10	7	10	(³)	3	2	5
Prepared meat, 5/79	48.8	[2]96	59	24	12	4	(⁴)	(⁴)	(⁴)	(⁴)
Flour and other grain mill, 9/77	10.6	99	85	7	8	1	(⁴)	(⁴)	(⁴)	(⁴)
Candy and other confectionery, 8/75	40.3	89	33	45	11	11	4	1	1	5
Cigarettes, 5/76	32.8	100	63	37	(³)	(³)	(⁴)	(⁴)	(⁴)	(⁴)
Cotton and manmade fiber textiles, 8/80	288.5	70	66	4	(³)	30	28	1	(³)	1
Wool yarn and broadwoven fabric, 8/80	13.1	75	63	7	5	25	14	7	2	2
Textile dyeing and finishing, 6/76	51.5	90	65	20	6	10	5	3	1	1
Women's hosiery, 7/76	23.8	37	2	18	17	63	62	(³)	(³)	(³)
Hosiery, except women's, 7/76	23.9	39	1	7	31	61	59	1	1	(³)
Men's and boys' shirts, (except work shirts) and nightwear, 5/78	85.4	22	2	5	14	78	77	1	1	(³)
Men's and boys' suits and coats, 4/79	61.4	25	3	6	16	75	74	1	(³)	(³)
Wood household furniture (except upholstered), 6/79	137.2	88	10	55	23	12	3	2	3	4
Pulp, paper, and paperboard mills, 7/77	147.9	97	90	8	(³)	3	(⁴)	(⁴)	(⁴)	(⁴)
Corrugated and solid fiber boxes, 3/76	61.9	75	61	9	5	25	3	8	3	12
Industrial chemicals, 6/76	129.9	99	62	35	2	1	(⁴)	(⁴)	(⁴)	(⁴)
Cellulosic fibers, 8/76	10.8	98	60	38	(³)	2	(⁴)	(⁴)	(⁴)	(⁴)
Noncellulosic fibers, 8/76	51.9	98	67	31	(³)	2	(⁴)	(⁴)	(⁴)	(⁴)
Paints and varnishes, 11/76	27.6	100	44	43	12	(³)	(⁴)	(⁴)	(⁴)	(⁴)
Petroleum refining, 4/76	63.3	99	88	11	(³)	1	(⁴)	(⁴)	(⁴)	(⁴)
Miscellaneous plastics, 9/74	236.4	95	19	64	12	5	(⁴)	(⁴)	(⁴)	(⁴)
Leather tanning and finishing, 3/73	16.7	[2]55	30	15	10	44	28	7	7	1
Footwear, 4/80	76.2	27	3	9	15	73	71	2	(³)	(³)
Glass containers, 5/80	54.5	88	69	19	(³)	12	1	6	(³)	4
Other pressed or blown glass, 5/80	28.4	79	32	47	(³)	21	3	8	6	4
Brick and structural clay tile, 9/80	11.7	[2]80	41	23	16	18	8	1	6	3
Ceramic wall and floor tile, 9/75	5.2	68	43	19	6	32	10	7	8	7
Clay refractories, 9/80	6.3	80	59	19	2	20	11	3	5	2
Clay sewer pipe, 9/75	4.3	76	62	11	3	24	9	1	4	9
Basic iron and steel, 2/78	345.0	20	(⁶)	(⁶)	(⁶)	80	(⁶)	(⁶)	(⁶)	(⁶)
Grey iron foundries, except pipe and fittings, 9/79	93.1	82	54	25	4	18	9	4	3	2
Grey iron foundries, pipe and fittings, 9/79	15.2	77	32	44	(³)	23	1	12	1	9
Steel foundries, 9/79	52.6	79	39	36	3	21	10	3	4	3
Nonferrous foundries, 5/75	54.4	82	36	33	13	18	6	8	1	3
Fabricated structural metal, 11/79	51.9	96	37	44	19	4	(⁴)	(⁴)	(⁴)	(⁴)
Motor vehicle parts, 4/74	242.1	73	35	35	2	27	12	7	4	5
Motor vehicles, 12/73	611.4	98	(⁶)	(⁶)	(⁶)	2	(⁴)	(⁴)	(⁴)	(⁴)

[1] Estimates of the number of production workers within the scope of the study and percentages based upon them are intended as a general guide rather than a precise measure of the industry's work force and relative importance of wage payment plans in each industry. Nearly all incentive wage plans provide for a rate guarantee to workers if production standards are not met. For this tabulation, all production and related workers eligible to receive incentive earnings have been counted as incentive-paid workers, regardless of whether they received earnings above guarantees. Plans such as Christmas or yearend bonuses and profit-sharing were not considered as incentive wage plans.

Industry studies nearly always have a minimum establishment size cutoff which may vary between studies for the same industry; establishments under the cutoff usually account for less than one-tenth of the industry's work force. Minimum size cutoffs varied from none for cigarettes, synthetic fibers, and motor vehicles to 250 workers for basic iron and steel; the most common minimum was 20 workers.

[2] Excludes, "stint workers," those receiving a fixed daily rate for a predetermined amount of work regardless of the time required to complete the task.

[3] Less than 0.5 percent.

[4] Information by type of plan was not tabulated for industries with less than 6 percent of the workers paid on a time or incentive basis.

[5] No data reported.

[6] Information not available by type of wage payment.

NOTE: Because of rounding, sums of individual items may not equal totals.

production and related workers were on incentive pay plans.[5] In May 1958, a survey of factory workers' earnings found that 27 percent of all manufacturing production workers were paid on an incentive basis.[6] Data from the Bureau's area wage surveys on incentive pay coverage of plant workers in metropolitan area factories show a drop in coverage from 26 percent in 1961–63 to 20 percent in 1968–70.[7]

This decline in the incidence of incentive pay systems has coincided with lagging productivity gains in manufacturing. A number of studies have related the lag, in part, to worker attitudes and behavior.[8] Advocates of incentive systems have therefore argued that such arrangements are valuable managerial tools for improving efficiency and boosting productivity.[9]

During 1973–80, the median proportion of workers on time rates was 82 percent (chart 1), up from 75 percent for 1961–68.[10] Thirty-one of the 37 industries studied paid a majority of their production workers on a time basis. Eight industries paid time rates to at least 98 percent of their work forces. These were cigarettes, paints and varnishes, petroleum refining, flour milling, industrial chemicals, noncellulosic fibers, motor vehicles, and cellulosic fibers.

Seven of the eight industries share certain characteristics. Their production departments, which employ the bulk of the work force, are equipped primarily with automatic and semi-automatic machinery. Although the equipment requires monitoring, the machine tenders have little or no control over the pace of output. For example, in petroleum refining, crude oil flows almost continuously in closely interrelated refining units from the time it is received until finished products are shipped to customers. Even cigarettes are produced automatically throughout the fabrication, packaging, and inspection processes. Automobile production, although it actively involves workers in the process, is primarily paced by the speed of the assembly line.

In the remaining 23 industries emphasizing time-rated pay, coverage ranged from 97 percent of workers to 55 percent. This variation partly reflected marked differences in production processes and types of machines used. The pulp, paper, and paperboard industry, with 97 percent of its work force paid time rates, uses mechanical and chemical processing equipment and machines that are among the largest in industry, which workers operate and maintain. In contrast, the leather tanning industry, with 55 percent of its production workers on time rates, requires considerable handling of hides and skins. Hand tools are used extensively by such workers as tackers, about three-fourths of whom were reported on incentives in 1973. The equipment in the plants is largely under the control of the operator. For example, machine buffers and embossing-press or plating-press operators, both largely incentive jobs, are responsible for starting and feeding the machines.

Six industries relied chiefly, but not exclusively, on incentive wage payment plans. Incentive coverage ranged from 61 percent in the men's and children's hosiery industry to 80 percent in basic iron and steel. The other four industries stressing incentive systems were women's hosiery, leather footwear, men's and boys' suits and coats, and men's and boys' shirts. The workplaces in these factories, with the exception of basic iron and steel, are equipped with machines that are largely under the control of the operators. In men's apparel (suits and coats, and shirts), for example, sewing machine operators, who account for nearly half of the work force, can exercise considerable discretion over the pace of their work. Moreover, their output is identifiable and measurable. Individual piece rate plans are the leading pay method in the men's apparel, hosiery, and footwear industries, covering between 60 percent and 75 percent of workers. The occupations that are paid hourly rates include those in maintenance and custodial departments.

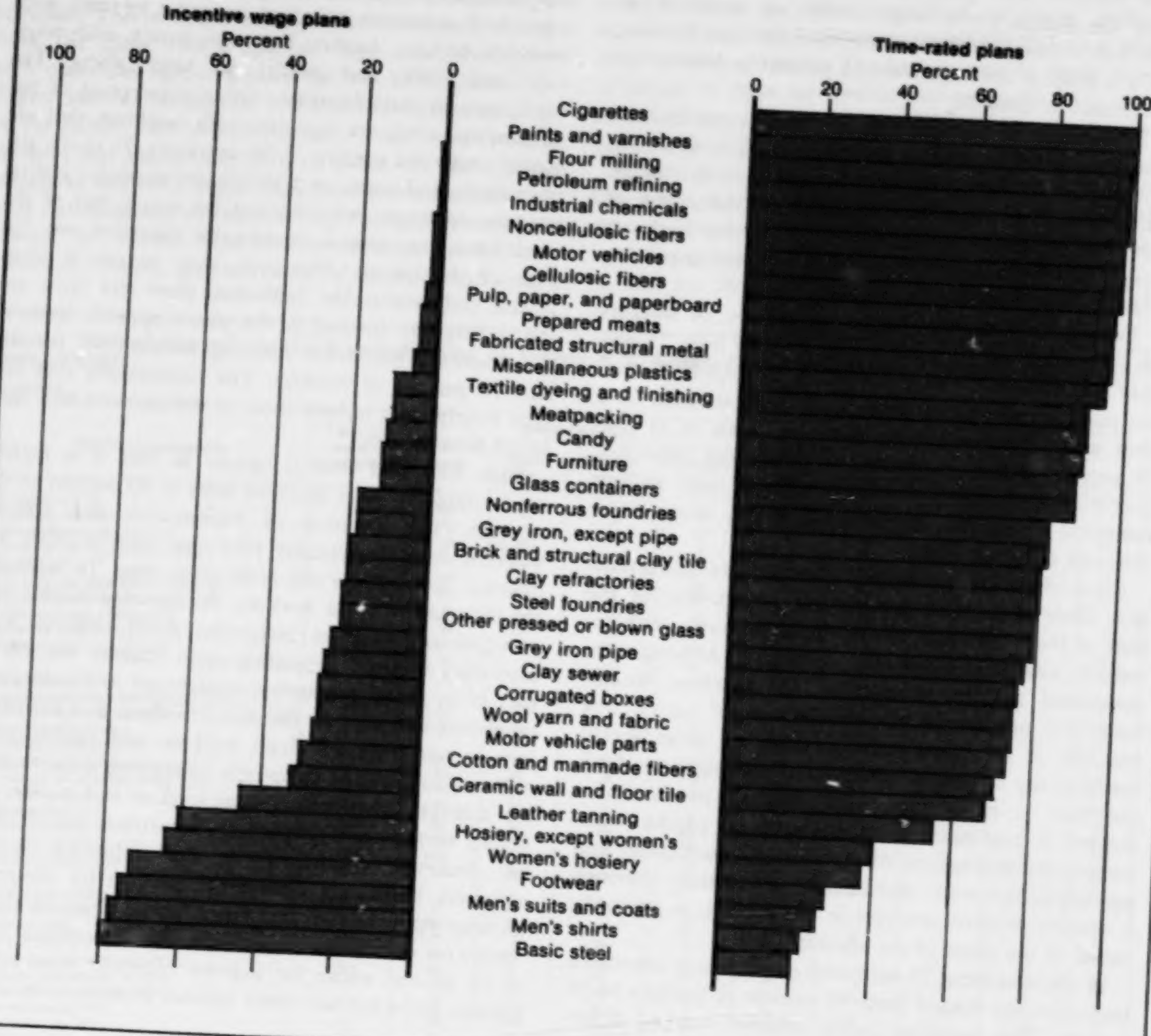
Basic iron and steel is unique in that it is highly mechanized but pays incentive rates to 80 percent of its workers. The inclusion of maintenance and service workers, who are typically paid time rates in other industries, accounts for this large proportion. To facilitate the inclusion of these workers, the industry divided the occupations into three categories, direct, indirect, and secondary indirect, depending upon whether the job is part of an actual production department or involves assignments that support the direct workers. For example, furnace operators are direct workers, and maintenance millwrights assigned to specific production departments are indirect. Other maintenance workers and general laborers who are not assigned by department are secondary indirect. Guidelines in the industry's major collective bargaining agreements provide for incentive earnings opportunities that range from 35 percent above "incentive calculation rates"[11] for direct incentive jobs, to 23 percent above for indirect incentive jobs, to 12 percent above for secondary indirect incentive jobs.

Recent trends

In 26 of the 37 industries studied, worker coverage under time-rated systems for 1973–80 increased over that for 1961–68. The increase ranged from as little as 1 percentage point to as much as 26 points (table 2). All but 3 of the 26 industries had already extended time pay to more than half of their production workers during 1961–68. In one of the exceptions, women's hosiery, coverage under time rates rose from 25 percent to 37. In another, men's and children's hosiery, it rose from 30 percent to 39. In the third, leather tanning, coverage increased from 48 percent to 55.

The most striking growth of time-rated pay systems

Chart 1. Percent of production and related workers covered by time-rated or incentive wage plans in selected manufacturing industries, 1973-80



occurred in the glass container industry, where the proportion of time workers rose 26 percentage points, and the meatpacking industry, where it rose by 24. In the glass container industry, 88 percent of production workers were paid time rates in 1980, up from 62 percent in 1964. The expanded coverage is mainly attributable to action taken in the late 1960's to eliminate incentive earnings for large numbers of workers. The major producers and the two leading unions, the Glass Bottle Blowers and the American Flint Glass Workers, recognized that the incentive plans had become cumbersome and costly to administer. They agreed to pay time rates to maintenance and service workers and to some direct production workers who had been on incentives, in exchange for an across-the-board pay increase that ensured no loss in earnings.

In meatpacking, nine-tenths of the production workers were paid time rates in 1979, up from two-thirds in 1963. This increase partly reflects the implementation of time plans in new plants opened by major producers. A comparison of the occupations in multiplant establishments studied in 1963 and 1979 shows a substantial decline in incentive coverage in the cutting, processing, custodial, and material movement departments. Changes in beef-cutting techniques, introduced by a few new producers, also contributed to shifts in pay plan coverage. In the new process, carcasses attached to a conveyor are divided into smaller cuts as each worker on the line performs a limited number of cutting and trimming operations. The cuts are vacuum sealed, boxed, and shipped to supermarkets and butcher shops. Workers in these "boxed beef" occupations, virtually all paid time rates, accounted for slightly more than half the beef-cutting department employment in the 1979 meat products survey.

Other industries reporting increases in coverage under time systems typically experienced a shift to automatic and semi-automatic machines. For example, the dehacking and setting processes in structural clay products manufacturing, once done manually, are now performed automatically in many plants. Many larger corrugated box plants are now almost fully automated, thus eliminating numerous hand operations, such as bundling, packing, and taping.

Only five industries reported increases in incentive plan coverage, mostly marginal. Two of the five (men's and boys' shirts and leather footwear) were predominantly incentive industries in the 1960's, with at least seven-tenths of the workers in each earning piece rates. Only one industry, basic iron and steel, reported a significant increase in incentive coverage, from 66 to 80 percent, between 1962 and 1979. This rise for the industry as a whole largely reflects the impact of developments in the 1968 bargaining round between the United Steelworkers of America and the 11 major companies in the industry. The union reportedly was seeking incentive pay for all workers. Producers hoped to limit the extent of incentive coverage. The impasse led to arbitration. The panel ruled that each of the 11 companies was to extend incentive coverage to at least 85 percent of its production and maintenance employees on a companywide basis, and not less than 65 percent in each plant.

The remaining six industries recorded no change in proportional coverage under the two basic methods of wage payment. Among them are highly automated industries, flour milling, cigarettes, petroleum refining, and the traditionally incentive suits and coats industry. Nonferrous foundries and motor vehicles also reported no change.

Method linked to multiple factors

The choice between time rates and incentive pay depends on such factors as technological and economic environments, managerial preferences, and union philosophies.

Table 2. Percentage of production and related workers covered by time-rated wage payment plans in selected manufacturing industries, 1961–68 and 1973–80

Industry	Percentage of time-rated workers		Percentage point change
	1961-68	1973-80	
Glass containers	62	88	+26
Meatpacking	66	90	+24
Other pressed or blown glass	64	79	+15
Cellulosic fibers	84	98	+14
Candy and other confectionery products	75	89	+14
Brick and structural clay tile	68	80	+12
Women's hosiery	25	37	+12
Corrugated and solid fiber boxes	64	75	+11
Ceramic wall and floor tile	58	68	+10
Hosiery, except women's	30	39	+9
Miscellaneous plastics products	87	95	+8
Wood household furniture, except upholstered	80	88	+8
Pulp, paper and paperboard mills	90	97	+7
Grey iron except pipe and fittings	75	82	+7
Leather tanning and finishing	48	55	+7
Industrial chemicals	95	99	+4
Prepared meat products	92	96	+4
Fabricated structural metal	92	96	+4
Clay refractories	76	80	+4
Steel foundries	75	79	+4
Motor vehicle parts	69	73	+4
Paints and varnishes	98	100	+2
Grey iron pipe and fittings	75	77	+2
Wool yarn and broadwoven fabric	73	75	+2
Cotton and manmade fiber textiles	68	70	+2
Textile dyeing and finishing	89	90	+1
Cigarettes	100	100	0
Flour and other grain mill products	99	99	0
Petroleum refining	99	99	0
Motor vehicles	98	98	0
Nonferrous foundries	82	82	0
Men's and boys' suits and coats	25	25	0
Noncellulosic fibers	99	98	−1
Clay sewer pipe	77	76	−1
Men's and boys' shirts	23	22	−1
Leather footwear	30	27	−3
Basic iron and steel	33	20	−13

Machine-paced production. Highly automated industries virtually rule out incentive wage systems because workers have little or no control over the pace of production or the volume of output. Conversely, incentive pay is widespread in industries where workers can exercise such control.

To illustrate, the amount of fixed assets per worker was compared with the incidence of time-rated workers for 35 of the 37 industries. The assumption was that the higher levels of assets per worker reflected more machine-paced operations and, therefore, would be associated with higher worker coverage under time pay.[12]

The heavy processing industries with per-worker assets well above the $25,000 median for the group have higher incidences of time-rated workers. The traditional incentive industries showed assets ranging between $3,000 and $13,000. Again, the exception among the heavy industries is basic iron and steel. Unlike the extremes in this comparison, the middle group of industries in terms of per-worker assets produced a mixed pattern of pay plans and asset levels.

Among this middle group are fabricated structural metals and nonferrous foundries, whose high proportions of time workers and low levels of assets are partly attributable to certain characteristics of these industries.

They are composed mostly of small to medium size job or order shops, producing varied product lines in short production runs. Such conditions of constant change and nonstandardized tasks make incentive systems difficult, if not infeasible, to install.

Managerial preferences. The technological and economic environment clearly determine the feasibility of a pay method in certain industries.[13] But in others, more subjective factors may influence managers. Among these are the complexities involved in designing and implementing incentive plans. For example, rather than undertake the costs and uncertainties involved in establishing performance standards that effectively motivate the worker, some managers prefer to pay hourly rates. Difficulties in making allowances for conditions that might reduce a worker's full production potential, such as frequent interruption in the flow of materials or mechanical breakdowns, also argue against incentive plans.

The more complex the design of an incentive plan, the more care is required in administering it. Foremen can become preoccupied with recording nonstandard conditions and handling questions and grievances on rules relating to work flow and work distribution. If only part of the production work force receives incentive wages, a feeling of inequity can develop among timeworkers whose jobs rank higher in terms of education and responsibility, but not in pay. These conditions can, of course, generate inefficiencies in the workplace.[14]

Complications that emerge during periods of rapid innovation tend to compound these problems. Changes in production facilities, techniques, or product assortment require revision of performance standards if worker motivation and effort is to be maintained. If standards are not redefined to fit changing conditions, incentive plans may become "demoralized."[15] This term implies high levels of earnings for low levels of effort. Eventually, such conditions can affect a plant's competitive position.

Union preferences. Trade unions have not maintained a consistent position on methods of wage payment.[16] Union preferences have been influenced by an industry's technological and economic environment and by their goal of rewarding workers equally for the same kind of work.

In those industries where incentive plans could be reconciled with this goal, unions have adapted to incentives. The majority of these industries are characterized by labor intensive production methods and a highly competitive product market. In certain apparel industries, for example, unions historically have negotiated the schedule of piece rates, thus achieving some control over worker pay.

Unions have been able to harmonize their goal with the use of incentives, even in highly mechanized industries such as basic iron and steel. Underlying the incentive system in basic steel is a common job and pay system designed jointly by the Steelworkers and the major producers. This system is based on a highly uniform job evaluation procedure among the companies that assigns point values to jobs on the basis of 12 factors that include such major concerns as experience, skill, responsibility, effort, and working conditions.

Other approaches to motivation

The post-World War II growth in time-rated pay systems has been accompanied by concern over rising inefficiencies in the workplace. Questions are being raised as to the effectiveness of methods of pay as motivators, and attention is focusing on other means to improve efficiency.[17]

Pay methods tap the self-interest of the worker, but many of the other approaches are designed to help the worker identify with the long-term interests of the enterprise. Such identification would presumably result in better interpersonal relationships, stronger job interest and satisfaction, less absenteeism and waste, and lower rates of turnover, all of which would lead to productivity improvements.[18]

Productivity enhancement, however, is not the sole objective of these approaches, known generally as quality-of-worklife improvement programs. This umbrella term covers a diversity of ventures, a number of which are still both experimental and controversial. In some instances, allegedly, the programs have been introduced to circumvent union representation. In other instances, they have had joint union-management sponsorship.[19] Some quality-of-worklife programs explicitly link financial reward to program results. Other approaches stress such motivators as the worker's need for personal fulfillment on the job, recognition, and involvement in corporate decisionmaking.

Among the quality-of-worklife approaches that are compensation related are Scanlon plans. Initiated by the late Joseph Scanlon in the 1930's, they are designed to motivate all employees to improve production methods and to suggest ways to cut costs. One of the important elements of Scanlon plans is a system of joint shopfloor and plantwide review committees that meet regularly to discuss and evaluate worker suggestions for work improvement. Another unique feature is a plantwide incentive arrangement based on measuring productivity changes and a formula for distributing savings in the form of monthly bonuses.[20]

Other efforts link rewards to the overall profitability of the firm, such as profit-sharing and stock plans. Profit-sharing cash plans usually distribute a part of profits to employees annually. Under deferred versions, the employer makes payments to a trust for the benefit of the employee, who usually receives final distribution at retirement.[21] Stock plans traditionally permitted employees to buy company stock, often at a discount, through payroll deductions over a year. The stock purchased was distributed shortly after the closing date specified. However, under current employee stock ownership plans, delivery is deferred until the employee leaves the plan or retires. Because of special tax benefits enacted in 1975, the number of such plans has grown from about 200 in 1975 to nearly 5,000 plans in 1980.[22]

Not all programs that seek to promote worker support of collective goals of the firm are directly linked to compensation. Some draw upon the expertise and creativity of the work force to help redesign and reorganize production operations, thereby involving workers in decisionmaking. Although not always a primary objective, productivity improvement has been reported as a result of some of these efforts.[23] Interest in worker participation in decisionmaking has grown since the early 1970's, even though the concept was discussed much earlier. The basic framework for worker participation is the labor-management committee, which functions as an advisory body to management on a wide assortment of workplace issues. These issues range over topics such as absenteeism, safety, waste reduction, reorganization of the shopfloor, forecasting manpower requirements, and training programs. Such committees can now be found in a wide variety of industries, including basic steel and auto manufacturing.[24] Generally, committees in organized plants are separate from the collective bargaining framework. In the case of the United Auto Workers-General Motors approach, the members of the local union shop committee serve on the quality-of-worklife committee.[25]

Another type of advisory group, Quality Circles, has recently gained prominence. Unlike labor-management committees, these bodies are composed solely of employees. They meet voluntarily on company time to define workplace problems, discuss solutions, and formulate strategies to eliminate the problems.[26]

THE TREND TOWARD PROGRAMS that enhance workers' roles in factories will probably continue as labor and management search for ways to make the workplace more efficient. The movement reflects in part, changing perceptions by workers, unions, and managers, of their roles. There is little likelihood, however, that the relative incidence of time and incentive methods of pay in U.S. plants will change greatly from present levels, given the dominance of machine-paced operations. ☐

—— *FOOTNOTES* ——

[1] The sample is relatively small because several manufacturing industries in the wage survey program were excluded either for lack of nationwide statistics or historical data. These include women's and misses' dresses, drug manufacturing, nonelectrical machinery, semiconductors, electrical transmission and distribution equipment, millwork, upholstered furniture, and shipbuilding and repairing. Because of the limited number of industries studied, no generalizations are drawn about methods of wage payment for all manufacturing.

[2] This analysis is limited to production and related workers in manufacturing. Thus, commission plans for sales workers and various piece-rate arrangements in transportation are outside the scope of this article.

[3] Pinhas Shwinger, *Wage Incentive Systems* (New York, John Wiley & Sons, Inc., 1975).

[4] Under measured daywork, employees receive time wages, yet management establishes, and in varying degrees discloses and enforces, production standards. Measured daywork can be used for mechanized operations where employees are required to work at the pace of the conveyor line or within the cycle of automatic machinery.

[5] Joseph M. Sherman, "Incentive pay in American industry 1945–46," *Monthly Labor Review*, November 1947, pp. 535–38. The 56 industries included in the study covered about 5 million workers, or about 40 percent of all production and related workers in manufacturing.

[6] L. Earl Lewis, "Extent of incentive pay in manufacturing," *Monthly Labor Review*, May 1960, pp. 460–63. The estimate of incentive pay coverage was based on a survey in May 1958 of 73 industries employing approximately 9 million production and related workers, or about 80 percent of all manufacturing workers.

[7] John Howell Cox, "Wage payment plans in metropolitan areas," *Monthly Labor Review*, July 1964, pp. 794–96, and "Time and incentive pay practices in urban areas," *Monthly Labor Review*, December 1971, pp. 53–56.

[8] Richard R. Nelson, "Research on Productivity Growth and Productivity Differences: Dead Ends and New Departures," *Journal of Economic Literature*, September 1981, pp. 1029–64, reviews attempts to specify determinants of productivity at the level of the firm.

[9] Vincent G. Reuter, "Wage Incentives: a Valuable Productivity Tool," *Journal of Systems Management*, October 1980, pp. 27–33, points out how work study programs and wage incentives can increase productivity and reduce costs. Also see *Forms of Wage and Salary Payment for High Productivity*, the final reports of an International Management Seminar sponsored by the Organization for Economic Cooperation and Development in 1967. The report, published in 1970, explores the advantages and disadvantages of wage incentives.

[10] Integral to nearly all incentive wage plans is a rate guarantee if the production standards are not met. For purposes of this article, all production and related workers eligible for incentive earnings have been counted as incentive-paid workers, regardless of whether they received above-guaranteed earnings.

[11] An incentive calculation rate is specified for each of the 34 job classes that compose the common job and pay system. Straight-time pay for incentive workers is computed by applying a percentage, usually based on a group production bonus, to the incentive calculation rate before combining with an hourly additive, which includes cost-of-living adjustments. In each job class, the sum of the incentive calculation rate and hourly additive equals the basic hourly wage rate. For greater details, see Joseph C. Bush, "Incentive pay patterns in the steel industry," *Monthly Labor Review*, August 1974, pp. 75–77.

[12] Information on the gross value of fixed assets and the number of production workers was obtained from the 1977 Census of Manufactures. Thirty-five, instead of 37, industries are included because the industry definitions for motor vehicle parts and gray iron pipe foundries used by the Bureau of Labor Statistics industry wage surveys differed from those used by the Bureau of the Census.

[13] The treatment of managerial and union preferences drew upon discussions in George L. Stelluto, "Report on incentive pay in manufacturing industries," *Monthly Labor Review*, July 1969, pp. 49–53;

Robert B. McKersie, Carroll F. Miller, Jr., and William E. Quarterman, "Some indicators of incentive plan prevalence," *Monthly Labor Review*, March 1964, pp. 271–76; and Garth L. Mangum, "A Summary of Wage Incentive Practices in American Industry (Nonrailroad)" in *Studies Relating to Collective Bargaining Agreements and Practices Outside the Railroad Industry*, Appendix Vol. IV to the Report of the Presidential Railroad Commission, February 1962, pp. 229–61.

[14] The administration of incentive plans is discussed in H. K. von Kaas and A. J. Lindemann, *Making Wage Incentives Work* (New York, American Management Association, Inc., 1971).

[15] For a discussion of demoralized incentive plans, see Sumner H. Slichter, James J. Healy, and E. Robert Livernash, *The Impact of Collective Bargaining on Management* (Washington, D.C., Brookings Institution, 1960), pp. 497–503.

[16] See footnote 13.

[17] Frederick Herzberg, "Human roots of productivity," *Industry Week*, Part 1, September 15, 1980, pp. 55–58; Part 2, September 29, 1980, pp. 69–72; Part 3, October 13, 1980, pp. 61–64; Sara Fritz, "New Breed of Workers," *U.S. News & World Report*, September 3, 1979, pp. 35–38; and Harvey Leibenstein, *Beyond Economic Man: A New Foundation for Microeconomics* (Cambridge, Harvard University Press, 1976).

[18] John F. Tomer, "Worker Motivation: A Neglected Element in Micro-Micro Theory," *Journal of Economic Issues*, June 1981, pp. 351–62; Christopher Argyris, *Interpersonal Competence and Organizational Effectiveness* (Homewood, Dorsey Press, 1962); and George Homans, *The Human Group* (New York, Harcourt and Brace, 1950).

[19] For a recent survey of quality-of-worklife developments, see Phyllis A. Wallace and James W. Driscoll, "Social Issues in Collective Bargaining," in Jack Stieber, Robert B. McKersie, and D. Quinn Mills, *U.S. Industrial Relations 1950–1980: A Critical Assessment* (Madison, Wisc., Industrial Relations Research Association, 1981), pp. 238–54.

[20] J. Kenneth White, "The Scanlon Plan: Causes and Correlates of Success," *Academy of Management Journal*, June 1979, pp. 292–312. Rucker and Improshare plans are in some respects similar to Scanlon plans. For brief descriptions, see *Productivity Sharing Programs: Can They Contribute to Productivity Improvement?* Report AFMD–81–22 (Gaithersburg, Md., U.S. General Accounting Office, 1981), pp. 7–12.

[21] Gordon F. Bloom and Herbert R. Northrup, *Economics of Labor Relations*, 9th ed. (Homewood, Ill., Richard D. Irwin, Inc., 1981), pp. 191–92.

[22] G. Christian Hill, "Employee Stock Plans: An Economic Cure-All Or a Dubious Benefit?," *The Wall Street Journal*, Dec. 8, 1980, pp. 1, 25.

[23] See, for example, Richard D. Rosenberg and Eliezer Rosenstein, "Participation and Productivity: An Empirical Study," *Industrial and Labor Relations Review*, April 1980, pp. 355–67; John L. Niles, "Diagnosing and Treating the Symptoms of Low Productivity," *Supervisory Management*, August 1979, pp. 29–34; and E. M. Dar-El and L. F. Young, "Systems Incentives: Three Ways to Better Productivity," *Industrial Engineering*, April 1977, pp. 24–29. A systems incentive plan differs from wage incentives in that it does not emphasize monetary rewards but places equal value on training, development, and participation in productivity programs.

[24] H.M. Douty, "Labor-Management Productivity Committees in American Industry," May 1975, prepared for the National Commission on Productivity and Work Quality, Washington, D.C. See also *The Directory of Labor-Management Committees*, National Center for Productivity and Quality of Working Life (Washington, D.C., Government Printing Office, October 1976), which lists labor-management committees by union, geographical area, and company.

[25] For more details, see Stephen B. Fuller, "How quality-of-worklife projects work for General Motors" and Irving Bluestone, "How quality-of-worklife projects work for the United Auto Workers" in *Monthly Labor Review*, July 1980, pp. 37–41.

[26] Frank M. Gryna, *Quality Control Circles* (New York, American Management Association, 1981); and Edmund J. Metz, "Caution: Quality Circles Ahead," *Training and Development Journal*, August 1981, pp. 71–76.

White-collar pay levels linked to corporate work force size

Larger-size firms generally pay high salaries for white-collar workers, although the pay advantage varies by occupation and skill level

MARTIN E. PERSONICK AND CARL B. BARSKY

"It may seem paradoxical that buyers of labor with the most monopoly power generally pay the highest rates of wage and benefit compensation." With this provocative thought, Professor Richard Lester in his comprehensive 1967 study invited the next generation of researchers to explore size-of-establishment differences in employee compensation.[1] In response, researchers during the past 15 years have "rediscovered" this once-neglected field as fertile ground for debate. While most have argued that big employers pay employees more, others contend that size, *per se*, is not a determinant of wage levels but rather reflects marked differences in the quality of workers employed by large and small firms. Responding to his own paradox, Lester suggested several reasons a large employer might pay higher wages than other firms, including: public opinion, ability to pay, and as compensating differentials for the "impersonal and confining aspects of large establishments."

This article examines the relationship between work force size and pay levels of white-collar employees, using data from the Bureau of Labor Statistics national survey of professional, administrative, technical, and clerical pay (PATC). By using the narrowly defined occupational work levels of the PATC survey, this analysis limits the distorting effects of variations in worker quality on pay levels. The principal findings of the analysis are: pay levels tend to increase with employer work force size but above-average levels are associated only with large firms; and wage premiums attributable to a firm's size are larger for entry level than for experienced professional workers—an indication of competition among small and large employers to attract and retain skilled personnel.

Past studies of the links between work force size and pay levels have reviewed several other possible explanatory variables relating to establishment or worker characteristics, or both. The variables included here were chosen on the basis of significance in previous analyses and availability in the data source selected—the 1980 national PATC survey. The variables are: two measures of work force size (number of employees in the establishment and world-wide corporate employment of the establishment's parent company); industry division (for example, manufacturing, trade, or services); and geographic location (four Census regions). Data on union status, missing from the PATC survey, were developed from the BLS area wage survey program; but these industry averages of unionization proved to be highly correlated with the industry variable and thus were excluded from the final regression analysis. Their omission probably had only minimal impact on this analysis, based on a recent study that showed relatively small union wage differentials for white-collar employees, and no discernible effect on the work force size variables when the union variable was excluded.[2]

Controlling for variations in worker quality continues to be an obstacle to accurate measurements of wage premiums attributable to work force size. For example, a

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BLS researcher found that half of the apparent size premium disappeared when traditional proxies for worker quality—education and work experience—were included in an analysis of data from households sampled in the Current Population Survey.[3] Other researchers have also pointed to unmeasured individual worker characteristics such as dependability, tenure, and "firm-specific" training in espousing reasons for finding a positive relationship between work force size and pay levels.[4]

This study limits the direct influence of education and work experience on salary levels by grouping workers into occupational classifications that are each narrowly defined to represent comparable job content among establishments.[5] This approach departs from previous studies where educational background and overall work experience are important determinants of the distribution of workers among occupations, and thereby influence earnings. However, education and experience are relatively uniform for workers within a specific PATC-defined occupation and, as a rule, are less influential in explaining pay variations among individuals performing the same or similar tasks.

Analytical techniques and data

Two basic approaches are followed in this analysis: (1) cross-tabulation of pay levels by corporate employment size group and (2) multiple regression techniques. The first approach measures gross pay differentials because it does not control for interplay among the various possible influences on pay levels. On the other hand, multiple regression measures the net effect of each explanatory variable, such as work force size, after allowing for the influence of other variables in the equation.

As previously mentioned, the 1980 PATC survey of about 3,500 private sector establishments is the data source for this analysis. Conducted annually by the Bureau of Labor Statistics, the survey results provide the basis for recommendations on annual pay changes for Federal white-collar employees. Selection of PATC survey occupations and other specifications as to the coverage of the study, such as minimum employment size of the establishments, industrial coverage, and geographic scope, are the responsibility of the President's Agent (Secretary of Labor and heads of the Office of Management and Budget and the Office of Personnel Management), under the Federal Pay Comparability Act of 1970.[6] The narrowly defined occupational classifications of the survey provide the link between private and Federal Government sectors thereby permitting carrying out of the congressional directive that "Federal pay rates be comparable with private enterprise pay rates for the same levels of work."[7]

The March 1980 PATC survey included 21 occupations, and all but one were divided into two work levels or more. Each level describes duties and responsibilities in private industry that are comparable with those of specific Federal white-collar employees. Of the 91 occupational work level (job) categories in the survey, 25 contain enough workers for this analysis. They are distributed over 12 of the 21 surveyed occupations, and include professional/administrative, technical support, and clerical workers.[8] Straight-time earnings of full-time workers, the measure reported in the PATC survey, forms the basis for this analysis of pay levels.

Cross-tabular results

Cross-tabulations revealed a strong tendency for pay levels to rise, as corporate employment grew. (See table 1.) Depending on the job category, pay ranged from 1 to 16 percent below the PATC survey averages in firms with fewer than 1,000 workers to 4 to 24 percent above in firms with 250,000 workers or more. Table 1 also presents clerical and technical workers in the largest corporate categories as enjoying a somewhat greater pay advantage than their professional colleagues.

For professionals, the pay advantage for working in large corporations was less at journeyman level than at entry level, indicative of competition among small and large firms alike for experienced workers.[9] The higher

Table 1. Relative pay levels by corporate employment-size group, selected white-collar occupations in private establishments, March 1980

Occupational level and Federal equivalent	Mean salary for size groups as a percent of surveywide average[1]					
	Fewer than 1,000 employees	1,000 to 2,500	2,500 to 10,000	10,000 to 50,000	50,000 to 250,000	250,000 or more
Professional and administrative:						
Accountants I (GS-5)	88	93	98	100	102	122
Accountants III (GS-9)	94	94	96	100	102	114
Accountants IV (GS-11)	97	96	97	100	99	109
Auditors III (GS-9)	92	92	97	101	104	121
Buyers III (GS-9)	99	94	96	98	101	113
Buyers IV (GS-11)	90	89	96	98	100	109
Chemists II (GS-7)	89	83	97	103	105	111
Chemists IV (GS-11)	93	91	94	99	104	108
Engineers I (GS-5)	88	93	99	100	102	106
Engineers III (GS-9)	95	95	97	101	99	107
Engineers VI (GS-13)	99	99	98	98	89	105
Engineers VII (GS-14)	95	98	102	97	99	104
Technical support:						
Computer operators III (GS-6)	94	97	96	100	104	117
Computer operators IV (GS-7)	88	92	95	99	104	116
Drafters II (GS-3)	93	97	97	100	107	124
Drafters IV (GS-5)	97	94	93	99	103	113
Engineering technicians III (GS-5)	93	97	93	101	100	107
Engineering technicians V (GS-9)	92	93	96	98	98	105
Clerical:						
Accounting clerks II (GS-3)	95	93	97	101	104	116
Accounting clerks III (GS-4)	91	93	95	103	106	115
Key entry operators I (GS-2)	91	98	94	102	111	124
Key entry operators II (GS-3)	90	95	94	103	104	124
Secretaries II (GS-5)	88	91	94	100	103	118
Secretaries IV (GS-7)	84	93	94	100	104	123
Typists I (GS-2)	85	91	96	100	108	116

[1] Published averages, the base for these pay relatives, have been adjusted to exclude observations in establishments not reporting corporate employment.

Table 2. Relative pay levels by industry division, selected white-collar occupations, March 1980

[Average salary for each occupation in all industries = 100]

Occupation	Industry division					
	Manufacturing	Public utilities[1]	Wholesale trade	Retail trade	Finance, insurance, and real estate	Selected services[2]
Accountants	100	104	96	95	94	96
Engineers	100	102	96	([3])	([3])	98
Computer operators	105	114	101	([3])	91	90
Accounting clerks	101	118	99	93	88	96
Typists	105	120	107	100	87	101

[1] Transportation (except U.S. Postal Service), communications, electric, gas, and sanitary services.

[2] Limited to engineering, architectural, and surveying services; commercially operated research, development, and testing laboratories; advertising; credit reporting and collection agencies; computer and data processing services; management, consulting, and public relations services; noncommercial educational, scientific, and research organizations; and accounting, auditing, and bookkeeping services.

[3] Insufficient employment in one work level or more to warrant separate presentation of data.

average pay for entry-level professionals in large firms may partly reflect payment for a "higher quality" of worker, that is, the academic reputation of the college from which he or she graduated or higher standing within the graduating class. In contrast, past work experience and job performance are less important in setting salaries for beginning professionals whose job tenure is brief.

These overall comparisons mask the degree to which pay in individual firms deviated from group averages. As a rule, less than half of the firms with 50,000 workers or more paid their nonclerical employees at least 5 percent above PATC survey averages; by individual job category, the proportion of employers ranged from 25 to 58 percent. For clerical jobs, the proportions ranged from 54 to 63 percent. Similarly, not all firms in smaller-size groups paid less than the average. For each job, at least 7 percent of the employers with fewer than 1,000 workers paid 5 percent or more above the survey average.

Variations in industry pay levels (table 2) and employment distributions (table 3) appear to account for part of the differences in pay levels between large and small firms. To illustrate, the five occupational work levels shown in table 3 have a disproportionately high number of manufacturing industry workers in large firms. Conversely, finance, insurance, and real estate workers in these job categories (service industry for engineers) tend to concentrate in small firms. As in the blue-collar sector, white-collar pay levels are higher in manufacturing[10] than in either finance, insurance, and real estate or service industries. Pay levels of medium-size firms (2,500 to 10,000 workers) are bolstered by the presence of public utilities—traditionally one of the highest-paying industry sectors.

Unlike the aforementioned association between size of firm and industry, corporate size appears to be largely independent of regional location. Accordingly, regional pay differences do not seem to account for much of the wage premium associated with work force size. Moreover, pay differences between the highest- and lowest-paying regions were relatively small—typically less than 10 percent. As noted in a previous BLS study,[11] a regional pay advantage may reflect more the industry orientation of a particular job, such as the Southern pay premium traditionally reported for chemists who are extensively employed by high-paying petrochemical firms in that region.

Regression results

Multiple regression analysis disclosed a statistically significant relationship between large corporate size, *per se*, and higher pay, when other measured characteristics are held constant. This was true for all but one (engineering technician V) of the 25 job levels studied. In some cases, as illustrated in table 4, pay in firms with 250,000 employees or more averaged 9 to 20 percent above firms with fewer than 1,000 employees.[12] A smaller size premium, found less often, was reported for

Table 3. Relative industry employment levels by corporate employment size groups, selected white-collar occupations, March 1980

Occupation and industry division[1]	Percent of workers in:			
	All size groups	50,000 or more[2]	2,500 to 10,000	Fewer than 1,000
Accountants III:				
Manufacturing	65	78	55	41
Public utilities	9	4	21	7
Trade	7	9	6	15
Finance, insurance, and real estate	11	([3])	12	30
Engineers III:				
Manufacturing	77	92	61	53
Public utilities	7	([3])	23	([3])
Services	10	4	14	42
Computer operators III:				
Manufacturing	41	60	34	23
Public utilities	7	10	8	([3])
Trade	14	12	14	19
Finance, insurance, and real estate	23	4	32	41
Services	11	5	11	16
Accounting clerks III:				
Manufacturing	43	50	38	35
Public utilities	18	29	23	4
Trade	14	13	11	18
Finance, insurance, and real estate	18	5	25	36
Typists I:				
Manufacturing	36	45	35	20
Public utilities	7	11	12	([3])
Trade	8	18	5	12
Finance, insurance, and real estate	42	22	40	61
Services	5	4	6	5

[1] See table 2, footnotes 1 and 2 for coverage of nonmanufacturing industry divisions. Industry divisions with less than 5 percent of the workers in an occupational work level are not shown.

[2] The two largest-size groups shown in table 1 were combined to provide sufficient observations for a meaningful profile of industry employment distribution of relatively large corporations. To simplify this analysis, the medium-size firm is represented by the 2,500 to 10,000 employee group, omitting corporations with 1,000 to 2,500 and 10,000 to 50,000 employees.

[3] Less than 4 percent.

the second and third largest corporate-size groups. Below the 10,000 worker cutoff, significant size premiums were usually absent—not surprising given the relatively small differences in actual pay levels among the three smallest size groups. (See table 1.)

Substituting establishment size for corporate size in the regressions did not alter the basic findings that large employers provide higher pay levels for white-collar workers. For a large majority of the 25 job levels, significant pay premiums attributable to establishment size began with the 1,000 to 2,499 employees group; for the largest establishments (10,000 employees or more), the size premium over the smallest group (fewer than 500 employees) was typically 10 to 15 percent for professional/administrative categories and 20 percent or more for the clerical/technical job levels.

The simultaneous effect of establishment and corporate size on pay levels also was tested in separate sets of regressions. The work force variable was defined as four combinations: (1) small establishment (fewer than 2,500 employees)/small corporation (fewer than 50,000 employees); (2) small establishment/large corporation; (3) large establishment/small corporation; and (4) large establishment/large corporation. Compared with the small establishment, small corporate-size category, the other three groups had statistically significant salary differentials for a large majority of the 25 job categories studied. However, of the three, only the large establishment/large corporation group stood out with significant salary premiums for all jobs.

Of the two work force size measures used, corporate size generally provided a better explanation of the salary variation for professional job categories, that is, higher adjusted coefficients of multiple determination ($\hat{R}^2$), while establishment size produced somewhat better regression results for clerical positions. This is consistent with and may partly reflect the differing pay-setting practices of the two occupational groups: a national or regional market for professionals and a local wage area for clerical workers. Regardless of the work force size measure used—corporate or establishment—regression results explained more of the salary variation for entry-level than for higher-level professional job categories. This is in line with the more uniform work experience and job tenure noted for entry-level professionals than for journeymen.

Salary differences found by simple cross-tabulation (table 1) can be labeled *gross* differentials, and those isolated by multiple regression techniques, *net* differentials. Table 5 compares gross and net percentage pay differentials associated with corporate work force size. The table shows that gross differentials are generally larger than net differentials. This expected pattern reflects the tendency for characteristics associated with higher pay

Table 4. Regression analysis of average monthly salaries for selected white-collar occupations, March 1980

Variable	Percent of 25 occupations studied with significant coefficients [1]	Accountants III	Engineers III	Computer operators III	Accounting clerks III	Typists I
		(Coefficients shown in percent)				
Constant	N.A.	$1,725	$1,913	$1,080	$919	$772
Corporate size (number of employees):						
1,000 to 2,499	20	. . .	. . .	. . .	. . .	. . .
2,500 to 9,999	20	. . .	. . .	. . .	. . .	. . .
10,000 to 49,999	60	4.7	5.4	4.8	10.3	. . .
50,000 to 249,999	76	7.2	4.7	8.6	14.9	9.6
250,000 or more	96	19.6	12.5	17.5	17.7	9.0
Industry division:						
Mining/construction	64	8.3	3.3	−18.3	10.4	. . .
Public utilities [2]	80	8.1	5.3	7.9	13.5	13.4
Finance, insurance, and real estate	71	. . .	. . .	−8.7	−7.2	−13.9
Wholesale trade	26	. . .	. . .	. . .	. . .	−14.5
Retail trade	68	4.3	. . .	6.2	−7.3	−15.4
Selected services [2]	24	. . .	. . .	−12.7	. . .	. . .
Region:						
Northeast	60	−7.7	−3.7	−4.1	3.8	. . .
North Central	36	−3.0	. . .	. . .	5.4	5.4
West	52	−2.5	. . .	6.4	4.2	6.2
Statistical information:						
Adjusted coefficient of determination ($\hat{R}^2$)	N.A.	.23	.12	.21	.20	.21
Mean (Y)	N.A.	$1,776	$2,013	$1,079	$1,028	$759
Number of observations (S)	N.A.	1,476	1,154	1,174	1,534	854

[1] Because the regression coefficients are based on a sample, they may differ from the figures that would have been obtained from a complete census. Chances are about 2 in 3 that an estimate from the sample would differ from those in a total census-derived value by less than the standard error, and about 19 in 20 that the difference would be less than twice the standard error. It is the latter 5 percent significance level that is used here; the percent of the 25 occupations studied that had a significant coefficient is shown for each variable, for example, only 20 percent for the 2,500 to 9,999 corporate size-group.

[2] See table 2, footnotes 1 and 2 for coverage of nonmanufacturing industry divisions.

NOTE: Y is the mean of the earnings (dependent) variable weighted by occupational employment. S is the number of establishments in the sample with employees in the occupations studied. Dashes indicate that the coefficient was not significant at a 5 percent level. N.A. = Not applicable.

Table 5. Percentage earnings differences between large and small firms, selected white-collar occupations, March 1980

Occupational work level	Percent difference	
	Gross	Net
Accountants I	38.6	33.9
Accountants III	21.3	19.6
Accountants IV	12.4	13.3
Auditors III	31.5	20.0
Buyers III	14.1	15.6
Buyers IV	21.1	20.8
Chemists II	24.7	19.7
Chemists IV	16.1	13.1
Engineers I	20.5	19.0
Engineers III	12.6	12.5
Engineers VI	6.1	9.0
Engineers VII	9.5	11.3
Computer operators III	24.5	17.5
Computer operators IV	31.8	21.5
Drafters II	33.3	37.4
Drafters IV	16.5	19.1
Engineering technicians III	15.1	13.8
Engineering technicians V	14.1	[1] 12.4
Accounting clerks II	22.1	17.3
Accounting clerks III	26.4	17.7
Key entry operators I	36.3	27.4
Key entry operators II	37.8	31.4
Secretaries II	34.1	29.2
Secretaries IV	46.4	41.3
Typists I	22.1	9.0

[1] The net difference for engineering technicians V is statistically significant at a 10-percent level; all other work levels shown are significant at 5 percent.

NOTE: Large size equals 250,000 employees or more; small size, fewer than 1,000 employees. "Gross" and "net" differentials are defined in the text.

levels, such as high-paying manufacturing and large corporate size, to be found together. This compounds the impact attributable to any single characteristic by simple cross-tabulation. Regression techniques separate such combinations and measure the impact of individual components.

Implications for future research

This study illustrates the usefulness of surveys that provide detailed information on narrowly defined occupations, which control for differences in worker quality. It makes clear that questions relating to work force size and occupational pay seem more appropriate for an establishment survey than a household one. Yet, as noted earlier, the inclusion of information on the educational background and work experience of employees (easier to get in household interviews) enhances the usefulness of most size/pay estimates. Two BLS studies have utilized the best features of both approaches: in 1972 a study of the clothing industry obtained for the first time demographic characteristics from employee interviews and occupational wages from their employers[13] and a subsequent study matched observations on individuals and their employers from two establishment surveys—Employer Expenditures for Employee Compensation and Area Wage Surveys—and the Current Population Survey of households.[14] Either approach, although expensive and time consuming, is necessary to adequately control for productivity differences among workers.

The corporate work force variable could be redefined in future surveys to report the work force size for a parent company only if it has a direct input to the wage and salary administration of its affiliated establishments. This study included corporate work force obtained for both *divisions* of companies whose pay decisions are usually reviewed by the parent firm and for *wholly-owned subsidiaries* that operate independently of that type of review. This proposal would reduce the number of affiliates reported in the largest corporate-size classes and probably would tend to increase the pay differential between large and small employers.

Finally, if resources were made available, two other establishment characteristics could be added to the PATC survey to help improve explanations of white-collar pay levels—union status of white-collar and of blue-collar workers and location by area population size. The latter may be especially important for clerical and technical job categories. A metropolitan/nonmetropolitan area variable was not included in this analysis because more than 90 percent of white-collar workers covered by the PATC survey were employed in metropolitan areas.

IN SUMMARY, this analysis found white-collar pay levels generally increasing with employer size. This was observed both before and after allowing for the impact of other measured variables, such as industry and region. However, the amount of the salary premium attributable to work force size varied by occupation and skill level—similar to the way education and other worker quality traits have affected results in previous studies. Narrowly defined occupational classifications broaden opportunities for BLS establishment surveys to be used in research usually reserved for household-type surveys. Further improvements in both kinds of surveys, and combining their best features, are needed to better measure and control for differences in productivity-related characteristics among workers. □

—— FOOTNOTES ——

[1] Richard Lester, "Pay Differentials by Size of Establishment," *Industrial Relations*, October 1967, pp. 57–67.

[2] Joseph R. Antos, "Union Impacts on White Collar Compensation," *Industrial and Labor Relations Review*, forthcoming.

[3] Wesley Mellow, "Employer size, unionism, and wages," paper presented at Conference on New Approaches to Labor Unions, October 1981, at Virginia Polytechnic Institute and State University.

[4] See, for example, Stanley H. Masters, "Wages and Plant Size: An Inter-industry Analysis," *Review of Economics and Statistics*, August 1969, pp. 341–45 and Walter Y. Oi, "The Fixed Employment Costs of Specialized Labor," paper presented at Conference on The Measurement of Labor Cost, December 1981, at Williamsburg, Virginia.

In Vladimir Stoikov, "Size of Firm, Worker Earnings, and Human Capital: The Case of Japan," *Industrial and Labor Relations Review*, July 1973, the author argues that size of enterprise is of minor importance and that interfirm wage differentials are explained almost exclusively by differences in worker skills and knowledge.

[5] Occupational definitions are presented in *National Survey of Professional, Administrative, Technical, and Clerical Pay, March 1980*, Bulletin 2081 (Bureau of Labor Statistics, 1980), pp. 38–68. Several occupations used in this analysis have exclusions that help to narrow their definition. For example, the accountant definition does not cover workers whose principal or sole duties consist of designing or improving accounting systems or other nonoperating staff work, such as budget or financial analysis; the computer operator definition includes workers operating the control console of a digital computer and not those operating computer terminals; and the typist definition does not include word processors and publication typists. In addition, workers without college degrees are almost always excluded from the professional jobs studied.

[6] The industrial coverage and minimum-size establishment is as follows: manufacturing (100 or 250 employees); transportation, communication, electric, gas, and sanitary services (100 or 250 employees); mining and construction (250 employees); wholesale trade (100 employees); retail trade (250 employees); finance, insurance, and real estate (100 employees); and selected services (50 or 100 employees).

[7] 5 U.S.C. Sec. 5301 (a) (3) (1970). The pay-setting role of the PATC survey is described in George L. Stelluto, "Federal pay comparability: facts to temper the debate," *Monthly Labor Review*, June 1979, pp. 18–28.

[8] Table 1 lists the 25 job categories. Work levels are identified by Roman numerals, the higher the numeral the greater the duties and responsibilities. Numbers of work levels in the PATC survey vary by occupation, ranging from one for messengers to eight for chemists and engineers. For professional occupations, the first two levels are considered entry and developmental; the next two levels, journeymen; and higher levels, generally supervisory or managerial in nature.

[9] Microdata from the PATC survey have shown over the years that pay levels within an establishment are typically higher relative to the survey-wide averages for experienced levels of professional positions than for entry levels. This is especially true for small, relatively low-paying establishments.

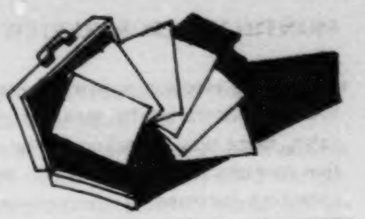
[10] Previous BLS research on area pay differences found that wage variation reflects not only the relative presence or absence of manufacturing activity but also the kind of manufacturing industries. We found that this also applies to occupational pay differences by size of firm. That is, high-paying manufacturing industries were relatively more important employers in the largest firm-size groups. For example, in the large-size groups (50,000 employees or more), two-thirds of the accountants III employed by manufacturing firms were in high-paying industries; in the small-size group, the corresponding proportion was two-fifths. An industrial profile of large, low-paying firms, that is, with pay levels 5 percent or more below the PATC survey averages, showed that their mix of manufacturing industries, like that of small firms, was less favorable than for the large firm-size groups as a whole. The data to support these findings for other jobs studied are available upon request.

[11] Harry F. Zeman, "Regional pay differentials in white-collar occupations," *Monthly Labor Review*, January 1971, pp. 53–56. Because the PATC survey was designed to yield nationwide data, regional estimates are not regularly published; small differences in these estimates should be cautiously interpreted.

[12] Several categories were defined for each characteristic studied, for example, six corporate employment-size groups or four geographic regions. (Actual employment rather than employment groups was not available.) The coefficients presented in table 4 are the percent differences between the category of each characteristic that is shown and the one that is not shown, but is embodied in the "constant" term: that is fewer than 1,000 workers, manufacturing, and the South.

[13] See *Wages and Demographic Characteristics in the Work Clothing Industry*, March 1972, Bulletin 1858 (Bureau of Labor Statistics, 1975).

[14] Antos, "Union Impacts."



Conference Papers

The following excerpts are adapted from papers presented at the Thirty-Fourth Annual Meeting of the Industrial Relations Research Association, December 1981, in Washington, D.C.

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Can the NLRB caseload detect changes in labor relations climate?

MARK D. KARPER

The past 30 years have been marked by a steady increase in the number of unfair labor practices cases processed by the National Labor Relations Board (NLRB). This raises questions concerning possible changes in the distribution of this increase over the 1950–78 period. An assessment of what, if any, changes have occurred can provide indicators of changes in the labor relations climate over time. The assessment of changes in the distribution of cases can be broken down into five specific categories (a) changes in regional distribution, (b) changes in the type of employer, (c) changes in the size of an employer, (d) changes in the type of cases, and (e) changes in election behavior relative to cases.

The NLRB provides information on the total number of unfair labor practices cases for the 10 census regions of the United States.[1] It categorizes changes in managerial violations for each region. The results for such violations show four regions declined since 1950: the Middle Atlantic, Outlying areas (Virgin Islands and Puerto Rico), New England, and West South Central; and six regions increased their share: East North Central, Pacific, South Atlantic, Mountain, West North Central, and East South Central. The most dramatic changes occurred in Ohio, Indiana, Illinois, Michigan and Wisconsin, where the share increased by 4 percent and in New York, New Jersey and Pennsylvania, where it declined by 6 percent. All the changes for the other regions were less than 2 percent, making it impossible to assess whether any consistent trends have developed.

An examination of violations by management according to the type of employer reflects the demographic shift of employment from the manufacturing to the services sector. In addition, it reflects increased NLRB jurisdiction in the services sector with the addition of health care institutions, private, higher education institutions, and the U.S. Postal Service. The services sector's share of unfair labor practices cases by management increased from 4.1 percent in 1950 to 17.7 percent (includes Postal Service) in 1978, while the manufacturing sector declined from 61.7 percent to 45.8 percent. Transportation, finance, retail trade, construction, and mining increased slightly (less than 2 percent), while wholesale trade declined 1.4 percent.[2]

Data on unfair labor practices cases by the size of the employer are available going back to 1966. The data show little variation over the entire time period with an average of 65 percent of all cases being filed against employers with less than 100 employees, 12 percent in the range of 100–499, 5 percent in the range of 500–999, and 9 percent with employees of 1,000 or more. The data vary by less than 2 percent over the entire time period in any one category. These results reveal that over the recent time period for which the data are available, the size of the employer is not an important factor in the change in the distribution of cases.

One measure of the mix of unfair labor practices cases is the ratio of union to management violations. This mix has changed over time with unions' violations rising faster than managements', with the ratio becoming stable from 1966–78. The relative stability of the union and management mix in recent years means that they have shared equally in the growth of cases indicating the increased use of litigation by both sides.

Election petitions by unions could be related to the incidence of unfair labor practices cases if violations arise in substantial numbers from elections. During 1964–78, the number of these elections remained almost constant while cases almost tripled. This fact negates any simplistic relationship between the two. The data

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concerning election activity by type of industry do follow the pattern set by managements' violations. Specifically, there was a decline in the number of elections in the manufacturing sector (22 percent), with a corresponding increase in the services sector (20 percent). The other sectors remained almost constant. The most startling statistic is that election patterns by region remained stable for the entire 1950–78 period, with only one category, the Southern Atlantic Region, (2.9 percent) showing any variation over 2 percent. This pattern runs contrary to demographic shifts in both population and employment.

In summary, increased incidence of unfair labor practices cases is not due to the movement of employment to the South and West, for example. Second, the increase in cases is not due to increased lawlessness on the part of employers or unions, since the mix of union and management violations has remained constant in recent years. Third, there is evidence to indicate that the increase in cases may be related in part to the increased jurisdiction by the NLRB in the services sector. And, finally, it is not possible to determine whether this increase reflects a trend towards lawlessness without adequate measures of the number of employees and the scope of bargaining units under NLRB coverage. ☐

——*FOOTNOTES*——

[1] The definitions of each region are: New England—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut; Middle Atlantic—New York, New Jersey, Pennsylvania; East North Central—Ohio, Indiana, Illinois, Michigan, Wisconsin; West North Central—Iowa, Minnesota, Missouri, North Dakota, South Dakota, Nebraska, Kansas; South Atlantic—Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida; East South Central—Kentucky, Tennessee, Alabama, Mississippi; West North Central—Arkansas, Louisiana, Oklahoma, Texas; Mountain—Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada; Pacific—Washington, Oregon, California, Alaska, Hawaii, Guam; Outlying—Puerto Rico, Virgin Islands.

[2] The definitions of labor sectors correspond to Standard Industrial Classifications.

Determinants of health insurance and pension coverage

WESLEY S. MELLOW

Fringe benefits have increased markedly in recent years and now account for roughly one-third of total compensation.[1] Despite this magnitude, relatively little is known about the distributional pattern of fringes across workers; most studies of the determinants of fringe benefits use establishment or industry data.[2] While these studies provide much interesting and useful information, they have the same inherent limitation as those which use establishment or industry data to study wages. That is, only very limited controls for labor quality and other interworker differences are available. Consequently, to the extent that observed determinants of fringes (unions, employer size, and so forth) are correlated with worker characteristics influencing total compensation, the estimated effects of these factors will be biased.

The following discussion describes a very rough attempt to address this limitation using new data on individual workers from the Current Population Survey. Specific attention is given to the impact of personal characteristics, union membership, and employer size on health and pension coverage.

The data base

The Current Population Survey is the monthly survey of 56,000 households used by the Bureau of Labor Statistics to estimate the official unemployment rate. In addition to data on labor force status and personal characteristics, information is obtained each month on hourly earnings (for workers paid by the hour), usual weekly earnings, and usual hours worked at the primary job from approximately one-fourth of employed survey participants. A special supplement to the May 1979 survey requested information on a wide range of additional worker and job characteristics, including current job tenure, union membership status, employer size, and participation in health and pension plans. For this analysis, the sample is limited to the 18,551 wage-and-salary workers providing responses to the supplemental questions in the May survey and the earnings questions in either the May or June surveys.[3]

Health insurance coverage is determined by response to the question: "Are you included in a group health insurance plan on your present job? Do not report insurance that pays only for accident or disability." Pension plan coverage is determined by the question: "Does your employer or union have a pension or other type of retirement plan for any of its employees?" If the answer is yes, respondents are then asked: "Are you included in such a plan?" (Respondents are told not to include social security, railroad retirement, or veterans' pensions in determining their answers to the pension questions.) Under these definitions, 66 percent of the workers in our sample received health insurance as part of their compensation package and 50 percent received pension coverage.

These percentages are much lower than those typically found in studies based on firm or establishment data.

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For instance, a 1977 Chamber of Commerce study found that only 9 percent of the firms it surveyed reported no pension payments, and fewer than 1 percent reported no health insurance payments.[4] Similarly, a recent Bureau of Labor Statistics study found that in 1979 only 13 percent of workers in the establishments surveyed received no pension coverage and only 3 percent received no health insurance.[5] The discrepancy is probably attributable to some combination of the following factors. Not all workers in a firm receive health and pension benefits, relatively new and part-time employees being particularly excluded. In addition, surveys of firms typically exclude "small" employers (in most cases, those with fewer than 100 employees). These small employers have much lower levels of benefit provision. Finally, employer surveys frequently exclude specific occupations or industries which may have low fringes.

It should be noted that a number of sharp differences in the means of the incidence of benefit receipt are readily apparent among the subgroups of the CPS sample. Women, low tenured, and part-time workers have much lower receipt levels, while the converse is true of union workers and those working for large employers. High wages are associated with higher benefit coverage, and wide variations are observed among industries.

Probabilities of coverage

Logit analysis was used to estimate the impact of worker and employer characteristics on the likelihood of health or pension coverage.[6] The coefficients estimated using this procedure indicate the percentage change in the odds of receiving the specified benefit for a unit change in an explanatory variable. Also calculated are the derivatives, which reveal the marginal effect of change in an independent variable on the absolute probability of receiving the benefit, in the vicinity of sample means.

The estimates indicate that several major factors are associated with dramatic shifts in the probability of receiving benefits. Union members and those working in large firms have sharply higher receipt levels. Based on the derivative calculations, the absolute probability of receiving health insurance (pension benefits) is .144 (.321) higher for union members. Regarding employer size, there is an increase of .200 in the absolute probability of health benefits and a .299 rise in the probabilities of pension coverage associated with firms having 25 to 99 workers. Being employed in establishments with 1,000 workers or more increases the absolute probabilities of health and pension coverage by .316 and .557, respectively. Because the mean of the pension variable is smaller than that of the health variable (.50 versus .66), these estimates imply that the relative effects of union membership and firm size are greater on the probability of receiving pension benefits than on the probability of coverage by health insurance plans.

Current job tenure and wage are both associated with an increased likelihood of health and pension coverage. An increase in job tenure from 5 to 15 years, for instance, is associated with an increase of .135 (.297) in the absolute probability of health (pension) benefits. A $5 increase in the hourly wage is associated with an absolute increase of .120 in the probabilities of both health and pension benefits.

Sharp drops in the probability of receiving benefits are encountered by part-time workers. The estimated decline in the absolute likelihood of health (pension) benefits is .311 (.274). Given the large differences noted earlier in the comparisons of means, being female has a surprisingly modest negative impact, -.064 for health insurance and -.069 for pensions. Evidently, controlling for job tenure, part-time status, wage, industry, and occupation accounts for much of the difference between men and women in the probability of receiving benefits.[7]

The absolute change in the likelihood of health and pension coverage is markedly higher in manufacturing (.206 and .259 in durable goods and .144 and .220 in nondurable goods) and transportation and public utilities (.117 and .118). In three industry groups—finance, insurance, and real estate; services (except private household); and public administration—there are modest increases in the probability of health benefits (.088, .031, and .077), but substantial increases in the probability of pension benefits (.172, .219, and .551). (The reference industry is private household workers and agriculture).

The estimated impacts of the occupational status and location variables can be briefly summarized. Occupational status has a much smaller estimated impact than industrial status. The largest change in the absolute probability of benefits is an increase of .123 in health insurance for managers and a .137 increase in pension coverage for clerical workers. (The reference occupation is service workers.) The location variables (regional and Standard Metropolitan Statistical Area dummies) have no systematic influence on the receipt of benefits. ☐

FOOTNOTES

[4] See Chamber of Commerce of the United States, *Employee Benefits, 1977* (Washington, 1978).

[5] See, for instance, Robert G. Rice, "Skill, Earnings and the Growth of Wage Supplements," *American Economic Review*, May 1966, pp. 583–93; and Richard B. Freeman, "The Effect of Unionism on Fringe Benefits," *Industrial and Labor Relations Review*, July 1981, pp. 489–509.

[6] The CPS sample is composed of a rotating group of addresses. A particular address is in the sample 4 consecutive months, out 8, and then in 4 more months. Each month, only those persons in rotation groups four and eight are asked the earnings questions. In the data file used in this analysis, responses to the earnings questions in the June CPS (for those in rotation groups three and seven in May) have

been added to the individual data records. This matching process roughly doubles the number of participants in the May supplement for whom earnings data are available.

[4] Chamber of Commerce of the United States, *Employee Benefits 1977*, p. 16.

[5] *Employee Benefits in Industry: A Pilot Survey*, Report 615 (Bureau of Labor Statistics, 1980).

[6] For a discussion of the logit framework, see Marc Nerlove and S. J. Press, *Univariate and Multivariate Log-Linear Logistic Models*, Report R-1306-EDA/NTH (Santa Monica, Calif., The Rand Corporation, 1973).

[7] If the wage variable is excluded from the set of explanatory variables, the estimated impact of being female on the probability of receiving benefits increases by roughly 50 percent. Changes in the estimated effects of other factors are much more modest; typically the increase (in absolute value terms) is about 10 percent.

Labor market rights of foreign-born workers

DAVID S. NORTH

The 1970 Census counted 9.6 million foreign-born persons in the United States, divided almost equally between naturalized citizens and aliens. That was surely an undercount, as the Census has the same troubles enumerating the foreign-born as it does native-born disadvantaged populations. The total number of foreign-born in the United States in 1980 was in the 16 to 18 million range. In addition to some 4 million or so newly arrived legal immigrants, we have also taken on hundreds of thousands of refugees, and perhaps as many as 4 million illegal immigrants in the last decade. A disproportionately large segment of the illegal immigrants are in the work force (which is not the case with the other foreign-born subpopulations), so the number of foreign-born in the labor market is significant.

For our purposes, we divide the foreign-born into six groups, each of which has its own mix of labor market rights:

Naturalized citizens have all of the labor market rights of citizens, with two statistically minor exceptions: they are barred from the Presidency and the Vice Presidency, and they must serve a waiting period after naturalization prior to election to the Congress.

Permanent resident aliens arrived here legally and may become naturalized citizens after the passage of time.

Class A refugees are those recognized as such by the Refugee Act of 1980, as amended. Most refugees currently in the United States are from Indochina, but there are others from Afghanistan, Ethiopia, Eastern Europe, Cuba, and Haiti.

Class B refugees may look like refugees to an observer, but in the eyes of the Immigration and Naturalization Service, they are here illegally, and are ultimately subject to deportation.

Nonimmigrants are aliens admitted to the United States legally and temporarily to perform a particular function (to be a diplomat, a tourist, or a foreign student).

Illegal immigrants have either arrived surreptitiously or have come into the country bearing legitimate documents which they subsequently abused (either by staying too long, or by working when they were not supposed to do so).

Permanent resident aliens, and Class A and Class B refugees may work anywhere they can find a job. Some classes of nonimmigrants may work only in designated segments of the labor market, but most are not allowed to work at all. Illegal immigrants are not, *per se*, barred from employment, but they are barred from physical presence in the United States. If they are apprehended, they are subject to deportation.

While permanent resident aliens and Class A and Class B refugees are free to seek any job they can find, they are generally not protected from employment discrimination. The Federal Government, all private sector employers, and sometimes State and local governments may legally refuse to hire, for example, an Ethiopian permanent resident alien on the grounds that they will hire no permanent resident aliens—but they would be violating Title VII of the Civil Rights Act of 1964 if the decision was based on nation of origin or skin color. As a matter of fact, it is very difficult for most Federal agencies to employ permanent resident aliens, and virtually impossible for them to hire either class of refugees. Even the refugee-serving units of the government, such as the Office of Refugee Resettlement, may hire refugees only after they have secured permanent resident alien status, and those appointments require special dispensation from Federal personnel authorities.[1] Private sector employers may refuse to hire permanent resident aliens if the action is not designed to hide a bias against would-be employees of a certain nation of origin. State governments are generally not allowed to discriminate against permanent resident aliens, but the State of New York carried a case to the Supreme Court, successfully arguing that only citizens should be members of the State police force.[2]

Nonimmigrants who work legally in the United States may do so only along the lines permitted by the visa they carry. For example, a Jamaican, who secured a visa to cut sugar cane in Florida may not legally

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pump gas in the service station across the street from the cane field and a diplomat who leaves the service of his nation may not stay in the United States and work as a lawyer.[3]

While it is against the law for illegal aliens to work in the United States, their employers are required to provide them with all the protections demanded of other workers. Thus, an employer of illegal immigrants must meet the provisions of the Occupational Safety and Health Act and the Fair Labor Standards Act and, in every State but Vermont, employers are required by State legislation to provide workers' compensation protection (for injured workers). Similarly, an employer must pay social security taxes for all workers, legal or illegal.[4] These provisions tend, in a small way, to reduce the incentive for employers to hire illegal immigrants. □

FOOTNOTES

[1] For more on aliens and equal employment opportunity, see David Carliner, *The Rights of Aliens: The Basic ACLU Guide to an Alien's Rights* (New York, Avon Books, 1977), and David S. North and Allen LeBel, *Manpower and Immigration Policies in the United States*, Special Report No. 20 (Washington, National Commission for Manpower Policy, 1978), pp. 77–83.

[2] *Foley v. Connelie*, 435 U.S. 291 (1978).

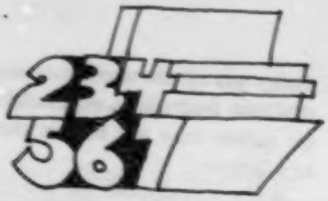
[3] The precise labor market rights of all the classes of nonimmigrants cannot be covered here; for more on this see Sam Bernsen, "Employment Rights of Aliens Under the Immigration Laws," *Interpreter Releases* 56: 240–55 (May 16, 1979); and David S. North, *Nonimmigrant Workers in the U.S.: Current Trends and Future Implications* (Washington, New TransCentury Foundation, 1980).

[4] Some legal, nonimmigrant workers are excluded by law from social security coverage, giving their employers, in a sense, a 6.7-percent discount on their wages. Temporary farm workers, foreign students and exchange visitors fall into this category.

A note on communications

The *Monthly Labor Review* welcomes communications that supplement, challenge, or expand on research published in its pages. To be considered for publication, communications should be factual and analytical, not polemical in tone. Communications should be addressed to the Editor-in-Chief, *Monthly Labor Review*, Bureau of Labor Statistics, U.S. Department of Labor, Washington, D.C. 20212.

The Anatomy of Price Change



Reconciling the CPI and the PCE Deflator: 4th quarter 1981

JULIE A. BUNN AND JACK E. TRIPLETT

The September 1981 issue of the *Monthly Labor Review*[1] presented a reconciliation of the Federal Government's two major inflation measures—the Consumer Price Index (CPI), published by the Bureau of Labor Statistics, and the Implicit Price Deflator for Personal Consumption Expenditures (PCE Deflator), produced by the Bureau of Economic Analysis. By comparing alternative versions of the indexes published by the Bureau of Labor Statistics and the Bureau of Economic Analysis, the difference between the CPI and PCE measures can be decomposed into three factors: owner-occupied housing, different index weights, and "all other" factors. The technical basis for the analysis is contained in the September 1981 article.[2]

This second quarterly update of the reconciliation, which extends the data through the end of calendar year 1981, shows a general narrowing of the difference between the two measures.

Reconciling period-to-period changes

Table 1 shows the reconciliation of percent changes in the Consumer Price Index for All Urban Consumers (CPI-U) and "PCE: Chain-Weight" index for the most recent years and quarters. These two indexes present alternative measures of period-to-period price change.[3]

The difference between CPI and PCE price measures, which widened with the upsurge of inflation in 1979, seems to be diminishing as inflation winds down. At 1.4 percentage points, the 1981 difference between the annual CPI and the PCE was half its value for 1980, and lower as well than the comparable number for 1979. The quarterly figures show a generally declining trend, although there is considerable variability. The difference for the fourth quarter of 1981 (0.3 percentage points) is the smallest quarterly difference in these alternative price measures in several years.

As demonstrated in the September article, the treatment of owner-occupied housing has historically been the largest source of PCE-CPI differences. The effect of alternative measures of owner-occupied housing can be estimated by comparing two BLS price indexes (CPI-U and CPI-X1) that are published monthly and measure housing in different ways.

In recent quarters, the "housing effect" has been smaller than it was in the first half of 1980. The negative entry for the fourth quarter of 1981 (−0.5 percentage points) occurred because the CPI-U, which follows the traditional BLS treatment of housing, advanced less than the CPI-X1 index, which approximates a "rental equivalence" measure of housing. (The BLS has announced plans to change the treatment of housing in the CPI-U index to incorporate a rental equivalence treatment, beginning in January 1983.[4])

Weighting differences are a second source of PCE-CPI differences. The CPI-U weights are drawn from an expenditure survey taken in 1972-73; weights for the PCE: Chain-Weight index are always taken from the period just preceding the date of publication (for example, weights for the 1981-IV index come from 1981-III), and so are more nearly current than are the CPI weights.

Table 1. 'Reconciliation' of annual, 1979-81, and quarterly, 1980-81, percent changes in the CPI-U and the Personal Consumption Expenditure price measures

Difference	1979	1980	1981	1980[1] [2]				1981[2]			
				I	II	III	IV	I	II	III	IV
CPI-U[3]	11.3	13.5	10.4	16.5	13.5	7.7	12.8	11.0	7.8	11.8	7.7
PCE: Chain-Weight[4]	9.3	10.6	9.0	12.5	9.7	9.5	10.1	10.3	6.5	8.7	7.4
Total difference[5] (CPI-U minus PCE: Chain-Weight)	2.0	2.9	1.4	4.0	3.8	−1.8	2.7	.7	1.3	3.1	.3
Housing treatment[6]	1.7	2.3	.9	3.6	3.4	−1.9	1.9	.4	.5	2.7	−.5
Weighting effect[7]	.3	.4	.1	.7	.2	.0	.0	.6	.0	−.5	−.2
"All other" effect[8]	.0	.2	.4	−.3	.2	.1	.8	−.3	.8	.9	1.0

[1] Owing to changes in seasonal adjustment factors, the quarterly figures may differ slightly from those which appeared in *Monthly Labor Review* Table 3, p. 9, September 1981 and Table 1, p. 43, January 1982.

[2] Seasonally adjusted annual rates.

[3] Annual and quarterly changes in the CPI-U are taken from tables provided by the Office of Prices and Living Conditions, Bureau of Labor Statistics. The changes are compiled from 1967 based indexes.

[4] Data for the "PCE: Chain-Weight" were obtained from the Bureau of Economic Analysis, U.S. Department of Commerce.

[5] CPI-U minus "PCE: Chain-Weight" equals the sum of "housing treatment", "weighting" and "all other" effects.

[6] Change in CPI-U minus change in CPI-X1. See September 1981 *Monthly Labor Review*, p. 21, for fuller explanation. Source of CPI-X1 data is same as source in footnote 3.

[7] Change in "PCE: 1972-Weight" minus change in "PCE: Chain-Weight". See September 1981 *Monthly Labor Review*, pp. 8-9, for fuller explanation. Data source for "PCE: 1972-Weight" changes is same as for footnote 4.

[8] Change in CPI-X1 minus change in "PCE: 1972-Weight". See September 1981 *Monthly Labor Review*, p. 6, for fuller explanation.

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Table 2. 'Reconciliation' of the CPI-U and the Personal Consumption Expenditure price measures: cumulative percent change from 1972 to the date shown

Difference	1979	1980	1981	1980[1]				1981			
				I	II	III	IV	I	II	III	IV
CPI-U (1972=100)[2]	173.6	197.0	217.4	189.1	195.2	198.9	204.9	210.3	214.3	220.4	224.6
PCE: Deflator (1972=100)[3] (Current-Weight)	166.6	178.9	193.8	172.9	177.0	180.7	184.9	188.5	191.5	195.7	199.4
Total difference[4] (CPI-U minus PCE Deflator)	11.6	18.1	23.6	16.2	18.2	18.2	20.0	21.8	22.8	24.7	25.2
Housing treatment[5]	7.0	11.7	14.5	10.5	12.2	11.6	12.7	13.3	13.7	15.4	15.5
Weighting effect[6]	3.7	5.4	7.2	4.9	5.1	5.6	5.9	7.3	7.4	7.2	7.0
"All other" effect[7]	.9	1.0	1.9	.8	.9	1.0	1.4	1.2	1.7	2.1	2.7

[1] Owing to changes in seasonal adjustment factors, quarterly figures may differ slightly from those which appeared in *Monthly Labor Review* Table 4, p. 10, September 1981 and Table 2, p. 44, January 1982.

[2] Annual data for the CPI-U were computed by the Office of Research and Evaluation from unadjusted monthly data provided by the Office of Prices and Living Conditions, Bureau of Labor Statistics. The quarterly data for 1980 and 1981 were computed by the Office of Research and Evaluation employing seasonally adjusted monthly data provided by the Office of Prices and Living Conditions.

[3] Data for the implicit PCE Deflator, or "PCE: Current-Weight" index, were provided by the Bureau of Economic Analysis, U.S. Department of Commerce. The data incorporate revisions released in April 1981.

[4] CPI-U minus PCE Deflator equals the sum of "housing treatment", "weighting" and "all other" effects.

[5] CPI-U minus CPI-XI. See September 1981 *Monthly Labor Review*, p. 5, for fuller explanation. Data source for the CPI-XI is the same as footnote 2.

[6] "PCE: 1972-Weight" minus "PCE: Current-Weight". See September 1981 *Monthly Labor Review*, p. 6, for fuller explanation. Data source for the "PCE: 1972-Weight" is same as footnote 3.

[7] CPI-XI minus "PCE: 1972-Weight". See September 1981 *Monthly Labor Review*, p. 6, for fuller explanation.

As pointed out in the September 1981 article, the effect of utilizing different weights on disparities between the measures is far smaller than has often been supposed. Since mid-1980, weighting effects have essentially been zero, although there was more impact from this source in 1979 and early 1980. Negative values for weighting effects in the two most recent quarters reflect the fact that the index with the most recent weights (the PCE: Chain-Weight) has been rising somewhat *more* rapidly than an index based on the same price data but using 1972 weights.[5] It is usually expected that use of more recent weights will result in an index that rises *less* rapidly; as table 1 shows, this expectation is not always borne out.

The "all other" effect measures the influence of computational and compilation factors on the difference between the CPI and PCE measures (everything other than the period for which the weights were drawn, and the treatment of owner-occupied housing). The precise sources of the "all other" effect have not been quantified, but seasonal adjustment methods undoubtedly are important. PCE seasonal adjustment factors for 1981 and 1980 have not yet been re-estimated, while the CPI seasonals are revised annually; this has probably contributed to the increased magnitude of the "all other" effect in the quarterly numbers, an explanation that is consistent with the annual figure for 1981 (0.4) being so much lower than the quarterly figures.

Reconciling cumulative changes

For technical reasons, two reconciliations are necessary.[6] The first reconciliation, covered in the previous section, addresses the question: "What are the reasons the CPI and PCE price measures show different rates of change from one period to the next?" The reconciliation of the differences between the measures in this section answers the question: "What accounts for the cumulative divergence in the CPI and PCE since 1972?"

Table 2 reconciles the CPI-U and the Implicit Price Deflator for Personal Consumption Expenditures (PCE: Current-Weight) with 1972 as the base year. By the fourth quarter of 1981, the PCE: Current-Weight index indicated that consumption prices had almost doubled since 1972 (a 99-percent increase); by the CPI-U measure, the increase was nearly 125 percent. Of the approximately 25-percentage-point difference between the two, housing treatment accounted for three-fifths (15.5 percentage points). The table also shows that choosing current period weights instead of 1972 weights creates a difference of 7 percentage points, over a period when prices have doubled, by either alternative measure. The weighting effect has declined slightly in the most recent two quarters from its high reached early last year.

BOTH RECONCILIATIONS SUGGEST that the inflation rates recorded by CPI and PCE price measures may be converging. Quarterly and annual percentage increases in the two price measures differ less in 1981 than in the previous 2 years, and the cumulative reconciliation shows a similar picture. ☐

FOOTNOTES

[1] Jack E. Triplett, "Reconciling the CPI and PCE Deflator," *Monthly Labor Review*, September 1981, pp. 3–15.

[2] *Ibid.*

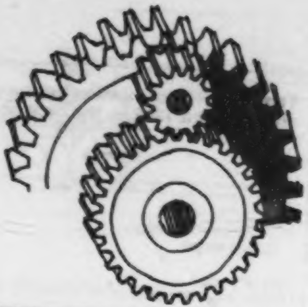
[3] As discussed in Triplett, pp. 7, 13–14, the Implicit PCE Deflator, a Paasche-formula index, cannot be used for this reconciliation because Paasche-formulas lend themselves to statistical interpretation only when referring back to the base year (in this case, 1972).

[4] See "Labor Month in Review: CPI changes," *Monthly Labor Review*, November 1981, p. 2.

[5] See footnote 7 to table 1 and the September 1981 MLR article for information on the computation of the weighting effect.

[6] See Triplett, pp. 7, 13–14.

Productivity Reports



Productivity declined in 1980 in most industries measured

ARTHUR S. HERMAN

Productivity, as measured by output per employee hour, declined in 1980 in more than half of the industries for which the Bureau of Labor Statistics regularly publishes data. Although a number of important industries, such as coal mining, petroleum refining, and major household appliances registered significant gains, the productivity falloff in most industries was consistent with the situation in the nonfarm business sector as a whole, which had a 0.3-percent decline in 1980.

Table 1 shows productivity trends for the industries currently measured by the Bureau and includes new measures for the transformer, machine tools (including separate measures for metal cutting and metal forming machine tools), and nonwool yarn mill industries.[1] Data for 1980 are preliminary. The table also includes, for the first time, a series for the hardwood veneer and plywood industry, and the softwood veneer and plywood industry. These measures were developed by disaggregating the existing measure for veneer and plywood. Many of the measures have been revised back to 1972, due to the introduction of more current data. The labor input series for the mining industries have been revised to include nonproduction worker hours. Therefore, the mining productivity series now refer to output per employee hour rather than output per production worker hour, as previously published.

Changes by industry

Manufacturing. The motor vehicles industry, one of the more economically significant industries covered, had a large productivity decline of 4.4 percent in 1980. Output plummeted 28.2 percent as demand was off sharply for passenger cars, trucks, truck trailers, and buses. Employee hours were reduced drastically, down 24.9 percent. Productivity also declined in 1979, dropping 1.2 percent as both output and hours fell, but less sharply than in 1980. In steel manufacturing, another important industry, productivity declined 3.7 percent in 1980, after falling 1.3 percent in 1979. Output in this industry declined significantly, down 17.0 percent, because of a decrease in demand from such key markets as motor vehicles, construction, and appliances, while hours were reduced 13.8 percent.

Among other large manufacturing industries, a major productivity decline of 13.2 percent occurred in the construction machinery industry as output dropped 19.7 percent due to poor conditions throughout the construction industry. Productivity in the gray iron foundry industry declined 6.0 percent as output dropped a steep 21.7 percent. Productivity declines associated with large output reductions occurred in the measures for motors and generators (–4.1 percent), household furniture (–2.2 percent), and sawmills (–1.9 percent). Output fell more than 10 percent in 1980 in these three industries.

However, a number of manufacturing industries experienced productivity gains in 1980. But for many, the productivity increases reflected declines in output associated with even greater reductions in hours. In the fluid milk industry, for example, productivity grew 5.7 percent as output fell 0.1 percent and hours dropped 5.5 percent. Productivity increased 4.9 percent in the household appliance industry as output declined 6.8 percent and hours fell 11.1 percent. The petroleum refining industry had a productivity gain of 4.4 percent with output down 6.4 percent and hours dropping 10.3 percent.

Mining. Productivity in coal mining increased 12.6 percent in 1980, after falling in almost every year in the past decade. Coal output grew 6.4 percent owing to increased demand as a petroleum substitute, growing exports and stockpiling in anticipation of a strike in 1981, while hours fell 5.5 percent. However, productivity declines occurred in the other mining industries covered, with copper mining (recoverable metal) dropping 7.4 percent, nonmetallic minerals down 5.8 percent, and iron mining (usable ore) declining 0.2 percent.

Transportation and utilities. Productivity changes were mixed in transportation and utility industries. A

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Table 1. Indexes of output per employee hour in selected industries 1975–80 and percent changes 1979–80 and 1975–80

[1977 = 100]

SIC code[1]	Industry	1975	1976	1977	1978	1979	1980[2]	Percent Change 1979–80	Average Annual Percent Change 1975–80
	Mining								
1011	Iron mining, crude ore	112.7	113.5	100.0	116.7	125.3	126.6	1.0	3.0
1011	Iron mining, usable ore	117.8	115.9	100.0	119.1	125.5	125.3	–0.2	2.1
1021	Copper mining, crude ore	87.2	99.2	100.0	109.6	103.8	98.1	–5.5	2.4
1021	Copper mining, recoverable metal	77.2	94.7	100.0	107.6	97.8	90.6	–7.4	2.8
111,121	Coal mining	105.3	103.1	100.0	106.4	99.4	111.9	12.6	0.7
121	Bituminous coal and lignite mining	105.2	103.0	100.0	106.7	99.6	111.8	12.2	0.8
14	Nonmetallic minerals, except fuels	90.6	96.2	100.0	104.7	102.6	96.6	–5.8	1.6
142	Crushed and broken stone	91.4	93.7	100.0	108.9	108.5	104.4	–3.8	3.5
	Manufacturing								
2026	Fluid milk	95.5	99.5	100.0	107.9	116.2	122.8	5.7	5.3
203	Preserved fruits and vegetables	93.7	100.1	100.0	104.4	99.3	(3)	(3)	1.6[4]
2033	Canned fruits and vegetables	92.2	102.3	100.0	103.7	101.4	(3)	(3)	2.1[4]
204	Grain mill products	87.1	91.1	100.0	100.4	101.9	(3)	(3)	4.2[4]
2041	Flour and other grain mill products	85.8	85.1	100.0	101.7	98.6	92.6	–6.1	2.4
2043	Cereal breakfast foods	94.8	100.0	100.0	101.7	107.6	(3)	(3)	2.7[4]
2044	Rice milling	90.4	88.7	100.0	92.7	92.9	(3)	(3)	1.0[4]
2045	Blended and prepared flour	106.2	110.9	100.0	92.5	90.1	(3)	(3)	–5.0[4]
2046	Wet corn milling	74.1	83.2	100.0	102.0	110.7	(3)	(3)	10.6[4]
2047,48	Prepared feeds for animals and fowls	85.9	90.1	100.0	100.9	102.1	(3)	(3)	4.7[4]
205	Bakery products	93.4	93.9	100.0	97.2	94.1	97.6	3.7	0.6
2061,62,63	Sugar	94.0	95.8	100.0	100.7	108.6	113.2	4.2	3.8
2061,62	Raw and refined cane sugar	90.8	92.5	100.0	100.0	106.4	(3)	(3)	4.0[4]
2063	Beet sugar	98.1	101.7	100.0	101.1	111.0	(3)	(3)	2.4[4]
2065	Candy and confectionary products	90.8	84.9	100.0	107.9	(3)	(3)	(3)	(3)
2082	Malt beverages	86.1	95.5	100.0	100.3	107.6	109.9	2.1	4.6
2086	Bottled and canned soft drinks	87.2	94.2	100.0	104.5	105.6	108.8	3.0	4.4
2111,21,31	All tobacco products	93.9	97.8	100.0	102.8	102.2	103.2	1.0	1.8
2111,31	Cigarettes, chewing and smoking tobacco	93.3	96.7	100.0	103.8	102.1	102.2	0.1	1.9
2121	Cigars	93.7	99.9	100.0	98.0	103.8	110.8	6.7	2.7
2251,52	Hosiery	94.3	106.4	100.0	101.8	106.5	108.0	1.4	2.0
2281	Nonwool yarn mills	101.2	93.5	100.0	104.2	103.9	106.1	2.1	1.7
2421	Sawmills and planing mills, general	98.8	103.2	100.0	101.4	104.8	102.8	–1.9	0.7
2435,36	Veneer and plywood	97.8	97.9	100.0	101.7	95.8	96.7	0.9	–0.3
2435	Hardwood veneer and plywood	92.5	89.1	100.0	100.7	101.2	98.2	–3.0	2.0
2436	Softwood veneer and plywood	100.5	102.1	100.0	102.1	93.4	96.6	3.4	–1.3
251	Household furniture	97.5	99.7	100.0	104.6	101.3	99.1	–2.2	0.5
2511,17	Wood household furniture	98.0	101.3	100.0	104.9	101.6	(3)	(3)	1.1[4]
2512	Upholstered household furniture	97.2	98.1	100.0	108.8	104.9	(3)	(3)	2.6[4]
2514	Metal household furniture	94.1	96.3	100.0	97.4	89.9	(3)	(3)	–0.8[4]
2515	Mattresses and bedsprings	96.9	99.2	100.0	101.5	102.7	(3)	(3)	1.4[4]
2611,21,31,61	Paper, paperboard and pulp mills	86.7	95.0	100.0	103.2	105.4	106.6	1.1	4.0
2643	Paper and plastic bags	99.8	100.5	100.0	99.8	97.5	(3)	(2)	–0.5[4]
2651	Folding paperboard boxes	98.5	102.8	100.0	102.9	101.4	103.5	2.1	0.7
2653	Corrugated and solid fiber board boxes	96.2	101.5	100.0	103.5	107.1	107.5	0.4	2.2
2823,24	Synthetic fibers	84.5	89.5	100.0	105.2	115.0	108.6	–5.6	6.1
2834	Pharmaceutical preparations	92.5	98.4	100.0	98.9	106.4	106.6	0.2	2.7
2841	Soaps and detergents	97.3	100.1	100.0	105.3	104.2	(3)	(3)	1.9[4]
2851	Paints and allied products	94.2	97.3	100.0	104.7	105.7	106.2	0.5	2.6
2911	Petroleum refining	88.7	93.0	100.0	101.3	98.6	102.9	4.4	2.7
301	Tires and inner tubes	91.8	99.8	100.0	108.8	109.5	(3)	(3)	4.5[4]
314	Footwear	101.3	102.1	100.0	102.5	100.2	102.0	1.8	(5)
3221	Glass containers	98.5	98.2	100.0	101.4	105.9	112.7	6.4	2.6
3241	Hydraulic cement	84.7	92.4	100.0	101.3	96.0	92.0	–4.2	1.6
325	Structural clay products	91.0	94.9	100.0	102.6	96.4	92.0	–4.6	0.4
3251,3,9	Clay construction products	89.1	94.2	100.0	102.6	92.5	90.2	–2.5	0.1
3251	Brick and structural clay	93.1	102.2	100.0	96.5	85.8	79.9	–6.9	–3.7
3253	Ceramic wall and floor tile	89.0	89.0	100.0	115.5	112.0	(3)	(3)	7.5[4]
3255	Clay refractories	95.5	97.1	100.0	102.9	109.1	97.2	–10.9	1.3
3271,72	Concrete products	91.9	95.0	100.0	98.6	94.5	(3)	(3)	0.9[4]
3273	Ready-mixed concrete	97.5	98.8	100.0	103.1	99.8	(3)	(3)	0.9[4]
331	Steel	93.3	99.0	100.0	108.3	106.9	102.9	–3.7	2.3
3321	Gray iron foundries	97.0	96.4	100.0	102.1	96.9	91.1	–6.0	–0.8
3324,25	Steel foundries	107.5	105.7	100.0	98.1	99.3	96.6	–2.7	–2.1
3331,32,33	Primary copper, lead, and zinc	85.3	96.0	100.0	96.5	96.2	91.9	–4.5	1.0
3331	Primary copper	83.0	95.2	100.0	99.4	98.3	88.3	–10.2	1.1
3334	Primary aluminum	96.2	101.4	100.0	99.6	99.7	97.4	–2.3	(5)
3351	Copper rolling and drawing	76.8	86.1	100.0	96.2	98.8	94.0	–4.9	4.0
3353,54,55	Aluminum rolling and drawing	87.5	101.7	100.0	104.6	101.7	104.5	2.8	2.7
3411	Metal cans	87.0	93.4	100.0	102.3	103.5	106.9	3.3	4.0
3441	Fabricated structural metal	97.4	98.9	100.0	100.4	102.0	100.2	–1.8	0.7
3531	Construction machinery and equipment	93.9	96.3	100.0	105.8	100.3	87.1	–13.2	–0.6

Table 1. Continued — Indexes of output per employee hour

[1977 = 100]

SIC code[1]	Industry	1975	1976	1977	1978	1979	1980[2]	Percent Change 1979-80	Average Annual Percent Change 1975-80
3541,42	Machine tools	103.0	98.4	100.0	102.5	101.9	101.7	-0.2	0.2
3541	Metal cutting machine tools	102.9	97.3	100.0	103.6	103.1	104.7	1.6	0.8
3542	Metal forming machine tools	104.0	101.7	100.0	99.9	98.4	93.2	-5.3	-1.8
3562	Ball and roller bearings	97.5	98.0	100.0	105.6	105.4	93.9	-10.9	0.2
3612	Transformers	89.3	90.1	100.0	103.5	108.5	109.3	0.7	4.7
3621	Motors and generators	93.0	95.9	100.0	98.5	97.9	93.9	-4.1	0.3
3631,2,3,9	Major household appliances	93.6	96.6	100.0	100.5	108.7	114.0	4.9	3.9
3631	Household cooking equipment	97.8	100.7	100.0	100.3	108.5	119.8	10.4	3.6
3632	Household refrigerators and freezers	94.5	94.0	100.0	98.4	112.2	115.9	3.3	4.5
3633	Household laundry equipment	93.6	99.0	100.0	102.3	108.2	113.1	4.5	3.6
3639	Household appliances, N.E.C.	88.8	93.0	100.0	104.0	104.3	101.0	-3.2	3.0
3641	Electric lamps	96.4	102.9	100.0	103.0	106.2	103.8	-2.3	1.4
3645,46,47,48	Lighting fixtures	89.2	95.1	100.0	100.5	95.0	97.1	2.2	1.2
3651	Radio and television receiving sets	90.1	100.8	100.0	113.1	118.1	111.4	-5.7	4.9
371	Motor vehicles and equipment	87.7	93.9	100.0	99.7	98.5	94.2	-4.4	1.4
	Other								
401	Railroad transportation-revenue traffic	89.5	95.4	100.0	104.5	104.7	107.3	2.5	3.6
401	Railroad transportation-car miles	98.3	100.1	100.0	102.8	102.9	106.4	3.4	1.5
4111,31,414 PT	Class I bus carriers	97.0	93.8	100.0	99.7	101.5	104.8	3.3	1.8
4213 PT	Intercity trucking[6]	89.2	100.3	100.0	90.8	98.6	94.2	-4.5	0.6
4213 PT	Intercity trucking — general freight[6]	88.4	96.1	100.0	98.6	96.6	87.9	-9.0	-0.1
4511,4521 PT	Air transportation[6]	87.6	95.5	100.0	109.3	113.1	106.2	-6.1	4.6
4612,13	Petroleum pipelines	95.7	95.2	100.0	101.6	101.6	90.8	-10.6	-0.1
4811	Telephone communications	85.9	93.3	100.0	105.8	111.2	118.5	6.6	6.5
491,492,493	Gas and electric utilities	95.7	98.2	100.0	98.2	97.8	95.6	-2.2	-0.1
491,493 PT	Electric utilities	92.9	95.6	100.0	96.9	95.5	94.2	-1.4	0.1
492,493 PT	Gas utilities	101.4	103.5	100.0	101.4	104.4	99.0	-5.2	-0.2
54	Retail food stores[7]	100.7	102.0	100.0	95.4	96.6	96.8	0.2	-1.2
5511	Franchised new car dealers	95.0	96.6	100.0	98.6	94.6	98.8	4.4	0.2
5541	Gasoline service stations[7]	85.6	94.3	100.0	102.8	104.4	100.7	-3.5	3.3
58	Eating and drinking places[7]	101.0	101.4	100.0	97.6	96.7	94.8	-2.0	-1.4
5912	Drug and proprietary stores[7]	94.2	97.1	100.0	102.1	104.4	111.6	6.9	3.2
7011	Hotels, motels, and tourist courts[7]	89.7	95.7	100.0	105.0	99.6	91.9	-7.7	0.8
721	Laundry and cleaning services[7]	96.9	97.4	100.0	100.6	94.0	87.6	-6.8	1.7

[1] As defined in the *1972 Standard Industrial Classification Manual* published by the Office of Management and Budget.
[2] Preliminary.
[3] Not available.
[4] Percent change 1975–79.
[5] Rate of change is less than 0.05 percent.
[6] Output per employee.
[7] Output per hour of all persons.

NOTE: Although the output per employee hour measures relate output to the hours of all employees engaged in each industry, they do not measure the specific contribution of labor, capital, or any other single factor of production. Rather, they reflect the joint effects of many influences, including new technology, capital investment, the level of output, capacity utilization, energy use, and managerial skills, as well as the skills and efforts of the work force. Some of these measures use a labor input series that is based on hours paid and some use a labor input series that is based on plant hours. Because of revisions in source data and rebasing to 1977 = 100, a number of the measures published in this table differ from those previously published.

10.1-percent decline occurred in the petroleum pipeline industry as output decreased because of reduced demand for petroleum products. Productivity dropped 6.1 percent in air transportation, the first productivity decline since the measure began in 1947, as output fell. Productivity in intercity trucking fell 4.5 percent, the fourth consecutive decline, as output dropped 9.7 percent due to decreased shipments of consumer products, construction materials, and petroleum. Conversely, the two transportation industries that posted gains were bus carriers (3.3 percent) and railroads (revenue traffic, 2.5 percent). Electric and gas utilities had a productivity decline of 2.2 percent, based on a small increase in output and a larger gain in hours. Telephone communications, however, had a productivity gain of 6.6 percent, associated with a large gain in output.

Trade and services. Productivity changes also varied among trade and service industries. Productivity declined in hotels and motels (–7.7 percent), laundries and dry cleaning (–6.8 percent), gasoline stations (–3.5 percent), and eating and drinking places (–2.0 percent). Output fell in all of these industries. Conversely, productivity in drugstores rose 6.9 percent as output was up. New car dealers had a productivity gain of 4.4 percent, based on a sharp drop in output and an even steeper drop in hours. Retail food stores posted a small productivity gain of 0.2 percent, as output was up 2.6 percent.

Trends, 1975–80

While all of the measured industries registered gains over the long term (generally 1947–80 or 1958–80),[2] a significant number of industries had declining productivity over the more recent 5-year period, 1975–80. More than three-quarters of the industries recorded lower productivity during this period than in the preceding long term period (1947–75 or 1958–75.) This slowdown was consistent with the trends in the nonfarm business sector of the economy where productivity grew 0.6 [ercent from 1975–80, compared with 2.4 percent from 1947–75.

Gains. In recent years, the wet corn milling industry showed the highest rate of gain among the measured industries. Productivity grew 10.6 percent during 1975–79 (1980 data were not yet available). The productivity advance in this industry was aided by a high rate of output growth (9.2 percent) as strong demand for high fructose syrup, one of the industry's key products, continued. During this period, a number of new plants were opened and a significant amount of highly automatic manufacturing equipment came on line. The second highest rate of productivity growth was for ceramic wall and floor tile (1975–79 rate of 7.5 percent). A new technique for firing tile which became widespread in the industry, coupled with changes in materials handling, resulted in significant labor savings.

Other industries with current, high rates of growth were telephone communications (6.5 percent), synthetic fibers (6.1 percent), and fluid milk (5.3 percent). In the telephone industry, high output growth was sustained over 1975–80 (9.8 percent a year) and productivity was aided by expanded use of electronic switching equipment. In synthetic fibers, a highly capital intensive industry, output averaged 4.8 percent while hours were down 1.1 percent, resulting in the productivity gain. In the fluid milk industry, output was up at a low rate of 0.5 percent, while hours dropped at a rate of 4.5 percent. New, larger plants utilizing highly automatic computerized processing came on line during this period, while a number of smaller, less efficient milk plants were closed.

Declines. The flour industry had the largest average falloff in productivity, dropping 5.0 percent from 1975 to 1979. Output declined at an average rate of 2.2 percent while hours grew at a rate of 2.9 percent. Other industries with significant declines over 1975–80 were brick and structural clay tile (–3.7 percent), steel foundries (–2.1 percent), metal forming machine tools (–1.8 percent), and laundries (–1.7 percent). Twelve other industries recorded declining rates over the 1975–80 period, including such large industries as eating and drinking places (–1.4 percent), retail food stores (–1.2 percent), gray iron foundries (–0.8 percent), as well as gas and electric utilities and intercity trucking (both –0.1 percent).

A full report, *Productivity Measures for Selected Industries, 1954–80,* BLS Bulletin 2128, is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. □

FOOTNOTES

[1] For a detailed report on these industries, see the following *Monthly Labor Review* articles: John Duke and Horst Brand, "Cyclical behavior of productivity in the machine tool industry," November 1981, pp. 27–34; Phyllis Flohr Otto, "Transformer industry productivity slows," November 1981, pp. 35–39; and James D. York, "Nonwool yarn mills experience slow gains in productivity," March 1982, pp. 30–33.

[2] About half of the data were collected beginning in 1947 and the remainder was collected from 1958 to present.

Technical Note

Estimation procedures for the Employment Cost Index

G. Donald Wood, Jr.

The quarterly Employment Cost Index (ECI),[1] which includes measures of change in wages and salaries and in compensation (wages and salaries plus the employer cost of employee benefits), is estimated using the standard Laspeyres index formula. The general survey sample was specially designed to permit the construction of these standard indexes.

Indexes of wages and salaries are also available for union status and location categories. It is not possible to estimate standard Laspeyres indexes for these categories, because union status and location were not included in the basic sample design. However, information on these characteristics is collected from the sample establishments, and may be combined with data on wages and salaries to estimate quarter-to-quarter changes. The quarterly changes can then be used to derive special indexes by union status and location.

These special indexes have many of the properties of Laspeyres chain indexes. For example, each quarter the fixed-base-period-employment weight for each occupation by industry defined in the ECI sample design is apportioned between union and nonunion sectors. The current distribution of the work force in that occupation and industry, as reflected in the current sample, is the basis for the appropriation. The weights are used to compute quarterly changes in wages and salaries for the union and nonunion series. These changes are then multiplied together (chained) to estimate an index. Indexes derived in this fashion—special indexes—will be discussed in more detail after derivation of the standard indexes is described.

The ECI index of wages

The standard formula for the wage index is:

$$(1)\qquad I_t = \frac{\sum_i W_{it} E_{ib}}{\sum_i W_{i0} E_{ib}} \times 100$$

W_{i0} is the wage rate for the *i*th type labor in the reference period *0*—June 1981. (Labor of type *i* is defined in terms of an occupation within an industry.) W_{it} is the wage rate for the *i*th type labor in the current period *t*, and E_{ib} is employment of the *i*th type labor in the base period *b*, 1970.

In actual practice, the formula becomes:

$$(2)\qquad I_t = \frac{\sum_i CW_{it}}{\sum_i CW_{i0}} \times 100$$

where:

$CW_{i0} = \overline{W}_{i0} E_{ib}$ = The cost weight of the *i*th type labor at time *0*;

$CW_{it} = \overline{W}_{it} E_{ib}$ = The cost weight of the *i*th type labor at time *t*;

$\overline{W}_{i0}$ = The average wage at time *0*, estimated from the sample observations;

$\overline{W}_{it} = r_{it} (W_{i_{(t-1)}})$ = The average wage at time *t*;

r_{it} = The estimated relative change in wages between time *t-1* and time *t*. It is the estimate of the ratio of the wage rate at time *t* to the wage rate at time *t-1*. The estimate is based on matched wages—that is, wages for specific occupations and establishments that provide data for both periods.

The compensation index

The calculation of the ECI index of compensation is similar to that described above for wages. For the reference period *0*, a cost weight for wages (CW_{i0}) is calculated as described above. In addition, a cost weight for benefits (CB_{i0}) is calculated by multiplying the average cost of benefits per hour worked times employment in 1970:

$CB_{i0} = \overline{B}_{i0} (E_{ib})$ = The cost weight for benefits in the reference period *0*.

where $\overline{B}_{i0}$ is the average cost of benefits per hour worked for the *i*th type labor in period *0*.

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The benefit cost weight in period *t-1* is multiplied by the estimated change in benefit cost ($r^{B}_{i(t)}$) between times *t-1* and *t* to get the next quarter's cost weight (CB_{it}):

$$\text{(3)} \qquad CB_{it} = r^{B}_{i(t)}\, CB_{i(t-1)}$$

The compensation index at time *t* is formed by summing the wage and the benefit cost weights at time *t*, dividing by the sum of the wage and benefit cost weights for the reference period *0*, and multiplying by 100.

Calculation of component indexes

As noted, the ECI is a system of indexes. In addition to the indexes of wages and compensation for the private civilian economy, there are indexes for State and local governments, and for the private nonfarm economy. For each of the chief economic sectors, there are subindexes for both wages and compensation by industry and occupation. At this time, more industry and occupation indexes of wages than of compensation meet publication standards.

The standard subindexes of the ECI are estimated using the formulas given above. All that is necessary is to limit the summation to the groups of labor included in the component series. This is possible because a Laspeyres index can always be expressed as a weighted sum of any set of component indexes. Thus, the overall index *I* at time *t* may be expressed as:

$$\text{(4)} \qquad I_t = \sum_k I^k_t \,(RI)^k_0$$

where its subindexes (I^k) are defined by:

$$\text{(5)} \qquad I^k_t = \frac{\sum_{i\epsilon k} \overline{W}_{it} E_{ib}}{\sum_{i\epsilon k} \overline{W}_{i0} E_{ib}}$$

and the weights used to aggregate them to the total are called relative importances $(RI)^k_0$, defined by:

$$\text{(6)} \qquad (RI)^k_0 = \frac{\sum_{i\epsilon k} W_{i0} E_{ib}}{\sum_k \sum_{i\epsilon k} W_{i0} E_{ib}}, \text{ and } \sum_k (RI)^k_0 = 1$$

Special wage indexes

The indexes by union, metropolitan area, and region use a different estimation formula. The reason for the difference deserves attention.

The national ECI measures the change in the cost of fixed labor inputs where units of labor input are defined by an occupation in an industry, for example, operatives except transport in the textile mill products industry. For the aggregate index, no distinction is made between union and nonunion labor. For instance, if weavers performing a specific job in a textile mill were selected to represent operatives in the textile industry, the change in their wage rate between quarters would be used in calculating the quarterly relative for all series that included this type of labor. No change in the computation procedure would be made if the workers in the mill became union members. Both before and after the workers were organized, the change in the wage rate would represent operatives in the textile industry.

But for the union and nonunion series, it is desirable to take account of changes in the union status of workers. Using the example above, before the weavers are organized, they are included as nonunion textile operatives in the wage index for nonunion workers. After they are organized, they should be included in the union index for textile operatives.

Because such categorical shifts cannot be accommodated with a fixed-weight index, the union-status and other special indexes are derived in such a way that they are like chain indexes. The relative importance of the union and nonunion components of the *i*th type of labor (that is, an occupation within an industry) is allowed to vary over time as the sample changes. The union and other special indexes are derived by compounding successive quarter-to-quarter relatives (that is, percentage changes expressed as ratios) and multiplying by 100, rather than by comparing a current-quarter cost weight to some base-period cost weight. This procedure is followed because any base-period cost weight might, for example, reflect a different employment distribution between union and nonunion than prevails currently. These special indexes differ from the usual chain index, however, in that total employment, union plus nonunion, for each type of labor is held fixed at the 1970 level. The union relative, R^u, has the form:

$$\text{(7)} \qquad R^u_t = \frac{\sum_i \overline{W}^u_{it} \dfrac{E^u_{i(t-1)}}{E_{i(t-1)}} E_{ib}}{\sum_i \overline{W}^u_{i(t-1)} \dfrac{E^u_{i(t-1)}}{E_{i(t-1)}} E_{ib}}$$

where:

$\overline{W}^u_{it}$ = Wage of union labor of type *i* in time *t*;

$E^u_{i(t-1)}$ = Employment of union labor of type *i* in time *t-1*;

$E_{i(t-1)}$ = Employment of union and nonunion labor of type *i* in time *t-1*.

The index, I^u, is the product of the relatives times 100:

$$I^u_t = R^u_t \times R^u_{(t-1)} \cdots R^u_1 \times 100$$

The proportion of total employment represented by union labor at time *t* for the comparison between times *t-1* and *t* is based on the sample of matched quotes used in the estimation of the aggregate index. But note that the union wage in time *t-1* is not estimated directly from the sample observations. Rather, the matched sample is used to estimate the union wage rate for the *i*th type of labor relative to the wage of all labor of the *i*th type. This estimated relative is multiplied by the estimated average wage for all types of labor used in the aggregate index, as indicated by:[2]

$$\overline{W}^{u}_{i(t-1)} = \overline{W}_{i(t-1)} \left(\frac{W^{u}_{i(t-1)}}{W_{i(t-1)}} \right)_{av} \tag{8}$$

The union wage rate at time *t* is estimated as:

$$\overline{W}^{u}_{it} = r^{u}_{it}\, \overline{W}^{u}_{i(t-1)} \tag{9}$$

where r^{u}_{it} is the wage relative of union labor of type *i* based on matched quotes between time *t-1* and *t*.

Indexes before June 1981

All standard and special index values since June 1981 have been estimated using the equations described above. But before June 1981, only quarterly relatives for each series were calculated. Because index numbers were not being constructed at that time, there was no need to compare the current quarter cost weights to the reference period cost weights. Instead, the wages or compensation based on matched quotes were directly multiplied by 1970 employment.

For this reason, the indexes for periods before June 1981 have been estimated by dividing the index (*I*) for June 1981 by the product of previously derived quarterly change relatives (*R*). That is:

$$I_{\text{March 1981}} = I_{\text{June 1981}} \,/\, R_{\text{June 1981}} \tag{10a}$$

$$I_{\text{December 1980}} = I_{\text{June 1981}} \,/ (R_{\text{June 1981}})\,(R_{\text{March 1981}}) \tag{10b}$$

and so forth. ☐

FOOTNOTES

[1] See Beth Levin, "The Employment Cost Index: recent trends and expansion," elsewhere in this issue for additional information on the ECI program.

[2] In fact, the system does not explicitly compute all of the estimates described, but uses a simplified computational procedure which yields the same final estimates.

Foreign Labor Developments

Solidarity's proposals for reforming Poland's economy

HORST BRAND

Worker opposition in Eastern Europe is not a new phenomenon. Recall East Germany in 1953, Hungary in 1956, Poland in 1956 and subsequent years, and Czechoslovakia in 1968. Industrial unrest of more limited scope has occurred in Rumania and, according to Roy Medvedev,[1] in the Soviet Union. But in all of these countries, the revolts were short-lived, being quickly suppressed by the armed forces; thus, the political tendencies they might have spawned given time could not bear fruit. In Poland, by contrast, the broad-based workers' movement had the opportunity to mature to a much more advanced stage, characterized by Solidarity, an autonomous movement which superseded the established state-sponsored trade unions.

With the emergence of Solidarity, the workers left behind the more limited strike and protest actions of the early and mid-1970's which had had some favorable effects on the government's price, wage, and production policies, but made little lasting impact. Solidarity emerged from the inter-enterprise strike committee formed in August 1980 at Gdansk and Szczecin. Some of the committee's demands were unprecedented and audacious. It wanted free unions, in accordance with the 87th convention of the International Labour Organization, which had been ratified by Poland; the right to strike, and safety for strike participants and their helpers; freedom of speech, as guaranteed by the Polish constitution; restoration of jobs to employees dismissed for participating in earlier strike actions; liberation of all political prisoners; full publicity for Solidarity; the appointment of managers on the basis of competence; the abolition of privileges for the party apparatus, the police, and the internal security police; and a number of improvements in economic and social services.[2]

Solidarity lent form, structure, and articulateness to worker protest. By force of circumstance, it evolved into an opposition party, breaking the monopoly of the Polish United Workers Party.[3] (Solidarity explicitly recognized that party's "leading role," although this recognition came increasingly under attack from groups within the organization.) Among the tasks Solidarity faced was to formulate alternatives to the government policies and institutions that had led Poland to the brink of economic ruin. Here, another development which had gathered momentum since the mid-1970's became pertinent: some dissident Polish intellectuals, among them noted scholars and experts in economics, history, and other social sciences, either supported Solidarity or generated a climate in which ideas for reforming the Polish polity could flourish. Examples of this support included KOR (Committee for Worker Defense), established in 1976 to free workers from jail; the Experience and Future group, more inclined than KOR to reform the system "from within"; and the Flying University. Some members of these groups became key advisers to Solidarity during the crucial Gdansk negotiations in 1980.

Following is a discussion of some of Solidarity's goals and policies formulated and issued at its October 1981 convention. The discussion is based essentially on two documents which contain the basic thinking of Solidarity: *Position on Social and Economic Reform of the Country*, issued by the Network of Solidarity Organizations in Leading Factories, and *Programs of the Independent Self-Governing Trade Union Solidarity Adopted by the First National Congress of Delegations*, the Solidarity Congress' program resolution.[4] Solidarity's proposals can be divided into those involving (1) civil liberties and the rule of law; (2) the self-managed enterprise and its relation to the economy; and (3) the improvement of current economic conditions. Only the proposals dealing with self-managed enterprises are discussed in detail in this report.

Autonomous enterprise favored

Solidarity favors the creation of several types of enterprise—"social," state, cooperative, private, and mixed. The social enterprise was to be "the basic element of the national economy [with] full independence,

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autonomy of its workforce, and . . . self-financing." In contrast, state enterprises were to be created "only in exceptional cases, inspired by national interest . . . verified by Parliament." Like the social enterprise, the state enterprise was to be controlled by means of "economic instruments" and had to be self-financing.[5]

Self-financing was conceived to be a condition *sine qua non* of the self-managed enterprise. Self-financing would free enterprises from control of the government; it would be an incentive for efficiency, penalizing the inefficient enterprise. To encourage long-term investment, certain modifications to monetary policy would be necessary, for instance, low-interest loans and compulsory reserve funds. But, the principle of self-finance should be "unconditionally observed," and accordingly, the granting of bank credit should no longer be automatic.

The self-managed enterprise, as conceived by Solidarity, does not resemble in either form or structure the entrepreneurial firm in Western countries. There are fundamental differences in legal status. The self-managed enterprise would be run by its employees and their elected representatives, or an employees' council. The enterprise managers would be appointed by the employees' council, be "subservient" to it, and would be obliged to carry out the council's resolutions. Such subservience was intended not merely to ensure the democratic control of the enterprise, but also to sever the link between enterprise management, on the one hand, and the central administration and party hierarchy, on the other.

The function of an employees' council is not comparable to that of a board of directors in Western countries. The directors' authority is usually nominal and they often have interests in firms other than the one on whose board they sit. The employees' council would determine the direction of the enterprises' development and operation, labor and training policies, the division of profits, and the extent of cooperation with other enterprises and of foreign trade, for example. Profits would indeed "become the main stimulus of economic activity of an enterprise," and the amount of wages above a certain fixed floor would be determined by profits. However, profits could not be derived from monopoly practices, and enterprises would be monitored by a state agency to prevent such practices—to be specified by law—and sanctions would be imposed on violators. Solidarity did not define "profits," and it is not clear whether profits can be generated under the proposed conditions, which include the regulation of prices by the market, bolstered by competitive imports. The advocacy of the market as price regulator (with a few exceptions) was not a matter of ideology. It emerged from experience with Poland's system of rigid prices, which had stymied increases in supplies and, more important, had contributed to fostering bureaucracy.

Decentralization—a major concern

If there is one notion that pervades Solidarity's thinking as reflected in its program, it is decentralization: "The basic principle underlying economic reform is to provide safeguards for independence, self-management, and self-financing of enterprises, which implies the abolishment of the directive-allocative system and the structures associated with it."[6] The dismantling of the "directive-allocative system" would mean the demise of a vast state bureaucracy, as well as of the patronage base of the ruling party. There would still be a Council of Ministers, whose responsibilities would include formulating economic policies, and to which a staff of economic planners would report. But the state would no longer have ultimate authority; that authority would be transferred to the Sejm—the Polish parliament—which would have its own economic planning staff to avoid a "central planning monopoly." Furthermore, the planning authority of the Council of Ministers would not be inherent but delegated by the Sejm, for according to Solidarity's thinking, "socialized planning should be operated on the principle that the final decision belongs to representative, not executive bodies."[7]

The importance of central planning would be drastically reduced under Solidarity's proposals. Its scope would be restricted to the "indispensable, leaving the remainder to the self-controlling mechanisms" because experience has taught "that planning covering all spheres of social and economic life becomes the way and method for developing a totalitarian system that attempts to predict and control everything."[8] The central plan "is merely a plan for the government"[9] and it must not impose decisions on enterprises and regional entities, whose planning is to be "autonomous." Underlying the conception of autonomous planning is the assumption that the enterprise, being subject to various market and social forces, will always plan so as to improve its operations. Yet, such efforts must surely give rise to imbalances, and it is the task of central planning to deal with these imbalances, that is, "to determine basic dynamics and structural proportions," including the allocation of new capital investment.

Solidarity viewed the central administrative system that dominates the Polish economy as shackling the natural energies and competence of the Polish work force. It declared that the "essential matter" is to eliminate "the dictative and distributional mechanism of management, consisting, on the one hand, in establishing tasks and, on the other, establishing means or limits of expenditures . . . [This] mechanism is responsible for decrease in economic effectiveness, lack of balance, negative social effects (falsification of information, bureaucratization, disappearance of self-management)."[10]

But what would replace the central administrative system? Some of Solidarity's pertinent proposals include: direct, legally protected contract relations between suppliers and customers to replace directed distribution; self-financing of enterprises, regulated by taxation and credit, to supersede centrally controlled funding (the supervision of enterprise finances would be confined to ensuring conformance to law); and job assignments, plant layout, establishment of work norms and wage rates, and similar matters set by the self-managed enterprise, not the Ministry of Labor and Wages which no longer would oversee the enterprise staff (this task would fall to specialized institutions, themselves self-managed, which would render purely advisory and training services).

How, in Solidarity's conception, would central planning be implemented? Recail that Solidarity demanded that all administrative bodies charged with resource allocation be eliminated; that economic enterprises plan autonomously; that no administrative links exist between the planning authorities (at the top there would be at least two of them) and enterprises; and that the state budget be the only financial plan of the state.

The key to the answer is Solidarity's proposal that "instruments incoherent with the logic of economic market relations should be replaced by instruments operating via income and demand basis."[11] One infers from this viewpoint that the instruments consist largely of taxation and credit. Taxation is a policy instrument, in addition to financing the state budget, " . . . [The] taxes included in the liabilities of an enterprise would regulate the total financial balance in the economy, and also regulate the amount and distribution of income into production and consumption funds."[12] Taxes on enterprise income, furthermore, would be graduated to regulate increases in profits. Taxes on the enterprise's wage expenditures would be assessed so as to eliminate excessive differences in personal incomes between groups of employees.

Credit policy would function as it is designed to function in Western countries, that is, to protect the purchasing power of money and help stabilize the economy. The question of credit policy is much more complex than Solidarity's proposals suggest. Controls over foreign capital investments, for example, are not mentioned in its discussion of credit policy. Also the problem of rampant inflation in the current administered-price system is not satisfactorily discussed. Institutional reforms evidently take precedence over current policy problems. The banking system would be autonomous (although accountable to parliament, as it is not, or to only a tenuous degree, in the United States or in Great Britain). The banking system would cease to be accountable to the Ministry of Finance and, thus, could no longer be used to control enterprise funds. Enterprises would be free to avail themselves of credit, subject only to criteria of solvency and interest rates.

Abolishment of privileges

Decentralization and the self-managed enterprise directed by a workers' council is one of the axes of Solidarity's program. The abolition of privilege and social inequality is the other. The term "axes" is used deliberately here, for it refers to a coordinate system in which efficiency and equality are not tradeoffs, but are indispensable to each other. That is the sense of Solidarity's program.

The extent of privilege and inequality in Poland has been summarized in the Experience and Future group's *Report on the State of the Republic*:[13]

> The seventies were a decade when incomes rose rapidly, albeit most rapidly in the highest income bracket, the end result being a widening of the income differential to a ratio of 1 : 20 . . . . Part of society continues to live with lower than the social minimum income, while another segment, consisting of the privileged, has incomes several or even dozens of times the average . . . . There exists in Poland a very large group of people who live in poverty, quite often near the subsistence level.
>
> The mere fact of belonging to the Polish United Workers' Party does not automatically yield benefits. Only members of the active political core of the Party, its allied political groupings, and the administrative apparatus enjoy a privileged position in society. Their privileges extend to almost all spheres of life: access to status positions, real incomes, easier shopping, health, education, and foreign travel . . . . During the 1970's, these privileges were extended to relatively large groups in society; the decade also witnessed the inheritance of privilege. These groups, which do not share the concerns of the majority, are more interested in supplementing existing privileges and acquiring new ones than they are in improving any aspect of public life."

This situation lay at the root of the rise of Solidarity as a social movement; its program manifests the urge to deal with it.

The abolition of privilege is implicit in the proposed economic reforms. Employees' councils could readily control the pay and other compensation of appointed managers. They could institute personnel policies based on competence and experience rather than party membership. The accountability of government executives to the Sejm could serve to control their emoluments. And the proposed abandonment of the system of allocation and directed distribution would likewise eliminate many jobs to which privileges attach. The abolition of privilege is inseparable from the creation of a more productive economy. "The union calls for reform. Its purpose is to abolish the privileges of the bureaucracy and to rule out the possibility of their restoration. The reform must bring about the general liberation of industriousness and enterprise."[14]

Cost to workers not defined

The reform implies "public costs," but does not define what these costs would include. There is a possibility that jobs and income would be lost and inefficient enterprises would close. No central authority would be established to cope with these problems. The idea of the state as a service state is not considered; it is left implicit at best and usually ignored. For example, Solidarity's program declares that "the Union will resist the growing differences among enterprises and regions." Appropriate tax measures can help do this, but it has been the experience in Western countries that central authority must actively intervene (for example, federally sponsored area redevelopment or some kind of urban aid), however ineffectual such intervention may be. Solidarity would assign this task mainly to territorial bodies, and it would be implemented chiefly by taking over the social welfare activities currently operated by enterprises. A national social fund would shift aid to needy regions. It is not clear (but appears doubtful) whether the central planning or banking authorities would have sufficient power to influence the flow of investment funds so as to compensate regional imbalances. The ambivalence on this and related points reflect Solidarity's profound distrust of the state as it has experienced it.

Such distrust is apparent in the area of employment as well. Solidarity advocated "the universal right to work," and opposed unemployment.[15] It opposed staff reduction unless "there are social guarantees [such as allowances and retraining,] for people who are temporarily jobless." It did not, however, explicitly obligate the state to ensure full employment, although it foresaw "public costs" for the reforms it demanded. Other than to propose that regional boards form special employment commissions, Solidarity did not assign specific job-creating responsibilities to the state. It may be that it feared the state would create "unproductive" jobs.

THE SUPPRESSION OF SOLIDARITY does not impair the significance of its program. On the contrary, the program articulated the threat Solidarity ultimately posed to the "New Class"[16] and to its monopolistic control over social property. The program corresponded to profound social needs which, of course, will persist and which, if postwar history is any guide, will reassert itself in political action. ☐

FOOTNOTES

[1] See Roy A. Medvedev, *On Socialist Democracy* (New York, Alfred A. Knopf, 1975).

[2] The list of Solidarity's demands is reproduced in Jadwiga Staniszkis, "The Evolution of Forms of Working Class Protest in Poland: Sociological Reflections on the Gdansk-Szczecin Case, August 1980," *Soviet Studies*, April 1981, pp. 222–23.

[3] The Polish United Workers Party represents an amalgamation, compelled in the late-1940's, of the communist Polish Workers Party and the Polish Socialist Party. For a brief survey of the history of this amalgamation, see, Jaime Reynolds, "Communists, Socialists and Workers: Poland, 1944–48," *Soviet Studies*, October 1978, pp. 516–30.

[4] The writer uses the English translations of these documents. The translation for the *Program* is from the *Daily Report*, Eastern Europe, Nov. 4, 1981, of the U.S. Foreign Broadcast Information Service. The translator of the *Position* paper is unknown.

[5] Network of Solidarity Organizations in Leading Factories, *Position on Social and Economic Reform of the Country*, p. 7 ff.

[6] *Position* . . . , p. 2.

[7] *Ibid.*, p. 4.

[8] *Ibid.*

[9] *Ibid.*

[10] *Ibid.*, p. 5.

[11] *Ibid.*

[12] *Ibid.*, p. 11.

[13] The Experience and Future Group, *Poland Today: The State of the Republic* (Armonk, N.Y., M.E. Sharpe, 1981), pp. 55 and 65.

[14] *Solidarity Congress Program*, p. G–33.

[15] *Program*, p. G–38.

[16] The term originated with Milovan Djilas, the Yugoslav dissident who wrote a prophetic book titled, *The New Class* (New York, Praeger Publishers, 1957).

Research Summaries

Workers on long schedules, single and multiple jobholders

DANIEL E. TAYLOR AND EDWARD S. SEKSCENSKI

Although the "standard workweek" in the United States has been 40 hours for several decades, about 1 in every 4 workers labored 41 hours or more per week in May 1980. Workers on long schedules holding a single job totaled 21.3 million and those with two jobs or more, 3.2 million.

This report is concerned with that segment of the work force that works more than 40 hours per week, whether at one job or more. Data on multiple jobholders who worked less than 41 hours are also examined. The analysis consolidates data that previously appeared in two separate Bureau of Labor Statistics' reports. One report focused on extended workweeks of single jobs and the other on multiple jobholding. The information is from the May supplement to the Current Population Survey (CPS).[1]

The 40-hour workweek is widely accepted as the standard in labor law and collective bargaining agreements. In 1980, more than 56 million wage and salary workers, three-fifths of the total, were covered by provisions of the Fair Labor Standards Act (FLSA) that required premium wages for work in excess of 40 hours a week. Other laws covering workers in the Federal Government or in firms having Federal contracts contain premium pay provisions to discourage work in excess of 40 hours a week.[2] Forty hours is also the usual cutoff in major collective bargaining agreements that provide premium pay after a minimum number of weekly hours.[3]

A third of all employed men and more than 1 in 7 women in the work force exceeded the standard workweek in May 1980. (See table 1.) Full-time workers put in an average of 43.1 hours a week. One-third of both single and multiple jobholders who exceeded the 40-hour standard worked from 49 to 59 hours. However, a far higher proportion of single jobholders worked 41 to 48 hours than worked 60 hours or more, while the reverse was true for multiple jobholders, as shown in the following tabulation (numbers in thousands):

	Number at work	*Percent at work—*		
	41 hours or more	*41 to 48 hours*	*49 to 59 hours*	*60 hours or more*
Single jobholders	21,300	40	33	26
Men	16,600	37	34	29
Women	4,800	53	29	18
Multiple jobholders	3,200	27	34	39
Men	2,400	23	33	44
Women	800	37	36	27

For many workers, longer workweeks, whether on overtime or on second jobs, represent a tradeoff between income and leisure. It is not always the workers' choice, however, as evidenced by collective bargaining agreements that include provisions on the right to refuse overtime alongside provisions on the right to equal opportunity for overtime. Reasons for multiple jobholding include a variety of motivations in addition to increasing income such as gaining work experience, enjoyment of work, and helping a friend.[4]

Firms use overtime to overcome "disequilibrium conditions," such as a sudden increase in product demand, higher than usual worker absences, or other unanticipated events. Where premium wages cost less than recruiting, hiring, training, and fringe benefits for additional workers, overtime may be regularly scheduled.[5] A firm's demand for moonlighters, in contrast, usually represents a demand for part-time workers. Part-time employees are often relatively low-cost labor. Their wage rates tend to be below those of full-time workers and their fringe benefits fewer.

Single jobholders

About 16.6 million wage and salary workers were on extended schedules on their sole or primary job in May 1980; two-fifths of them received premium pay. Work-

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Table 1. Employed persons with single and multiple jobs working 41 hours or more, by sex, age, and marital status, May 1980

[Numbers in thousands]

Characteristics	Total employed	Worked 41 hours or more					
		Total		Single jobholders		Multiple jobholders	
		Number of workers	Percent of total employed	Number of workers	Percent of total employed	Number of workers	Percent of total employed
Age							
Total, both sexes, 16 and over	96,809	24,530	25.3	21,346	22.0	3,184	3.3
Total, men	55,782	18,935	33.9	16,570	29.7	2,365	4.2
16 to 19 years	3,929	471	12.0	419	10.7	52	1.3
20 to 24 years	7,236	2,035	28.1	1,785	24.7	250	3.5
25 to 34 years	15,129	5,621	37.2	4,911	32.5	710	4.7
35 to 44 years	11,075	4,622	41.7	3,974	35.9	648	5.9
45 to 54 years	9,606	3,524	36.7	3,073	32.0	451	4.7
55 to 64 years	6,982	2,319	33.2	2,083	29.8	236	3.4
65 years and over	1,815	343	18.9	325	17.9	18	1.0
Total, women	41,027	5,595	13.6	4,776	11.6	819	2.0
16 to 19 years	3,405	160	4.7	125	3.7	35	1.0
20 to 24 years	6,273	827	13.2	686	10.9	141	2.2
25 to 34 years	10,930	1,665	15.2	1,383	12.7	281	2.6
35 to 44 years	8,243	1,276	15.5	1,098	13.3	178	2.2
45 to 54 years	6,614	985	14.9	853	12.9	132	2.0
55 to 64 years	4,424	579	13.1	530	12.0	49	1.1
65 years and over	1,139	103	9.0	101	8.9	2	.2
Marital status							
Men:							
Never married	13,031	2,882	22.1	2,529	19.4	353	2.7
Married, spouse present	38,080	14,508	38.1	12,664	33.3	1,844	4.8
Separated	1,308	429	32.8	384	29.4	45	3.4
Widowed or divorced	3,363	1,116	33.2	993	29.5	123	3.7
Women:							
Never married	10,092	1,232	12.2	1,023	10.1	209	2.1
Married, spouse present	23,041	2,955	12.8	2,601	11.3	354	1.5
Separated	1,546	293	19.0	233	15.1	60	3.9
Widowed or divorced	6,348	1,114	17.5	919	14.5	195	3.1

weeks of 41 hours or more were the usual routine for many workers—two-thirds of the workers on long hours in May 1980. Such workers are less likely to receive premium pay than those who worked more than 40 hours in the survey week but usually do not. This is probably because the latter group works more often on jobs that are not covered by the Fair Labor Standards Act or by collective bargaining provisions on overtime pay.

Between May 1973 and May 1980, the proportion of full-time wage and salary workers who reported long workweeks on a single job turned down slightly (table 2). Amendments to the Fair Labor Standards Act during the 1970's, which brought additional workers under its overtime provisions, primarily in the service and retail trade industries, played an important role in the trend.[6]

Extended workweeks and premium pay are sensitive to changes in economic conditions. During the recessions of 1974–75 and 1980, both the proportion of workers on long schedules and the prevalence of premium pay for those who exceeded the standard workweek showed significant declines. Manufacturing plays an important role in such cyclical patterns. For example, in May 1980, manufacturing industries accounted for about 40 percent of the decline in the number of workers on extended workweeks although they employed 22 percent of all workers.

Sex and age. Men are far more likely than women to put in long workweeks. In May 1980, men made up 77 percent of the employees who exceeded 40 hours on a single job and accounted for 62 percent of all full-time employees. Further underscoring the differences, the majority of men reported working more than 49 hours, while the majority of women worked 41 to 48 hours.

Married men are particularly prone to work extended weeks. In May 1980, 30 percent of married men but only 21 percent of single men exceeded the standard. Marital status had the reverse effect on women—those who were separated, divorced, or widowed were most likely to exceed the standard (table 3). Race had the same relationship to extended workweeks for men and women. White men and women were more likely than blacks to work 41 hours or more on a single job.

Overall, a higher proportion of women than men received a premium rate of pay for hours in excess of 40 per week (43 versus 40 percent). This relationship was reversed for blacks, with men far more likely to receive premium pay for extended workweeks.

Workers, aged 25 to 44 years, were slightly over-represented among employees who exceeded the standard workweek on a single job in May 1980. Teenagers, as might be expected, had relatively small proportions on long workweeks. In each of the four age groups that span the working-age population, men were two-and-a-half times as likely as women to work extended hours.

Union status. Workers covered by union contracts are less apt to work long schedules and more likely to receive premium pay for weeks in excess of the standard. In May 1980, 16 percent of the union workers and 26 percent of nonunion workers had such schedules. Among workers on long workweeks, 68 percent of those covered by union contracts received premium pay, compared to 33 percent of other workers. These differences are explained, in part, by organized labor's ability to gain overtime premium provisions in collective bargaining agreements and the greater likelihood that union members will be covered by the Fair Labor Standards Act. As a result, employers generally incur higher costs for employing union members beyond the standard workweek.

Occupation and industry. Professional and technical workers, managers and administrators, and craftworkers accounted for over 9 million of the employees who exceeded the standard workweek in May 1980, 55 percent of the total. Of these three groups, however, only managers were heavily overrepresented. Employees in this group made up 21 percent of all employees who exceeded the standard workweek, but only 12 percent of all full-time employees.

Other occupations that were overrepresented on extended workweeks included farmers, transport equipment operatives, and salesworkers. In contrast, clerical and service workers and factory operatives were underrepresented (table 4).

Table 2. Full-time wage and salary workers who worked 41 hours or more on a single job and those who received premium pay, May 1973 to May 1980

[Numbers in thousands]

Year	All full-time wage and salary workers	Worked 41 hours or more		Received premium pay	
		Number	Percent of full-time workers	Number	Percent of those who worked 41 hours or more
1973 . .	62,202	18,105	29.1	7,697	42.5
1974 . .	63,714	17,564	27.6	7,302	41.6
1975 . .	61,785	15,450	25.0	5,587	36.2
1976 . .	64,546	16,679	25.8	6,621	39.7
1977 . .	66,441	18,174	27.4	7,697	42.4
1978 . .	69,429	18,977	27.3	8,138	42.9
1979[1] .	71,677	18,765	26.2	7,999	42.6
1980[1] .	71,728	16,600	23.1	6,708	40.4

[1] Data are not strictly comparable to those of earlier years.

Table 3. Full-time wage and salary workers who worked 41 hours or more on a single job and those who received premium pay, by sex, age, race, and marital status, May 1980

[Numbers in thousands]

Characteristic	Worked 41 hours or more		Received premium pay	
	Number	Percent of full-time workers	Number	Percent who worked 41 hours or more
Men	12,746	28.8	5,069	39.8
Age:				
16 to 19 years	362	23.2	210	58.0
20 to 24	1,558	26.4	912	58.5
25 to 54	9,243	30.2	3,397	36.8
55 and over	1,582	25.5	549	34.7
Race:				
White	11,962	30.2	4,623	38.6
Black and other	783	16.8	446	57.0
Marital status:				
Never married	2,075	23.7	998	48.1
Married, spouse present	9,600	30.3	3,630	37.8
Other	1,071	27.8	441	41.2
Women	3,854	14.1	1,639	42.5
Age:				
16 to 19 years	109	9.2	53	48.6
20 to 24	637	13.3	353	55.4
25 to 54	2,673	14.7	1,062	39.7
55 and over	435	13.2	172	39.5
Race:				
White	3,477	14.8	1,451	41.7
Black and other	378	9.5	188	49.7
Marital status:				
Never married	924	14.1	393	42.5
Married, spouse present	1,967	13.3	809	41.1
Other	963	16.0	437	45.4

The inverse relationship that generally exists between the prevalence of extended hours and premium pay may be observed among occupations. To illustrate, nearly half of all full-time farmworkers had extended workweeks, but only one-tenth of these received premium pay. However, 18 percent of factory operatives reported working more than 40 hours, with 84 percent of them receiving premium pay.

Similar proportions of employees were on long workweeks in the goods-producing and service-producing sectors in May 1980—about 23 percent (table 5). Within the goods-producing sector, agriculture had the highest proportion (46 percent), followed by mining (38 percent). Within the service-producing sector, the proportion of full-time workers on extended schedules ranged from 31 percent in trade to 10 percent in State public administration.

Nearly twice as many workers in the goods-producing sector as in the service-producing sector received a premium rate of pay for work in excess of the standard in May 1980 (56 versus 31 percent). Again, coverage by the Fair Labor Standards Act and collective bargaining agreements is an important factor in this difference. In September 1980, FLSA provisions covered 81 percent of the employees in the goods-producing sector compared with 51 percent in the service-producing sector. In terms of union coverage, 34 percent of the full-time workers in the goods-producing sector, and 26 percent

Table 4. Full-time wage and salary workers who worked 41 hours or more a week on a single job and those who received premium pay, by occupational group, May 1980

[Numbers in thousands]

Occupation	1980		
	Worked 41 hours or more		
	Number	Percent of full-time workers	Percent who received premium pay
All occupations	16,600	23.1	40.4
Professional, technical and kindred workers	3,018	24.0	21.4
Managers and administrators, except farm	3,513	41.4	12.7
Salesworkers	1,106	31.6	13.5
Clerical and kindred workers	1,820	11.8	58.5
Craft and kindred workers	2,655	25.1	65.8
Operatives, except transport	1,646	18.0	84.4
Transport equipment operatives	938	33.0	52.9
Laborers, except farm	528	17.3	69.3
Service workers	1,172	16.8	40.7
Farm workers[1]	404	47.8	10.9

[1] Includes farmers and farm managers.

NOTE: Because of rounding, sums of individual items may not equal totals.

in the service-producing sector were under collective bargaining agreements.

Multiple jobholders

In all, about 4.8 million persons, including both wage and salary workers and the self-employed, worked two jobs or more in May 1980. Their percentage distribution by hours on their primary job was similar to that of other jobholders, as shown below:

	Single jobholders	*Multiple jobholders*	
		Primary job	*All jobs*
Total	100	100	100
1–34 hours	25	30	15
35–40 hours	51	48	9
41 hours or more	24	22	76
Median weekly hours	40	40	51

As the tabulation shows, when hours on all jobs are cumulated, more than three-quarters of all dual jobholders worked beyond the standard workweek in May 1980. This represents 4 of every 5 men, and more than 2 of every 5 women, who held more than one job.

For all dual jobholders, combined median hours worked were slightly lower in 1980 than in 1979. The decrease resulted primarily from a drop of 2 hours (from 54 to 52) in the average workweeks of dual jobholding men. In addition, women—whose workweeks generally are shorter than those of men—increased their share of total dual jobholding from 30 to 33 percent, continuing a trend of at least a decade (table 6).

While total hours by dual jobholding women have been rising for several years, half of all women working two jobs continue to hold two part-time jobs. In contrast, more than three-fourths of the men who hold two jobs work one part-time and one full-time job. Another 6 percent of the men work two full-time jobs.

Table 5. Full-time wage and salary workers who worked 41 hours or more on a single job and those who received premium pay, by industry, May 1973 to 1980

Industry group	Worked 41 hours or more								Received premium pay							
	1973	1974	1975	1976	1977	1978	1979[1]	1980[1]	1973	1974	1975	1976	1977	1978	1979[1]	1980[1]
All industries	29.1	27.5	25.0	25.8	27.4	27.3	26.5	23.1	42.5	41.6	36.2	39.7	42.4	42.9	42.6	40.4
Goods producing	30.0	27.7	23.4	26.6	28.6	28.0	27.5	23.5	63.9	60.5	53.7	60.4	62.0	61.1	61.4	56.2
Agriculture	54.6	54.7	55.9	56.8	53.1	47.4	53.2	46.4	7.9	10.4	11.6	13.4	10.9	14.0	12.2	13.9
Mining	38.4	41.7	36.6	34.1	34.5	40.9	34.8	37.5	65.8	64.8	57.5	57.4	64.5	65.6	65.0	63.0
Construction	23.0	21.8	20.9	21.4	23.9	22.3	21.4	20.6	56.6	53.1	52.2	52.6	55.9	55.1	54.5	51.0
Manufacturing	30.1	27.3	21.5	25.7	28.0	27.7	27.1	22.3	69.9	66.7	59.9	67.3	68.4	66.7	67.9	61.9
Durable goods	31.3	28.7	20.6	25.3	28.7	28.6	28.2	22.5	73.7	70.3	62.6	69.5	70.4	70.0	70.9	64.2
Nondurable goods	28.3	25.1	22.8	26.4	27.1	26.2	25.5	21.8	63.4	60.4	56.1	64.1	65.2	60.9	62.5	58.3
Service producing	28.5	27.4	26.0	25.4	26.6	26.9	25.8	22.9	27.3	28.9	26.9	26.6	29.6	31.3	30.4	30.9
Transportation and public utilities	27.1	26.2	23.3	24.1	26.2	28.7	29.1	23.6	53.6	53.2	48.4	44.1	51.1	49.8	49.7	52.5
Wholesale and retail trade	39.3	37.1	35.9	35.7	36.6	35.8	34.6	31.4	27.5	30.0	28.3	26.5	31.0	32.0	32.0	31.3
Finance, insurance, and real estate	21.7	20.4	21.6	20.5	22.2	21.8	20.9	18.2	16.2	21.2	19.8	18.4	19.3	21.3	20.4	20.2
Miscellaneous services	26.2	25.9	24.0	22.7	23.7	24.3	22.9	20.5	18.8	19.9	18.8	19.0	22.0	24.0	21.6	23.4
Professional[2]	23.4	23.5	22.0	20.6	21.6	22.5	21.0	19.1	15.3	16.4	16.5	16.4	18.5	20.4	18.2	20.7
Other[3]	34.4	33.1	30.6	29.2	30.6	29.9	28.9	25.1	25.8	27.7	24.4	24.6	29.8	32.0	29.2	30.0
Public administration	17.1	17.0	15.5	15.5	16.6	16.7	15.7	15.5	36.9	34.8	35.9	37.5	36.2	43.4	40.7	40.7
Federal	15.0	13.5	11.4	13.4	14.8	15.2	14.6	15.2	58.1	57.3	53.1	58.8	53.0	58.7	52.3	51.7
Postal	20.4	12.9	9.0	16.7	18.1	21.3	18.1	20.9	68.2	59.1	(4)	76.4	78.3	80.8	78.4	73.9
Other Federal	12.1	13.8	12.4	11.9	13.4	12.6	13.1	13.0	49.1	56.6	46.6	48.0	38.4	43.3	37.7	38.2
State	15.8	14.7	14.3	11.4	11.1	12.1	9.7	10.3	24.0	16.5	11.2	17.9	18.9	31.0	41.5	30.1
Local	21.4	23.9	21.7	20.3	21.6	21.1	20.3	18.5	18.1	19.5	30.3	23.2	25.5	32.7	29.8	31.7

[1] Data are not strictly comparable to those of earlier years.

[2] Includes health, education, and welfare services.

[3] Includes forestry and fisheries, business and repair services, entertainment, personal services, and private household workers.

[4] Percent not shown where base is less than 75,000.

Table 6. Multiple jobholders and multiple jobholding rates, May 1970 to May 1980

[Numbers in thousands]

Year	Total employed	All multiple jobholders	At least one job in agriculture	Two jobs in nonagricultural industries			Multiple jobholding rate[1]				
				Total	Two wage and salary jobs	Wage and salary and self employed	Both sexes	Men	Women	White	Black[2]
1970	78,358	4,048	943	3,105	2,356	749	5.2	7.0	2.2	5.3	4.4
1971	78,708	4,035	851	3,184	2,288	896	5.1	6.7	2.6	5.3	3.8
1972	81,224	3,770	831	2,939	2,066	873	4.6	6.0	2.4	4.8	3.7
1973	83,758	4,262	987	3,275	2,410	865	5.1	6.6	2.7	5.1	4.7
1974	85,786	3,889	848	3,041	2,169	872	4.5	5.8	2.6	4.6	3.8
1975	84,146	3,918	890	3,028	2,131	897	4.7	5.8	2.9	4.8	3.7
1976	87,278	3,948	819	3,129	2,191	938	4.5	5.8	2.6	4.7	2.8
1977	90,482	4,558	922	3,637	2,515	1,122	5.0	6.2	3.4	5.3	2.8
1978	93,904	4,493	905	3,587	2,513	1,074	4.8	5.8	3.3	5.0	3.1
1979	96,327	4,724	871	3,852	2,650	1,203	4.9	5.9	3.5	5.1	3.0
1980	96,809	4,759	835	3,923	2,674	1,235	4.9	5.8	3.8	5.1	3.2

[1] Multiple jobholders as a percent of all employed persons.

[2] Starting with 1977, data are for black workers only. Data for prior years are for persons of black and other races except white, about 90 percent of whom are black.

Married men continued to be the most likely workers to extend their workweeks on second jobs (table 7), although their dual jobholding rates declined from 7.8 to 6.2 percent between 1970 and 1980. In contrast, the rates for married women rose from 1.8 to 3.4 percent over the same period. Dual jobholding rates also increased for women who were divorced, separated, or widowed, from 3.0 to 4.6 percent.

Occupations of dual jobholders. Wage and salary workers whose primary jobs were in professional or technical occupations were most likely to hold more than one job. Workers in these occupations tend to have both highly marketable skills and relatively flexible work schedules. Nearly 1 in 12 professional or technical workers held a second job in May 1980. For half of them, the second job was in the same occupation as their first job.

Teachers below the college level were particularly likely to hold a second job. About 11 percent of all teachers, and nearly 1 in 5 men in this profession, were moonlighters. Workers in the protective services (police, guards, and firefighters) and farmworkers also had higher than average rates of dual jobholding in 1980 (9.6 and 6.4 percent).

Factory operatives and clerical workers were the least likely to hold second jobs. For factory operatives, the greater availability of premium pay for extended workweeks undoubtedly is a factor in their lower incidence of multiple jobholding. In the case of clerical workers, the relatively high proportion of women in the occupation tends to lower the proportion of those holding two jobs. The dual jobholding rate for clerical workers was 3.8 percent, the same as for all women.

Self-employment and multiple jobholding. Two-fifths of all dual jobholders were self-employed on one of their jobs.[7] About 7 percent held primary self-employed positions; 34 percent were self-employed, on a second job.

The proportion of dual jobholders who were self-employed on a second job in agriculture was much higher than that in the nonagricultural sector (table 8). One half of all dual jobholders whose primary jobs were in agriculture were self-employed compared to 1 in 20 whose self-employment was in a nonagricultural industry.

Median hours worked at a self-employed second job were 13 per week in 1980, the same as for wage and salary second jobs. The average of those self-employed in agricultural second jobs, however, was 16 hours per week, compared to 11 hours per week for those in nonagricultural self-employed jobs. About one dual jobholder in eight who was self-employed on a second job in agriculture worked full time on both jobs. This compares to only 1 in 20 second jobholders in the nonagricultural sector who held two full-time jobs.

Reasons for working a second job. About 2 of every 5 persons working two jobs reported they did so to meet regular expenses or pay off debts. Another fifth said they wanted to save for the future or buy something special with their extra earnings. There is evidence that some multiple jobholders work a second job in preparation for a career change. More than 8 percent of the men and 6 percent of the women reported working two jobs in order to gain the necessary experience to meet the skill requirements of the second job. Another 17 percent stated that enjoyment of their second job was the main reason for dual jobholding.

Black workers, especially women, were more likely than white workers to report economic reasons as their prime motivation for working more than one job. Almost one-half of the black men and three-fifths of black women reported meeting regular expenses or paying off

Table 7. Multiple jobholders by sex, age, marital status, race, and Hispanic origin, May 1980
[Numbers in thousands]

Characteristic	Both sexes			Men			Women		
	Total employed	Multiple jobholders		Total employed	Multiple jobholders		Total employed	Multiple jobholders	
		Number	Percent		Number	Percent		Number	Percent
Age									
Total, 16 years and over	96,809	4,759	4.9	55,782	3,210	5.8	41,027	1,549	3.8
16 and 17 years	2,900	92	3.2	1,609	53	3.3	1,291	39	3.0
18 and 19 years	4,434	169	3.8	2,321	95	4.1	2,113	73	3.5
20 to 24 years	13,509	640	4.7	7,236	382	5.3	6,273	258	4.1
25 to 34 years	26,058	1,450	5.6	15,129	943	6.2	10,930	507	4.6
35 to 44 years	19,318	1,132	5.9	11,075	813	7.3	8,243	320	3.9
45 to 54 years	16,220	797	4.9	9,606	564	5.9	6,614	233	3.5
55 to 64 years	11,417	414	3.6	6,992	307	4.4	4,424	107	2.4
65 years and over	2,954	65	2.2	1,815	52	2.9	1,139	13	1.1
Marital status									
Single	23,123	1,015	4.4	13,031	616	4.7	10,092	398	3.9
Married, spouse present	61,121	3,142	5.1	38,080	2,356	6.2	23,041	786	3.4
Other marital status	12,565	602	4.8	4,671	237	5.1	7,894	364	4.6
Race and Hispanic origin									
White	85,955	4,401	5.1	50,172	2,990	6.0	35,783	1,410	3.9
Black	9,116	290	3.2	4,706	176	3.7	4,409	114	2.6
Hispanic origin[1]	4,985	147	3.0	3,043	104	3.4	1,942	43	2.2

[1] Persons of Hispanic origin may be of any race; hence, their numbers are included in the data for whites and blacks.

debts as their main reason for dual jobholding. White men and women reported these reasons about 40 percent of the time.

Age has a different effect on the motivations of men and women for multiple jobholding. For men, economic incentives to work a second job increase with age through the 25- to 34-year-old group, then decrease. For women, there is no similar pattern. More than two-fifths of women multiple jobholders reported that they worked two jobs to meet regular expenses or pay off debts. In general, more older than younger workers, both men and women, reported that enjoyment of their second job was the reason for dual jobholding.

Marital status also has different effects on the motivations of men and women for working second jobs. Married men were more likely to report economic reasons than married women (41 versus 34 percent). Single, divorced, separated, and widowed women, however, were much more likely than men of similar status to work two jobs out of economic need (49 versus 30 percent).

Underground economy—hidden employment

It is not known to what extent the estimates of moonlighting understate the true level of multiple jobholding in the United States. Some underestimating may result from nonreporting of work in the "underground" or "hidden" economy in an effort to avoid the payment of taxes or to draw unemployment compensation while employed. However, a large part of the hidden economy may simply represent the production of goods and services in an informal manner. Louis A. Ferman and others provide some information on the

Table 8. Multiple jobholders by type of industry and class of worker, May 1980
[Numbers in thousands]

Primary job	Total employed	Multiple jobholders		Second job in agriculture			Second job in nonagriculture		
		Number	Percent of employed	Total	Wage and salary	Self employed	Total	Wage and salary	Self employed
Total	96,809	4,759	4.9	722	173	549	4,036	3,024	1,012
Agriculture	3,458	180	5.2	67	42	25	113	107	6
Wage and salary	1,455	67	4.6	44	19	25	23	17	6
Self-employed	1,677	94	5.6	23	23	([1])	71	71	([1])
Unpaid family	326	20	6.1	0	0	([2])	20	20	([2])
Nonagriculture	93,351	4,578	4.9	655	131	524	3,923	2,917	1,006
Wage and salary	86,024	4,328	5.0	649	124	524	3,680	2,674	1,006
Self-employed	6,847	236	3.4	6	6	([1])	229	229	([1])
Unpaid family	479	14	3.0	0	0	([2])	14	14	([2])

[1] Self-employed persons with secondary businesses or farms, but no wage or salary jobs, were not counted as multiple jobholders.

[2] Persons whose primary jobs were as unpaid family workers, were counted as multiple jobholders only if they also held wage or salary jobs.

types of jobs and motivations of persons who work in the regular economy but moonlight in the hidden economy. They state that most of these moonlighters were "concerned primarily with meeting actual or perceived needs."[8] As to the extent of the hidden economy, estimates have ranged from 10 to 33 percent of the gross national product.[9]

Summary

Among all employed persons, men are far more likely than women to exceed the standard workweek. Women who work extended hours are slightly more likely than men to do so through multiple jobholding than on one job alone. Multiple jobs for women often consist of two part-time jobs, whereas men usually combine a full-time and a part-time job.

The occupational distribution of wage and salary workers on extended workweeks differs markedly between single and multiple jobholders. Managers and administrators who exceeded the standard workweek in May 1980 made up a far larger proportion of single than multiple jobholders (21 versus 11 percent). Salesworkers and operatives also were more heavily represented among single jobholders. In contrast, professional, technical, and service workers were more heavily represented among multiple than among single jobholders working 41 hours or more per week in May 1980. ☐

——— *FOOTNOTES* ———

[1] The Current Population Survey (CPS) is conducted for the Bureau of Labor Statistics by the Bureau of the Census. Information on the number of hours worked is collected monthly. A May supplement to the survey provided data on the receipt of premium pay for hours in excess of 40 per week and on multiple jobholding.

[2] Estimates of coverage under the Fair Labor Standards Act are from *Minimum Wages and Maximum Hours, Standards Under the Fair Labor Standards Act: An Economic Effects Study*, submitted to Congress in 1981 (U.S. Department of Labor, Employment Standards Administration, 1981), p. 42. For a history of the act, see Peyton K. Elder and Heidi D. Miller, "The Fair Labor Standards Act: changes of four decades," *Monthly Labor Review*, July 1979, pp. 10–16. The Federal Pay Act (U.S. Code, Title 5, ch. 61) covers Federal employees, while the Walsh-Healey Contracts Act (Public Law 74–846, June 30, 1936) and the Contract Work Hours and Safety Standards Act (Public Law 87–581, Aug. 13, 1961) apply to workers in firms holding Federal Government contracts.

[3] *Characteristics of Major Collective Bargaining Agreements, Jan. 1, 1980*, Bulletin 2095 (Bureau of Labor Statistics, May 1981), p. 60.

[4] See H. G. Lewis, "Hours of Work and Hours of Leisure," *Proceedings of the Ninth Annual Meeting of the Industrial Relations Research Association*, 1956, pp. 196–206; Robert Shisko and Bernard Rosther, "The Economics of Multiple Job Holding," *The American Economic Review*, June 1976, pp. 298–308; and Nand K. Tanden, *Workers with Long Hours*, Special Labor Force Studies, Series A, No. 9 (Ottawa, Ontario, Canada, Ministry of Industry, Trade and Commerce, 1972), pp. 33–37. Information on the overtime provisions in collective bargaining agreements are from *Characteristics of Major Collective Bargaining Agreements*, pp. 60–61.

[5] Joyce M. Nussbaum and Donald E. Wise, "The Overtime Pay Premium and Employment," *Work Time and Employment*, Special Report No. 28 (National Commission for Manpower Policy, October 1978), p. 322. For a discussion of the fixed costs of labor, see Walter Oi, "Labor as a Quasi-Fixed Factor," *Journal of Political Economy*, December 1962, pp. 538–55 and John D. Owen, "Why part-time workers tend to be in low-wage jobs," *Monthly Labor Review*, June 1978, pp. 11–14.

[6] See *Minimum Wage and Maximum Hours*, An Economic Effects Study Submitted to Congress, 1979 (U.S. Department of Labor, Employment Standards Administration, 1979).

[7] By definition, dual jobholders must hold at least one wage and salary job; they cannot be self-employed at two jobs.

[8] Louis A. Ferman, Louise Berndt, Elaine Selo, *Analysis of the Irregular Economy: Cash Flow in the Informal Sector*, a report to the Bureau of Employment and Training, Michigan Department of Labor, March 1978, p. 3–13.

[9] Norman N. Bowshner, "The Demand for Currency: Is the Underground Economy Undermining Monetary Policy?" *Review*, Federal Reserve Bank of St. Louis, January 1981, p. 13.

Marital and family patterns of workers: an update

HOWARD HAYGHE

A record 18.4 million women with children under age 18 were in the labor force in March 1981, including nearly half of all mothers with preschool children. The high level indicates the continuing impact that women of the "baby boom" generation are having on the job market. Now in their 20's and early 30's, many of these women are returning to work while their children are still infants. This is also one reason why today every other married-couple family is in the dual-earner category.[1]

Over-the-year changes

Wives. Labor force changes during the 12 months ending with March 1981 were typical of those that have been observed in recent years in connection with the entry or re-entry into the job market of women born after World War II. About 25.5 million wives, or 51 percent, were working or looking for work in March, 560,000 above the previous year's level. More than 2 of 3 of these net additions were mothers, and most of them had children under 6 years old. (See table 1 and 2.)

The rise in the number and proportion of working mothers, especially those with preschool children, is partly related to a small rebound in births among women 20 to 34 years old.[2] During the 1970's, women in this age group tended to delay marriage and postpone childbearing, often acquiring lengthy job experience and strong ties to the labor force. Now most are married

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Table 1. Employment status of persons 16 years and over by marital status and sex, March 1980, and March 1981

[Numbers in thousands]

Marital status and sex	Civilian labor force			Labor force participation rate (in percent)		
	March 1980		March 1981	March 1980		March 1981
	Original	Revised		Original	Revised	
Both sexes	103,339	105,449	107,721	63.2	63.2	63.6
Men[1]	59,376	60,514	61,306	76.8	76.6	76.4
Never married	15,134	15,590	15,799	70.7	70.6	70.6
Married, wife present	38,962	39,647	39,674	81.0	80.9	80.5
Married, wife absent	1,628	1,629	1,777	79.2	79.0	78.9
Widowed	565	552	544	28.7	27.9	27.9
Divorced	3,087	3,097	3,532	80.3	79.4	80.9
Women	43,963	44,934	46,414	51.1	51.1	52.0
Never married	10,911	11,242	11,628	61.2	61.5	62.3
Married, husband present	24,466	24,900	25,460	50.2	50.1	51.0
Married, husband absent	1,881	1,928	2,076	59.4	59.4	60.8
Widowed	2,359	2,421	2,416	22.5	22.5	22.3
Divorced	4,347	4,443	4,835	74.5	74.5	75.0

[1] Population includes male members of the Armed Forces living off post or with their families on post.

NOTE: Estimates of the civilian noninstitutional population have been recalculated using updated weights based on the 1980 Census of the Population; therefore, the 1980 revised data differ from 1980 data previously published.

Because of rounding, sums of individual items may not equal totals.

and many are having children. But, unlike the preceding generation of mothers whose early marriage and childbearing was followed by prolonged withdrawal from the labor force,[3] women are now either remaining in the work force or returning to it shortly after childbirth.

Reflecting these events, the labor force participation rate of wives with preschool children increased from 45 percent in March 1980 to nearly 48 percent a year later. Even though there was no change in their participation rate, divorced mothers (regardless of their youngest child's age) remained considerably more likely than mothers in any other marital status category to be in the labor force. About 78 percent of all divorced mothers were working or looking for work in March 1981, compared with around 60 percent of widowed, separated, or never-married mothers and 56 percent of married mothers. Even when they were childless, divorced women were more apt to be in the labor force than other women with no children under age 18.

Single, divorced, and separated persons. Like wives, single persons also accounted for 25 percent of the labor force growth over the year ending with March 1981. The number of single men in the labor force reached 15.8 million while that of single women grew to 11.6 million. These increases were largely because of a rise in the number of persons in their early 20's and the continuing tendency among them to delay marriage. The labor force participation rates of single men (71 percent) and of women (62 percent) remained relatively stable.

As was the case for singles, the number of divorced and separated persons in the labor force rose, primarily because the divorce rate remained high. The labor force participation rates of separated and divorced men were about the same as for husbands (80 percent) while the rates for divorced (75 percent) and separated (61 percent) women continued to be higher than for wives.

In contrast to the other marital groups, the number of husbands who were working or looking for jobs remained steady over the year ending in March 1981. The participation rate of husbands continued its long-term downward drift.

Race and Hispanic origin. Although white wives are still less likely to be in the labor force than black ones, their participation rate has been rising faster in recent years, narrowing the difference between the two groups. By March 1981, more than 50 percent of white wives and nearly 60 percent of black wives were in the work force. Ten years earlier, the proportions were about 40 and 53 percent. In contrast, the participation rate, for white husbands and black husbands were nearly identical; both rates have declined by roughly 6 percentage points since March 1971.

Hispanic men were more apt than whites or blacks to be in the labor force regardless of their marital category. This is partly because Hispanic men are, on average, younger; in March 1981, their median age (for those 16 years and over) was 32.1 years, compared with 34 years for blacks and 38 years for whites. In contrast to the men, Hispanic women traditionally have had lower participation rates than whites or blacks.[4] (See table 3.)

Table 2. Labor force status of women 16 years and over, by marital status and presence and age of youngest child, March 1980 and March 1981

[Numbers in thousands]

Marital status and presence and age of children	Labor force			Labor force participation rate (in percent)		
	March 1980		March 1981	March 1980		March 1981
	Original	Revised		Original	Revised	
Women, 16 years and over	43,963	44,934	46,414	51.1	51.1	52.0
No children under 18	26,470	27,144	27,992	48.0	48.1	48.7
With children under 18	17,493	17,790	18,422	56.6	56.6	58.1
Children 6 to 17, none younger	11,168	11,252	11,490	64.4	64.3	65.5
Children under 6 years	6,325	6,538	6,933	46.6	46.8	48.9
Married, husband present	24,466	24,900	25,460	50.2	50.1	51.0
No children under 18	11,019	11,246	11,426	46.1	46.0	46.3
With children under 18	13,447	13,654	14,035	54.2	54.1	55.7
Children 6 to 17, none younger	8,381	8,428	8,432	61.8	61.7	62.5
Children under 6 years	5,067	5,227	5,603	45.0	45.1	47.8

NOTE: Estimates of the civilian noninstitutional population have been recalculated using updated weights based on the 1980 Census of the Population; therefore, the 1980 revised data differ from 1980 data previously published.

Children are defined as "own" children. Included are never-married daughters or sons, stepchildren, and adopted children. Excluded are other related children such as grandchildren, nieces, nephews, and cousins and unrelated children.

Because of rounding, sums of individual items may not equal totals.

Table 3. Labor force participation rates by marital status, sex, race, and Hispanic origin, March 1980 revised and March 1981

[In percent]

Sex and marital status	White		Black		Hispanic	
	Revised 1980	1981	Revised 1980	1981	Revised 1980	1981
Men						
Total	77.6	77.4	68.0	68.8	80.6	80.6
Never married	72.6	72.7	60.4	60.5	70.0	71.6
Married, wife present	81.1	80.6	78.1	78.8	87.5	86.3
Married, wife absent	83.6	82.3	67.4	71.9	85.3	83.7
Divorced	80.7	82.4	69.9	72.8	78.3	84.5
Widowed	27.3	27.3	31.6	29.6	([1])	([1])
Women						
Total	50.9	51.8	52.1	53.2	48.0	47.5
Never married	64.2	65.0	49.4	50.3	53.9	51.4
Married, husband present	49.3	50.3	59.0	59.5	46.1	47.0
Married, husband absent	60.4	61.8	58.0	59.9	45.3	39.9
Divorced	75.6	76.0	68.8	68.8	64.7	65.8
Widowed	22.3	21.7	24.3	26.6	26.3	22.3

[1] Percent not shown where base is less than 75,000.

NOTE: Estimates of the civilian noninstitutional population have been recalculated using updated weights based on the 1980 Census of the Population; therefore, the 1980 revised data differ from 1980 data previously published.

Earners, income, and poverty

During the past decade, the dramatic increase in the proportion of working wives has led to substantial gains in the number of married-couple families where both spouses were earners during the same year. In 1980, there were approximately 25.6 million such dual-earner families, 25 percent more than in 1970.[5] Over the same period, the traditional-earner family (married-couple families where the husband, but not the wife, was an earner) declined in importance—falling from 44 percent of all married couples in 1970 to less than 31 percent in 1980.[6]

However, despite the ongoing rise in the number of wives in the labor force, there was no change in either the number or proportion of dual-earner families from 1979 to 1980. Several factors interacted to produce this result. One was the sluggish economic climate that prevailed during 1980 which led to greater levels of unemployment than in 1979. Another was the continuing high level of divorces and the consequent breakup of many married-couple families. Also, the number of married couples without earners continued its long-term climb. From 1970 to 1980, the number of married persons 65 years and over rose by about a third, and the number of families with no earners reached 5.9 million. (See table 4.)

Income. Overall, median income in 1980 was $23,300 for married-couple families, compared with $10,230 for families maintained by women and $17,740 for those maintained by men (no spouse present). A major reason for the differences is that almost 60 percent of all married-couple families contained at least two earners, compared with 28 percent of the families maintained by women and 42 percent of those maintained by men. (This is not the entire explanation; even when there were two earners or more, families maintained by men or women had lower median annual incomes.)[7] Who the earners are—husband, wife, children, and so forth—is also an important determinant of family income. To illustrate, median income of married-couple families in 1980 was $20,500 where the husband was the only earner, but only $13,600 where the wife was the sole earner. For families with two earners or more, the median was more than $31,000 where the husband (but not the wife) was among the earners, but only $22,700 when the husband had no earned income.

Poverty. The presence of earners does not guarantee a family freedom from poverty. In 1980, about 6.4 million, or 10.5 percent, of the Nation's families had incomes below the poverty level.[8] These families were approximately equally divided between married couples (47 percent) and those maintained by women (49 percent), with relatively few maintained by men. (See table 5.)

The majority of married-couple families in poverty had income from the earnings of one member or more during 1980. In most of these families, the husband was an earner, but for an unusually large proportion—21 percent compared with 6 percent for families not in poverty—the earner was the wife or some other member, such as a son or daughter, whose wages were typi-

Table 4. Number of earners in families, relationship, and median family income in 1979 and 1980, by type of family, March 1980 and March 1981

Number of earners, relationship, and type of family	Number (in thousands)			Median family income		
	March 1980		March 1981	1979		1980
	Original	Revised		Original	Revised	
Married-couple families	48,199	49,132	49,316	$21,621	$21,545	$23,263
No earners	5,420	5,559	5,903	8,833	8,855	10,187
One earner	13,598	13,912	13,900	18,062	18,073	19,368
Husband only	11,667	11,934	11,621	18,874	18,850	20,472
Wife only	1,463	1,499	1,707	12,504	12,527	13,612
Other relative only	468	480	573	17,061	17,072	16,148
Two earners or more	29,180	29,660	29,513	25,584	25,501	28,025
Husband and wife	25,148	25,595	25,557	25,263	25,167	27,745
Husband and others, not wife	3,448	3,476	3,380	29,146	29,121	31,031
Husband non-earner	585	591	576	20,343	20,361	22,684
Maintained by women[1]	8,834	9,009	9,416	9,773	9,719	10,233
No earners	2,041	2,084	2,216	4,267	4,245	4,494
One earner	4,290	4,391	4,612	9,567	9,513	10,350
Two earners or more	2,503	2,534	2,589	16,973	16,937	18,673
Maintained by men[1]	1,742	1,769	1,969	16,600	16,533	17,743
No earners	219	225	244	7,217	7,241	7,790
One earner	778	786	891	14,388	14,347	15,577
Two earners or more	745	756	835	23,040	22,936	23,785

[1] Divorced, separated, widowed, or never-married persons.

NOTE: Estimates of the civilian noninstitutional population have been recalculated using updated weights based on the 1980 Census of the Population; therefore, the 1980 revised data differ from 1980 data previously published.

Because of rounding, sums of individual items may not equal totals.

Table 5. Families in poverty in 1980 by family type and number of earners, March 1981

Type of family, number and relationship of earners	Number in poverty (in thousands)	Percent distribution	As percent of all families
Total families	6,402	—	10.5
Married-couple families	3,036	100.0	6.2
No earners	996	32.8	16.9
One earner	1,294	42.6	9.3
Husband	945	31.1	8.1
Wife	237	7.8	13.9
Other member	113	3.7	19.7
Two earners or more	745	24.5	2.6
Husband and wife	540	17.8	2.1
Husband and other(s), not wife	137	4.5	4.1
Husband nonearner	68	2.2	11.8
Families maintained by women[1]	3,142	100.0	33.4
No earners	1,617	51.5	73.0
One earner	1,267	40.3	27.5
Householder	1,034	32.9	28.6
Other	233	7.4	23.5
Two earners or more	258	8.2	10.0
Families maintained by men[1]	224	100.0	11.4
No earners	76	33.9	31.1
One earner	115	51.3	12.9
Two earners or more	32	14.3	3.8

[1] Includes only divorced, separated, widowed, or never-married persons.

NOTE: Because of rounding, sums of individual items may not equal totals.

cally lower than those of the husband.

A third of all families maintained by women had incomes below the poverty level in 1980, with children in more than four-fifths of them. Less than half of these families had earnings and only 8 percent contained more than one earner.

As expected, large families face a greater likelihood of poverty than small ones with the same number of earners. For instance, among one-earner families in 1980, about 10 percent with only two members were in poverty, compared with 20 percent of five-member families. The proportions in poverty were less for families with more than one earner.

THIS REPORT HAS PRESENTED some recent data on the marital-family characteristics of workers. However, the situation may change under the pressure of demographic and other trends that are already underway. For example, recent increases in the birth rate indicate that the number of dual-earner families with young children will continue to increase. Thus, the need for adequate child care in the working parents' absence will probably expand rather than diminish. In addition, if marital breakups—currently at record levels—rise, the demand for child care will grow even further as the number of one-parent families increases. ☐

FOOTNOTES

[1] Unless otherwise indicated, data are based on tabulations from the March 1981 Current Population Survey (CPS), conducted for the Bureau of Labor Statistics by the Bureau of the Census. The data have been inflated using population weights based on results from the 1980 Census of the Population. The March 1980 data discussed in this report also have been revised to bring them in line with the new population weights and to make them comparable with the March 1981 data. Previously published 1980 data (as they appear in Beverly L. Johnson and Elizabeth Waldman, "Marital and family patterns," *Monthly Labor Review*, October 1981, pp. 36–38) reflected population weights projected forward from the 1970 Census of the Population.

As shown in table 1, the number of married women in the labor force in March 1980 was revised upward by 434,000. Despite this, and similarly significant changes in other data for 1980, the various relationships and percentages based on new estimates are nearly the same as those based on previously published estimates.

For a more complete description of changes in labor force data stemming from the use of 1980 census population weights in the CPS, see Kenneth D. Buckley, Jennifer Marks, and Ronald J. Statt, "Revisions in the Current Population Survey Beginning in January 1982," *Employment and Earnings*, February 1982, pp. 7–15.

Estimates based on a sample, such as those shown in the tables, may vary considerably from results obtained by a complete count in those cases where the numbers are small. Therefore, differences based on them may not be significant. For more detail on the interpretation of such differences, see *Marital and Family Characteristics of Workers, March 1979*, Special Labor Force Report 237 (Bureau of Labor Statistics, 1981).

[2] Final Natality Statistics, National Center for Health Statistics, Division of Vital Statistics, Natality Statistics. Also see Allyson Sherman Grossman, "More than half of all children have working mothers," *Monthly Labor Review*, February 1982, pp. 41–43, for information on trends in numbers of children whose mothers work.

[3] See Howard Hayghe, "Families and the rise of working wives—an overview," *Monthly Labor Review*, May 1976, pp. 12–19; Janet L. Norwood and Elizabeth Waldman, *Women in the Labor Force: Some New Data Series*, U.S. Department of Labor, Report 575; and George Masnich and Mary Jo Bane, *The Nation's Families, 1960–1990* (Cambridge, Mass., Joint Center for Urban Studies of the Massachusetts Institute of Technology and Harvard University, 1980), pp. 52–85.

[4] For a discussion of some of the factors underlying the labor force patterns of Hispanic women, see Morris J. Newman, "A profile of Hispanics in the U.S. work force," *Monthly Labor Review*, December 1978, pp. 3–14.

[5] Only about two-fifths of the gain in the number of dual-earner families was because of the increase in the number of married-couple families.

[6] See Howard Hayghe, "Husbands and wives as earners: an analysis of family data," *Monthly Labor Review*, February 1981, pp. 46–53.

[7] A forthcoming *Monthly Labor Review* article will focus on women who maintain families.

[8] The average poverty threshold for a nonfarm family of four was $8,414 in 1980. The level varied depending on family size, sex and age of householders, family composition, and farm-nonfarm residence. For further details, see *Current Population Reports*, Series P–60, No. 124.

Major Agreements Expiring Next Month

This list of collective bargaining agreements expiring in June is based on contracts on file in the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more.

Employer and location	Industry	Union[1]	Number of workers
AGRIPAC, Inc. (Oregon)	Food products	Teamsters (Ind.)	3,000
Air Conditioning Contractors of Arizona	Construction	Sheet Metal Workers	1,200
Allied Chemical Corp., Industrial Chemical Division (New York)	Chemicals	Steelworkers	1,200
Almacs, Inc. (Rhode Island, Massachusetts, and Connecticut)	Retail trade	Food and Commercial Workers	2,300
American Motors Corp., AM General Corp. (Indiana)	Transportation equipment	Auto Workers (Ind.)	1,500
Associated Building Contractors of Northwestern Ohio, Inc., 2 agreements	Construction	Laborers; Carpenters	3,000
Association of Contracting Plumbers of the City of New York	Construction	Plumbers	3,550
Associated Garment Industry of St. Louis (Interstate)	Apparel	Garment Workers	3,000
Associated Manufacturers Tubular Piping & Trimming, Inc. (New York)	Apparel	Ladies Garment Workers	1,200
Automobile Dealers Industrial Relations Association of New York	Retail trade	Auto Workers (Ind.)	1,000
Associated General Contractors, Nevada Chapter and 2 others	Construction	Carpenters	2,100
Bath Iron Works Corp. (Maine)	Transportation equipment	Marine and Shipbuilding Workers	4,500
Belt Association, Inc. (New York, N.Y.)	Apparel	Ladies Garment Workers	3,800
California Processors, Inc.	Food products	Teamsters (Ind.)	55,000
Chicago Area Grocery Stores (Illinois)[2]	Retail trade	Food and Commercial Workers	7,000
Chicago Pneumatic Tool Co. (Utica, N.Y.)	Machinery	Machinists	1,150
Copeland Corp. (Ohio)	Machinery	Electrical Workers (IUE)	2,800
Detroit Mason Contractors Association (Michigan)	Construction	Bricklayers	3,300
East Ohio Gas Co.	Utilities	Service Employees	2,050
Eastern New York Construction Employers, Inc., 3 agreements	Construction	Operating Engineers; Laborers; Bricklayers	
Executive Council of the California Conference of Mason Contractors Association, Inc. (California)	Construction	Laborers	4,150
Freightliner Corp. (Portland, Oreg.)	Transportation equipment	Machinists	6,000
General Electric Co. (Auburn, N.Y.)	Electrical products	Machinists	1,700
General Contractors Association of New York City	Construction	Operating Engineers	1,000
General Dynamics Corp., Pomona Division (California)	Fabricated metal products	Machinists	4,300
General Electric Co., 3 agreements (Interstate)	Electrical products	Machinists; Sheet Metal Workers; Electrical Workers (UE) (Ind.)	1,650 19,500
General Telephone Co. of Kentucky	Communication	Communication Workers	1,300
Great Atlantic & Pacific Tea Co., Inc. (Connecticut and Massachusetts)	Retail trade	Food and Commercial Workers	2,000
Greater Milwaukee Hotel-Motel Association, 2 agreements (Wisconsin)	Hotels	Hotel and Restaurant Employees	2,200
Grocery Agreement, Quad-Cities (Iowa and Illinois)[2]	Retail trade	Food and Commercial Workers	2,000
Hammermill Paper Co., Erie Plant (Pennsylvania)	Paper	Paperworkers	1,300
Independent Shops, Cloth Hats & Caps (New York, N.Y.)[2]	Apparel	Hatters	1,300
Kansas City Power & Light Co., Production Department (Missouri)[2]	Utilities	Electrical Workers (IBEW)	1,000
Kelly-Springfield Tire Co. (Cumberland, Md.)	Rubber	Rubber Workers	1,800
Keystone Building Contractors Association and 1 other (Pennsylvania)	Construction	Laborers	1,400
Lathing & Metal Furring Contractors Association of California, Inc.	Construction	Lathers	1,250
Long Island Lighting Co., 2 agreements (New York)	Utilities	Electrical Workers (IBEW)	4,000
Major Food Chains (Illinois)	Retail trade	Food and Commercial Workers	1,450
Manufacturing Woodworkers Association of Greater New York, Inc.	Furniture	Carpenters	1,200
Master Cement & All Dry Bulk Commodities (Interstate)[2]	Trucking	Teamsters (Ind.)	5,000
National Hand Embroidery & Novelty Manufacturers Association, Inc. (New York)	Apparel	Ladies Garment Workers	4,650
New England Sportswear Manufacturers' Association (Massachusetts)	Apparel	Ladies Garment Workers	2,500
Northwest Airlines, Clerical Employees[3]	Air transportation	Railway Clerks	3,200
Ohio Edison Co. (Akron, Ohio)	Utilities	Utility Workers	2,000

See footnotes at end of table.

Continued—Major Agreements Expiring Next Month

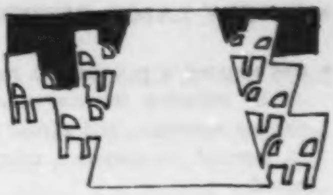
Employer and location	Industry	Union[1]	Number of workers
Pleaters, Stitchers & Embroiderers Association, Inc. (New York)	Apparel	Ladies Garment Workers	2,200
Plumbing Contractors of Metropolitan St. Louis	Construction	Plumbers	1,200
Sheet Metal and Air Conditioning Contractors National Association, Los Angeles Chapter	Construction	Sheet Metal Workers	2,050
Star Market Co. Division, Jewel Companies, Inc. (Rhode Island and Massachusetts)	Retail trade	Food and Commercial Workers	1,200
Strayton Canning Co. Cooperative (Oregon)	Food products	Teamsters (Ind.)	1,800
Stockham Valves & Fittings, Inc. (Birmingham, Ala.)	Primary metals	Steelworkers	1,850
Trico Products Corp. (Buffalo, N.Y.)	Transportation equipment	Auto Workers (Ind.)	2,500
Union Painting Contractors Association and 1 other (Interstate)	Construction	Painters	1,000
Varsity Transit, Inc., New York Division	Transit	Amalgamated Transit	1,000
Watsonville Employers Frozen Food Employers Association (California)	Food products	Teamsters (Ind.)	4,000
	Government	**Union or employee association**	
Arizona: Municipal Employees	Multidepartments	American Federation of State, County and Municipal Employees	1,800
California:			
Orange County General Unit	Multidepartments	Orange County Employees Association (Ind.)	10,000
San Francisco Bay Area Rapid Transit District, 2 agreements	Transportation	Amalgamated Transit	3,200
Connecticut: Maintenance and Service Unit	Public works	Connecticut Employees Union "Independent", Inc.	8,000
Maryland:			
Anne Arundel County Board of Education, Administrators	Education	National Education Association (Ind.)	4,000
Baltimore Board of School Commissioners, Professional Employees	Education	American Federation of State, County and Municipal Employees	8,500
Michigan: Detroit Board of Education, Teachers	Education	American Federation of Teachers	11,000
New Jersey: Newark Board of Education, Teachers	Education	American Federation of Teachers	4,700
New York:			
New York City Board of Education, Lunchroom Employees	Education	American Federation of State, County and Municipal Employees	6,900
New York City Board of Education, School Aides	Education	American Federation of State, County and Municipal Employees	8,900
New York City Sanitation Department	Sanitation services	Teamsters (Ind.)	7,750
New York State Albany University, Professional Employees	Education	United University Professors, Inc. (Ind.)	15,000
Pennsylvania: Philadelphia Police Department	Law enforcement	Fraternal Order of Police	7,500

[1] Affiliated with AFL-CIO except where noted as independent (Ind.)

[2] Industry area (group of companies signing same contract).

[3] Information is from newspaper reports.

Developments in Industrial Relations



GM-UAW agreement

General Motors Corp. and the Auto Workers agreed to a 30-month accord that paralleled the terms of the union's February agreement with Ford Motor Co. (See *Monthly Labor Review*, April 1982, p. 62.) GM and UAW officials said they were optimistic that the new contract will help alleviate the severe sales and employment downturn that has afflicted the domestic automobile industry for several years. The day after the settlement, domestic car makers reported that they built 325,000 units in February, a decline of more than 32 percent from February of 1981, and the lowest total for that month since 1948.

UAW President Douglas A. Fraser emphasized that the job security aspects of the agreement would "stop the hemorraging of GM workers' jobs." Currently, 320,000 UAW members are on the job at GM and 140,000 are on layoff. Alfred S. Warren Jr., the company's vice president for industrial relations, called the accord "historic" because it recognizes the unexpected changes taking place in world competition.

The GM contract was effective immediately, superseding the current contract which would have expired in September. The new contract did not provide for any specified wage increases. The cost-of-living pay adjustment provision differed slightly at the two companies, but the goal was the same—to equalize labor cost increases. At GM, the June and September 1982 cost-of-living adjustments will each be deferred 18 months, as will 10 cents of any adjustment that occurs in December 1982. The 10-cent December deferral was intended to offset the 10-cent cost-of-living adjustment effective in March 1982 under provisions of the 1979 contract. The Ford settlement provided for 18 month deferrals of the 10 cents adjustment normally effective in March 1982, as well as the June and September 1982 quarterly adjustments.

There also were other differences between the GM and Ford contracts:

- The GM contract called for the company to reopen four of the six plants it had closed after the parties had temporarily broken off negotiations in January. The four plants employed about 5,000 UAW members. In addition, GM agreed to aid some of the 5,000 workers affected by the closing of the other two plants, located in California, by permitting laid-off employees with 10 years of service to participate in the Guaranteed Income Stream program. GM also agreed to reopen one other plant and to transfer 1,500 employees affected by the closing of a stamping plant in Cleveland. At Ford, eligibility for the Guaranteed Income Stream was limited to laid off employees with 15 years of service. The Ford accord did not provide for the reopening of any plants. However, Ford announced the reopening of a valve plant, a result of the contract provision limiting the purchase of parts from other companies.
- At GM, a legal services plan was established, financed by company funding of 3 cents an hour per worker. Legal representation will be provided by the plan's staff attorneys. Ford workers did not win a legal services plan (but the parties will study such plans), opting instead for an increase in the company's financing of Supplemental Unemployment Benefits.
- The new profit-sharing plan at GM calls for employees to receive 10 percent of that portion of the company's U.S. pretax profit in excess of the sum of 10 percent of net worth and 5 percent of other assets. Any resulting distribution to GM workers will be reduced by 0.1 percent of the value of the "other asset" to help defray the cost of extending the Guaranteed Income Stream to cover laid-off workers with 10 years of service. The union admitted that this formula was not as liberal as the Ford formula, but asserted that GM workers still would fare better because of GM's better operating results. According to union officials, over the preceding 6 years, GM workers would each have received $2,231 under their new formula, and Ford workers would have received $826 under their formula.
- At GM, the pilot "lifetime job guarantee" program will be tested at four plants, compared with two plants at Ford. Percentagewise, these numbers are equivalent because GM hase more plants than Ford.

"Developments in Industrial Relations" is prepared by George Ruben and other members of the staff of the Division of Developments in Labor-Management Relations, Bureau of Labor Statistics, and is largely based on information from secondary sources.

- GM adopted a program to reduce unwarranted time off by reducing the nonwage benefits available for chronic absentees, and agreed to establish and finance an internal occupational safety and health advisory board.

The ratification vote tally, announced by the UAW in mid-April was 114,510 to 105,297 in favor of the agreement.

The International Union of Electrical Workers also negotiated similar terms for the 22,000 workers it represents at GM plants.

Elsewhere, at General Motors, the company confirmed that it was laying off some salaried employees with low performance ratings and reducing the severance pay and other monetary benefits of the others. A GM official said that the actions will involve "a very limited number" of the company's 137,000 salaried employees in the United States and Canada.

Wage-and-benefit concessions

Workers at Gulf and Western automobile parts plants in Mancelona and East Jordan, Mich., voted to accept a $1.54-an-hour pay cut to avert closing of some plants. The company said it needed the pay cut and a 2-year freeze on future wage-and-benefit improvements to compete effectively for production contracts. At the time of the settlement, layoffs had reduced the combined work force in these plants to 200, from 600.

Members of Allied Industrial Workers Local 78 in Kent, Ohio, agreed to labor concessions to avert the closing of a Russell Burdsall and Ward Corp. plant. The 260 workers at the auto parts plant accepted a $2.40-an-hour reduction in their cost-of-living allowance, reductions in paid holidays and vacations, and establishment of an incentive pay plan. Union officials said the concessions resulted from pressure by the major automobile manufacturers for lower prices from their suppliers.

In Louisville, Ky., members of four unions at Standard Gravure Co. agreed to a 5-year moratorium on wage increases and suspension of certain restrictive work practices. In exchange, the company agreed to invest $13.5 million in new printing equipment to improve its competitive ability, and to institute a profit-sharing plan.

Plans to return the bankrupt Milwaukee Railroad to profitability by 1985 moved forward, as a Federal district court approved a 7-percent wage reduction that will apply to 7,000 persons, including management and members of about 13 unions. In addition to negotiating a paycut for their members, the unions also agreed to reductions in train crew sizes which may result in the layoff of more than 500 workers within 6 months. The paycut, scheduled to extend to the end of 1984, was expected to save the railroad $44 million and the reduction in crew size was expected to save $56 million over a 5-year period. In his recovery plan, bankruptcy trustee Richard Oglvie projected that in 1985, the railroad would be a 2,900 mile system with about 6,000 employees. In 1977, when the bankruptcy proceedings began, the railroad had 10,000 miles of track and 11,000 employees.

Volkswagen of America moved to reduce labor costs by limiting payment of its cost-of-living allowance for salaried employees to straight time hours worked. Previously, the 4,000 workers had also received the allowance for overtime hours and for vacations, holidays, and sick days. Earlier, the company had postponed plans to build a second plant in the United States. The 4,600 UAW-represented production workers at the Volkswagen plant in Westmoreland County, Pa., negotiated a 16-month agreement in late 1981 that provided for an immediate 50-cent-an-hour wage increase, for a 10-cent-an-hour increase in June 1982, and for a 1982 specified wage increase that matched the specified increase resulting from the GM-UAW negotiations. There were no indications whether Volkswagen was planning to ask for revisions in its agreement because of the labor cost concessions included in the 1982 GM settlement.

The 550 employees of the McCreary Tire & Rubber Co. of Indiana, Pa., were expected to attain 70 percent ownership of the plant within 7 years under an Employee Stock Ownership Plan announced in late 1981. The purchase will be financed by withholding scheduled pay increases. The 400 production employees, who are represented by the United Rubber Workers, will forgo 50 cent increases in both 1982 and 1983. Similarly, the 175 salaried employees, who are not represented by a union, will forgo 5 percent pay increases in both years. McCreary specializes in truck tires, but also makes tires for farm and construction equipment and racing cars.

In the Detroit area, members of Teamsters' Local 337 and the Kroger Co. and A&P supermarket chains agreed on a wage freeze that will extend 18 months beyond the scheduled March 31, 1984, expiration date of current agreements. Bargaining on wage-and-benefit concessions was continuing between various unions and Kroger and other chains in the area. The stores contended that labor cost relief was needed to enable them to compete effectively with nonunion chains, which they claimed had a $5-an-hour edge in labor costs.

At Acme-Cleveland Corp.'s plant in Cleveland, Ohio, workers agreed to eliminate ceilings on the output of pieceworkers. In return for the change—which a union official said would result in higher earnings for some of the employees—the maker of machine tools guaranteed the 647 remaining jobs until the September 1982 expiration of its contract with the Mechanics Educational Society. Company officials indicated that the termination of the piecework ceiling and the elimination of 500 jobs in the past 2 years had been necessitated by a "noncompetitive" labor cost structure.

In Jefferson, Wisc., employees of Borg Textiles Corp. agreed to a number of contract changes in an effort to keep the plant in operation. The changes include a 1-year extension of their contract (to May 1984); a $1.38-an-hour pay cut, (pay had ranged from $7.93 to $9.74 an hour); a 40-percent reduction in paid vacation days (the workers will receive the lost money after January 1, 1983); postponement of payments to workers for gains in productivity; and postponement of a 6-percent wage increase and a cost-of-living adjustment of up to 26 cents an hour that had been scheduled for May 1982. The company and the Ladies Garment Workers will meet in January 1983 to discuss possible restoration of the wage-and-benefit cuts. Union official Donald Kret attributed the plants' problems to a decline in demand for artificial fur and paint brush roller fabric. He said that other apparel manufacturers in the region were pressing for labor cost cuts. At the time of settlement, two-thirds of the firm's 140 employees were on layoff.

The round of bargaining at major meat processing companies closed when employees at several Oscar Mayer & Co. plants accepted a wage freeze extending to August 31, 1985. Actually, the employees accepted a pay cut because they gave up the 30-cent-an-hour cost-of-living adjustment they received in January under the superseded contract, which had been scheduled to expire in August. Workers at the other meat processing companies (Armour, Wilson, Swift, and Hormel) did not get a pay cut because their wage freezes were negotiated in December 1981. (See *Monthly Labor Review*, February 1982, p. 48.) Other contract terms at Oscar Mayer were similar to those at the other companies.

Plant closings

The Potter and Brunfield Division of AMF Inc. closed its electromagnetic relay switch plant in San Juan Capistrano, Calif., to "consolidate excess capacity" in six other AMF plants. About 300 workers were involved. Some of the employees charged that the closing resulted from a company decision to shift some production to its plant in Mexico, which has lower labor costs. The plant manager acknowledged that this may have been a factor in the decision, but pointed out that the California plant was the smallest in the chain and the most distant from corporate headquarters in Princeton, Ind. According to the Bank of Mexico, U.S. companies now operate 225 plants across the border, employing 133,000 workers who earn about one-fourth as much as their American counterparts.

Scottdale Mills Ltd., which survived the Great Depression without reducing production or employment, announced that it was closing. The Decatur, Ga., company attributed its demise to foreign competition. About 500 employees were affected. Elsewhere in the textile industry, J. P. Stevens & Co. began phasing out its denim plant in Rock Hill, S.C. About 540 employees were affected.

The Singer Co. announced that it was closing its industrial sewing machine plant in Elizabeth, N.J., because worldwide recessions and high interest rates had accelerated a slump in demand for its machines. The decision affected 560 employees. Most of Singer's machines are produced in Brazil and Japan.

The Allis-Chalmers Corp. announced plans to close its foundry in West Allis, Wisc., after members of Auto Workers Local 248 rejected a request for an $8-an-hour cut in wages and benefits. Officials of the foundry, which produces castings for farm machinery, said the cut was necessary because its workers averaged $23 an hour in wages and benefits, nearly twice as much as some competitors. However, union officials attributed the foundry's problems to the company's failure to modernize the facility.

Hospital workers get new contracts

In Northern California, Service Employees Local 250 negotiated a 2-year contract for employees of 18 hospitals and medical centers of the Kaiser Permanente Medical Care Program. According to the union, the accord makes the 7,500 workers the Nation's highest paid service employees in hospitals and clinics.

Provisions included an 11-percent pay raise on November 1, 1981, a 9-percent raise on October 31, 1983, and upgrading of several job classifications. The highest paid employees in the bargaining unit are pharmacists, who will receive $17.30 an hour after the 1983 pay increase.

What may have been the longest nurses strike in American history ended when registered nurses employed by Ashtabula (Ohio) General Hospital ratified a contract calling for a 9-percent salary increase. They also received an 11.9-percent increase that the hospital put into effect in May 1981. The strike lasted for more than 18 months and involved 170 nurses when it began in July 1980. In subsequent months, 50 nurses returned to work and 20 quit their jobs. The nurses are represented by the American Nurses Association. ☐

Book Reviews

The unspeakable

Fellow Workers and Friends: IWW Free-Speech Fights as Told by Participants. Edited by Philip Foner. Westport, Conn., Greenwood Press, 1981. 242 pp. $29.95.

There is a plethora of current interest in the much celebrated labor union of the early 20th century, the Industrial Workers of the World (IWW). Popularly called the "Wobblies," they have an unparalleled place in labor history and are a fascinating subject for motion pictures, books, and museum exhibits. One example is the movie, "Reds," a chronicle of the life of IWW member John Reed. The Botto House, headquarters for the Wobblies during the famous Paterson (N.J.) Silk Workers Strike of 1913, has been designated a historic landmark. Even the Smithsonian Institution, in a recent labor history exhibit, displayed some Wobbly memorabilia. *Fellow Workers and Friends* keeps faith with such current interest.

This book is an anthology of the so-called "Free-Speech Fights," occurring between 1909 and 1916, and pitting IWW organizers against local municipal authorities. Ten such "fights" ensued, most of them in the western half of the United States: Missoula, Mont.; Spokane and Everett, Wash.; Fresno and San Diego, Calif.; Aberdeen, S. Dak.; Minot, N. Dak.; Denver, Colo.; and Kansas City, Mo. The Wobblies attempted to organize the mass of itinerant, and often illiterate, migratory workers who labored in the mining camps, timberlands, and agricultural valleys of the West. Fearful of the radical labor union, established interests, especially Chambers of Commerce, tried to restrict IWW activities by prohibiting open-air speeches in public areas.

The "gag rules" against public speaking hit the Wobblies in the jugular. If prevented from spreading their creed, the union would have little chance of recruiting members. To retaliate, they called transient Wobblies from the four corners of the Nation to descend on the site of an impending free-speech battle. A telegram sent to all IWW offices from national Secretary-Treasurer Vincent St. John vividly illustrated their sincerity: "If you are footloose, make for Kansas City at once, . . . wire the local you are coming."

With a high concentration of sympathetic Wobblies in one area, the local union leadership implemented battle plans. They paraded, en masse, to a public area where a man or woman stood on a "soap box" and cried out, "Fellow Workers and Friends," to the gathering crowds. That brief oration usually resulted in the speaker's arrest. But another IWW member immediately ascended the podium and repeated the same four words. Soon, the jails were overflowing with the speakers, taxing the municipal resources of the locality to the breaking point, and forcing, in most cases, the rescission of anti-free speech laws.

The personal stories of the free-speech participants are a fine mixture of pathos and humor. For example, one IWW member recalled the woeful tale of Michael Hoey, a 65-year-old member of the union, who was arrested and jailed by San Diego police for speaking in public. The jailers beat him mercilessly, kicked him repeatedly in the groin, and left him in a semiconscious state. He died 40 days later, allegedly from the injuries received in jail.

Even more heinous violations of civil liberties were recorded and experienced by union member Agnes Thecla Fair. After her arrest in Spokane, Wash., the civil authorities attempted to remove her clothing while she was in custody, threatening her with rape. The young Wobbly described her plight further, stating:

> I was hardly over the first (episode) when they brought in a man disguised as a woman and put him in a cot next to me. I thought it was a drunken woman until the officers went out. Then I felt a large hand creeping over me. It's too horrible (to continue) . . . !

Yet, the free-speech fights had lighter moments. Elizabeth Gurley Flynn, the notorious "Rebel Girl," told of one comrade who found himself released from custody when the police officer escorting him to jail stumbled across two brawling drunkards and arrested them. The constable noticed the big, strapping Wobbly tagging along behind them and asked, "What are you doing here?" The free-speech fighter retorted, "What do you want me to do, go back there and make another speech?"

In addition to the personal vignettes, the book also contains entertaining chapter introductions, including a broad overview on the origins and development of the IWW. Few labor historians are better qualified to evaluate this aspect of the labor movement than Philip Foner. His expertise is widely recognized and his anecdotal style adds spice to an already lively topic. For example, he briefly explains that Elizabeth Gurley Flynn, one of the earliest feminists, had her family's support, and, in fact, was delivered by a woman doctor at birth. Foner also explains that the derivation of the term "Wobbly" originated from the inability of a Chinese waiter in California to say IWW. It is quite obvious that, for Foner, this book was a labor of love.

Foner is one of our most brilliant, yet controversial historians. Often criticized for letting his Marxist ideology distort the historical picture he paints, in this book, he apparently tempers his political inclinations. However, there is an overglorification of the radical Wobblies, and this is the one flaw in the monograph. Foner fails to show, as does Paul Bressenden—the dean of IWW scholars—in his monograph on the subject, that the seditious and unpatriotic language utilized by the Wobblies very often sent ripples of fear through even moderate members of local communities, let alone the labor baiters. But this book is for the students of the labor movement and they should, by now, be aware of Foner's proclivities.

On a positive reflection, Foner has once again championed the participation of blacks, women, immigrants, and other minorities in the labor movement. He vividly illustrates that the IWW targeted their energies toward organizing the largely unskilled work force of the Nation, the "Dagoes, Hunks, and Bohunks," often shunned by the rival American Federation of Labor. As Foner states in one chapter introduction, the Wobblies elevated the transient unskilled working class, giving them their own anthem in the song "Hallelujah, I'm a Bum."

Fellow Workers and Friends is an outstanding companion to similar anthologies such as Joyce Kornbluh's *Rebel Voices*, and Foner's *The Letters of Joe Hill*. It complements several narratives on the IWW including Patrick Renshaw's *The Wobblies* and, again, Foner's *The Industrial Workers of the World, 1905–1917.*

In light of recent political and social trends, this study is timely and important. The constitutional questions on what constitutes "free speech" and the first amendment are, even now, causing debate in Congress. *Fellow Workers and Friends* should interest both rightist and leftist sides of the U.S. political spectrum and should cause neither to see red.

—HENRY P. GUZDA
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More recent arrivals

Immigration: New Americans, Old Questions. Edited by Melinda Maidens. New York, Facts on File, 1981. 190 pp. $17.50.

Instead of the 450,000 legal immigrants and refugees anticipated by U.S. law, over 1 million legal immigrants, refugees, and illegal aliens entered the United States in 1981. Like his predecessors, President Reagan appointed a study group to examine immigration and refugee problems and suggest reforms that will enable America to reassert control over its borders.

The Select Commission on Immigration and Refugee Policy issued its final report in March 1981. A series of congressional hearings was held on immigration problems and reform proposals in 1981 and 1982. Three comprehensive reform packages are now awaiting congressional action. President Reagan has proposed a limited amnesty for aliens now in the United States illegally, Federal sanctions on employers who knowingly hire illegal aliens, and a streamlining of Immigration and Naturalization Service procedures. Senator Walter D. Huddleston (D-Ky.) has proposed more sweeping enforcement measures designed to reduce the influx of aliens and a fixed cap on total legal immigration to the United States. Senator Alan K. Simpson (R-Wyo.) modified the Reagan administration proposals by deleting the temporary guestworker idea and its strengthening enforcement provisions. Public opinion and this spectrum of reform options promise to make 1982 a year of further debate and possible action on immigration reform.

This book is a collection of newspaper articles and editorials that helps explain why the immigration issue arouses so much debate and so little action. The articles, published between 1978 and 1981, discuss immigration, refugees, and policy. Many of the editorials are from lesser known newspapers, for example, *The Tulsa World*, *The Arkansas Democrat*, and *The Sacramento Bee.*

The theme running through most of the articles and editorials is the need to continue American compassion for the world's "huddled masses," but to temper our compassion in this age of limits. For example, most newspapers endorsed the initial Cuban offer of 1,000 political prisoners in the fall of 1978, arguing that American acceptance of these Cubans would demonstrate to the world the economic and moral failures of Cuban socialism. However, when Cubans began streaming across the Florida straits in small boats one and one-half years later, these same newspapers demanded that the government reassert control over who enters America. Most newspapers demanded a similar tough line when Cubans, impatient to be resettled, rioted at Fort Chaffee, Ark.

This book does not contain interpretive articles that help explain the evolution or future direction of U.S. immigration policies. It is rather a chronicle of America's response to immigration issues that were salient between 1978 and 1980. It is a valuable mirror of our diversity in a time when we seek consensus.

—PHILIP MARTIN
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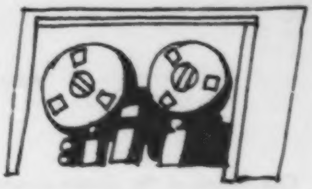
Current Labor Statistics



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NOTE

Because of the deletion of former tables 12, 13, and 20, the succeeding tables have been renumbered.

NOTES ON CURRENT LABOR STATISTICS

This section of the *Review* presents the principal statistical series collected and calculated by the Bureau of Labor Statistics. A brief introduction to each group of tables provides definitions, notes on the data, sources, and other material usually found in footnotes.

Readers who need additional information are invited to consult the BLS regional offices listed on the inside front cover of this issue of the *Review*. Some general notes applicable to several series are given below.

Seasonal adjustment. Certain monthly and quarterly data are adjusted to eliminate the effect of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might otherwise mask short-term movements of the statistical series. Tables containing these data are identified as "seasonally adjusted." Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years.

Seasonally adjusted labor force data in tables 2–7 were revised in the March 1982 issue of the *Review* to reflect experience through 1981. The original estimates also were revised to 1970 to reflect 1980 census population controls.

Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are being seasonally adjusted with a new procedure called X-11/ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada Catalogue No. 12-564E, February 1980). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. Revisions of historical data continue to be made only at the end of each calendar year.

Annual revision of the seasonally adjusted payroll data in tables 11, 14, and 16 begins with the August 1980 issue using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 30 and 31 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

Adjustments for price changes. Some data are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of $3 and a current price index number of 150, where 1967 = 100, the hourly rate expressed in 1967 dollars is $2 ($3/150 × 100 = $2). The resulting values are described as "real," "constant," or "1967" dollars.

Availability of information. Data that supplement the tables in this section are published by the Bureau of Labor Statistics in a variety of sources. Press releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule given below. The *BLS Handbook of Labor Statistics*, Bulletin 2070, provides more detailed data and greater historical coverage for most of the statistical series presented in the *Monthly Labor Review*. More information from the household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau. Historically, comparable information from the establishment survey is published in two comprehensive data books—*Employment and Earnings, United States* and *Employment and Earnings, States and Areas, and their annual supplements*. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

Symbols

p = preliminary. To improve the timeliness of some series, preliminary figures are issued based on representative but incomplete returns.
r = revised. Generally, this revision reflects the availability of later data but may also reflect other adjustments.
n.e.c. = not elsewhere classified.

Schedule of release dates for major BLS statistical series

Series	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	May 7	April	June 4	May	1–11
Producer Price Index	May 14	April	June 11	May	23–27
Consumer Price Index	May 21	April	June 22	May	19–22
Real earnings	May 21	April	June 22	May	12–17
Productivity and costs:					
Nonfinancial corporations	May 26	1st quarter	....	....	28–31

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 60,000 households beginning in May 1981, selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

Definitions

Employed persons are (1) those who worked for pay any time during the week which includes the 12th day of the month or who worked unpaid for 15 hours or more in a family-operated enterprise and (2) those who were temporarily absent from their regular jobs because of illness, vacation, industrial dispute, or similar reasons. A person working at more than one job is counted only in the job at which he or she worked the greatest number of hours.

Unemployed persons are those who did not work during the survey week, but were available for work except for temporary illness and had looked for jobs within the preceding 4 weeks. Persons who did not look for work because they were on layoff or waiting to start new jobs within the next 30 days are also counted among the unemployed. The **unemployment rate** represents the number unemployed as a percent of the civilian labor force.

The **civilian labor force** consists of all employed or unemployed persons in the civilian noninstitutional population; the **total labor force** includes military personnel. Persons **not in the labor force** are those not classified as employed or unemployed; this group includes persons retired, those engaged in their own housework, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job market factors, and those who are voluntarily idle. The **noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy.

Full-time workers are those employed at least 35 hours a week; **part-time workers** are those who work fewer hours. Workers on part-time schedules for economic reasons (such as slack work, terminating or starting a job during the week, material shortages, or inability to find full-time work) are among those counted as being on full-time status, under the assumption that they would be working full time if conditions permitted. The survey classifies unemployed persons in full-time or part-time status by their reported preferences for full-time or part-time work.

Notes on the data

From time to time, and especially after a decennial census, adjustments are made in the Current Population Survey figures to correct for estimating errors during the preceding years. These adjustments affect the comparability of historical data presented in table 1. A description of these adjustments and their effect on the various data series appear in the Explanatory Notes of *Employment and Earnings.*

Data in tables 2–7 are seasonally adjusted, based on the seasonal experience through December 1981.

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950–81

[Numbers in thousands]

Year	Total noninstitutional population	Total labor force		Civilian labor force						Not in labor force
		Number	Percent of population	Total	Employed			Unemployed		
					Total	Agriculture	Nonagricultural industries	Number	Percent of labor force	
1950	106,645	63,858	59.9	62,208	58,918	7,160	51,758	3,288	5.3	42,787
1955	112,732	68,072	60.4	65,023	62,170	6,450	55,722	2,852	4.4	44,660
1960	119,759	72,142	60.2	69,628	65,778	5,458	60,318	3,852	5.5	47,617
1964	127,224	75,830	59.6	73,091	69,305	4,523	64,782	3,786	5.2	51,394
1965	129,236	77,178	59.7	74,455	71,088	4,361	66,726	3,366	4.5	52,058
1966	131,180	78,893	60.1	75,770	72,895	3,979	68,915	2,875	3.8	52,288
1967	133,319	80,793	60.6	77,347	74,372	3,844	70,527	2,975	3.8	52,527
1968	135,562	82,272	60.7	78,737	75,920	3,817	72,103	2,817	3.6	53,291
1969	137,841	84,240	61.1	80,734	77,902	3,606	74,296	2,832	3.5	53,602
1970	140,272	85,959	61.3	82,771	78,678	3,463	75,215	4,093	4.9	54,315
1971	143,033	87,198	61.0	84,382	79,367	3,394	75,972	5,016	5.9	55,834
1972	146,574	89,484	61.1	87,034	82,153	3,484	78,669	4,882	5.6	57,091
1973	149,423	91,756	61.4	89,429	85,064	3,470	81,594	4,365	4.9	57,667
1974	152,349	94,179	61.8	91,949	86,794	3,515	83,279	5,156	5.6	58,171
1975	155,333	95,955	61.8	93,775	85,846	3,408	82,438	7,929	8.5	59,377
1976	158,294	98,302	62.1	96,158	88,752	3,331	85,421	7,406	7.7	59,991
1977	161,166	101,142	62.8	99,009	92,017	3,283	88,734	6,991	7.1	60,025
1978	164,027	104,368	63.6	102,251	96,048	3,387	92,661	6,202	6.1	59,659
1979	166,951	107,050	64.1	104,962	98,824	3,347	95,477	6,137	5.8	59,900
1980	169,848	109,042	64.2	106,940	99,303	3,364	95,938	7,637	7.1	60,806
1981	172,272	110,812	64.3	108,670	100,397	3,368	97,030	8,273	7.6	61,460

NOTE: Data for 1970–81 have been revised to reflect 1980 census population controls.

2. Employment status by sex, age, and race, seasonally adjusted

[Numbers in thousands]

Employment status	Annual average		1981										1982		
	1980	1981	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
TOTAL															
Total noninstitutional population[1]	169,848	172,272	171,581	171,770	171,956	172,172	172,385	172,559	172,758	172,967	173,156	173,330	173,494	173,657	173,842
Total labor force	109,042	110,812	110,492	110,906	111,420	110,565	110,827	110,978	110,689	111,170	111,430	111,348	111,038	111,333	111,521
Civilian noninstitutional population[1]	167,745	170,130	169,453	169,641	169,829	170,042	170,246	170,397	170,563	170,809	170,998	171,166	171,335	171,489	171,667
Civilian labor force	106,940	108,670	108,364	108,777	109,293	108,434	108,688	108,816	108,494	109,012	109,272	109,184	108,879	109,165	109,346
Employed	99,303	100,397	100,406	100,878	101,045	100,430	100,864	100,840	100,258	100,343	100,172	99,613	99,581	99,590	99,492
Agriculture	3,364	3,368	3,343	3,470	3,405	3,348	3,342	3,404	3,358	3,378	3,372	3,209	3,411	3,373	3,348
Nonagricultural industries	95,938	97,030	97,063	97,408	97,640	97,082	97,522	97,436	96,900	96,965	96,800	96,404	96,170	96,217	96,144
Unemployed	7,637	8,273	7,958	7,899	8,248	8,004	7,824	7,976	8,236	8,669	9,100	9,571	9,298	9,575	9,854
Unemployment rate	7.1	7.6	7.3	7.3	7.5	7.4	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0
Not in labor force	60,806	61,460	61,089	60,864	60,536	61,607	61,558	61,581	62,069	61,797	61,726	61,982	62,456	62,324	62,321
Men, 20 years and over															
Civilian noninstitutional population[1]	71,138	72,419	72,037	72,142	72,251	72,369	72,472	72,559	72,670	72,795	72,921	73,020	73,120	73,209	73,287
Civilian labor force	56,455	57,197	57,028	57,157	57,479	57,084	57,172	57,250	57,262	57,355	57,459	57,665	57,368	57,448	57,554
Employed	53,101	53,582	53,618	53,820	53,884	53,587	53,874	53,791	53,693	53,504	53,354	53,122	53,047	53,087	53,006
Agriculture	2,396	2,384	2,352	2,419	2,390	2,379	2,383	2,422	2,383	2,413	2,382	2,311	2,390	2,376	2,377
Nonagricultural industries	50,706	51,199	51,266	51,401	51,494	51,208	51,491	51,369	51,310	51,091	50,972	50,811	50,657	50,711	50,629
Unemployed	3,353	3,615	3,410	3,337	3,595	3,497	3,298	3,459	3,569	3,851	4,105	4,543	4,322	4,361	4,548
Unemployment rate	5.9	6.3	6.0	5.8	6.3	6.1	5.8	6.0	6.2	6.7	7.1	7.9	7.5	7.6	7.9
Not in labor force	14,683	15,222	15,009	14,985	14,772	15,285	15,300	15,309	15,408	15,440	15,462	15,355	15,752	15,761	15,733
Women, 20 years and over															
Civilian noninstitutional population[1]	80,065	81,497	81,076	81,183	81,308	81,434	81,561	81,671	81,792	81,920	82,038	82,151	82,260	82,367	82,478
Civilian labor force	41,106	42,485	42,152	42,332	42,608	42,581	42,682	42,666	42,344	42,831	42,987	42,888	42,868	43,031	43,243
Employed	38,492	39,590	39,365	39,536	39,737	39,757	39,810	39,841	39,426	39,814	39,878	39,713	39,764	39,744	39,807
Agriculture	584	604	610	609	605	585	590	609	608	596	635	572	649	628	635
Nonagricultural industries	37,907	38,986	38,755	38,927	39,132	39,172	39,220	39,232	38,818	39,218	39,243	39,141	39,115	39,116	39,172
Unemployed	2,615	2,895	2,787	2,796	2,871	2,824	2,872	2,825	2,918	3,017	3,109	3,175	3,104	3,287	3,436
Unemployment rate	6.4	6.8	6.6	6.6	6.7	6.6	6.7	6.6	6.9	7.0	7.2	7.4	7.2	7.6	7.9
Not in labor force	38,959	39,012	38,924	38,851	38,700	38,853	38,879	39,005	39,448	39,089	39,051	39,263	39,392	39,336	39,235
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	16,543	16,214	16,341	16,305	16,270	16,240	16,213	16,169	16,131	16,093	16,037	15,995	15,955	15,913	15,902
Civilian labor force	9,378	8,988	9,184	9,288	9,206	8,759	8,834	8,902	8,888	8,826	8,826	8,631	8,643	8,686	8,549
Employed	7,710	7,225	7,423	7,522	7,424	7,076	7,180	7,208	7,139	7,025	6,940	6,778	6,771	6,748	6,679
Agriculture	385	380	381	442	410	394	369	373	367	369	355	326	373	358	336
Nonagricultural industries	7,325	6,845	7,042	7,080	7,014	6,682	6,811	6,835	6,772	6,656	6,585	6,452	6,398	6,390	6,343
Unemployed	1,669	1,763	1,761	1,766	1,782	1,683	1,654	1,694	1,749	1,801	1,886	1,853	1,872	1,938	1,870
Unemployment rate	17.8	19.6	19.2	19.0	19.4	19.2	18.7	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9
Not in labor force	7,165	7,226	7,157	7,017	7,064	7,480	7,379	7,267	7,243	7,267	7,211	7,364	7,312	7,227	7,353
White															
Civilian noninstitutional population[1]	146,122	147,908	147,335	147,539	147,670	147,804	147,976	148,144	148,370	148,562	148,631	148,755	148,842	148,855	149,132
Civilian labor force	93,600	95,052	94,756	95,199	95,666	94,887	95,126	95,163	94,884	95,365	95,535	95,329	95,120	95,333	95,508
Employed	87,715	88,709	88,653	89,080	89,237	88,799	89,170	89,221	88,628	88,734	88,498	88,010	87,955	87,989	87,956
Unemployed	5,884	6,343	6,103	6,119	6,429	6,088	5,956	5,942	6,256	6,631	7,037	7,319	7,165	7,344	7,552
Unemployment rate	6.3	6.7	6.4	6.4	6.7	6.4	6.3	6.2	6.6	7.0	7.4	7.7	7.5	7.7	7.9
Not in labor force	52,522	52,856	52,579	52,340	52,004	52,917	52,850	52,981	53,486	53,197	53,096	53,426	53,722	53,522	53,624
Black															
Civilian noninstitutional population[1]	17,824	18,219	18,105	18,137	18,170	18,206	18,239	18,296	18,297	18,333	18,362	18,392	18,423	18,450	18,480
Civilian labor force	10,865	11,086	11,036	11,126	11,126	11,033	10,971	11,099	11,134	11,188	11,207	11,226	11,188	11,205	11,217
Employed	9,313	9,355	9,383	9,488	9,460	9,310	9,338	9,297	9,319	9,313	9,321	9,279	9,314	9,265	9,197
Unemployed	1,553	1,731	1,653	1,638	1,666	1,723	1,633	1,802	1,815	1,875	1,886	1,947	1,874	1,940	2,020
Unemployment rate	14.3	15.6	15.0	14.7	15.0	15.6	14.9	16.3	16.3	16.8	16.8	17.3	16.8	17.3	18.0
Not in labor force	6,959	7,133	7,069	7,011	7,044	7,173	7,268	7,197	7,163	7,145	7,155	7,166	7,235	7,245	7,263

[1] As in table 1, population figures are not seasonally adjusted.

NOTE: Effective with January 1982 data, population counts derived from the 1980 census are incorporated into the estimation procedures used in the Current Population Survey. Data for 1970-81 have been revised. Also, seasonally adjusted data have been revised based on the seasonal experience through December 1981.

3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1981										1982		
	1980	1981	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
CHARACTERISTIC															
Total employed, 16 years and over	99,303	100,397	100,406	100,878	101,045	100,430	100,864	100,840	100,258	100,343	100,172	99,613	99,581	99,590	99,492
Men	57,186	57,397	57,531	57,792	57,793	57,279	57,640	57,551	57,471	57,266	57,051	56,725	56,629	56,658	56,472
Women	42,117	43,000	42,875	43,086	43,252	43,151	43,224	43,289	42,787	43,077	43,121	42,888	42,952	42,932	43,020
Married men, spouse present	39,004	38,882	39,036	39,186	39,120	38,930	38,961	38,961	38,855	38,746	38,553	38,342	38,234	38,255	38,181
Married women, spouse present	23,532	23,915	23,920	23,979	24,192	24,106	24,159	24,043	23,826	23,874	23,820	23,681	23,744	23,727	23,900
OCCUPATION															
White-collar workers	51,882	52,949	52,860	52,855	53,016	52,957	52,907	53,141	52,908	53,199	53,086	53,084	52,836	52,841	52,763
Professional and technical	15,968	16,420	16,219	16,178	16,083	16,410	16,364	16,621	16,598	16,681	16,657	16,774	16,803	16,612	16,659
Managers and administrators, except farm	11,138	11,540	11,725	11,616	11,488	11,411	11,578	11,460	11,533	11,616	11,461	11,424	11,091	11,253	11,311
Salesworkers	6,303	6,425	6,372	6,290	6,562	6,513	6,373	6,490	6,441	6,400	6,418	6,450	6,520	6,544	6,637
Clerical workers	18,473	18,564	18,544	18,771	18,873	18,623	18,592	18,570	18,336	18,502	18,550	18,436	18,423	18,432	18,155
Blue-collar workers	31,452	31,261	31,288	31,885	31,796	31,538	31,580	31,611	31,266	30,953	30,683	30,344	30,203	30,309	30,416
Craft and kindred workers	12,787	12,662	12,826	12,825	12,911	12,749	12,787	12,724	12,514	12,446	12,411	12,446	12,370	12,454	12,511
Operatives, except transport	10,565	10,540	10,464	10,891	10,716	10,703	10,719	10,658	10,524	10,410	10,220	10,169	9,966	9,955	9,860
Transport equipment operatives	3,531	3,476	3,447	3,483	3,466	3,493	3,526	3,530	3,506	3,580	3,438	3,368	3,415	3,503	3,397
Nonfarm laborers	4,567	4,583	4,551	4,686	4,703	4,593	4,548	4,699	4,722	4,517	4,614	4,361	4,451	4,397	4,648
Service workers	13,228	13,438	13,478	13,468	13,470	13,214	13,526	13,282	13,391	13,525	13,670	13,639	13,709	13,612	13,526
Farmworkers	2,741	2,749	2,730	2,826	2,748	2,710	2,727	2,753	2,743	2,770	2,802	2,880	2,817	2,787	2,710
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,425	1,464	1,301	1,580	1,499	1,437	1,485	1,501	1,461	1,502	1,438	1,352	1,377	1,426	1,418
Self-employed workers	1,642	1,638	1,638	1,661	1,654	1,604	1,583	1,638	1,643	1,631	1,641	1,602	1,674	1,596	1,644
Unpaid family workers	297	286	290	286	235	263	244	256	258	261	321	228	380	350	277
Nonagricultural industries:															
Wage and salary workers	88,525	89,543	89,592	89,913	90,402	89,508	89,971	89,985	89,376	89,460	89,238	88,991	88,759	88,586	88,526
Government	15,912	15,690	15,930	15,885	15,776	15,707	15,637	15,526	15,475	15,491	15,397	15,585	15,578	15,527	15,492
Private industries	72,612	73,853	73,662	74,028	74,626	73,801	74,334	74,460	73,901	73,969	73,841	73,406	73,181	73,059	73,034
Private households	1,192	1,208	1,242	1,249	1,192	1,177	1,216	1,250	1,102	1,162	1,204	1,291	1,249	c1,161	1,225
Other industries	71,420	72,645	72,420	72,779	73,434	72,624	73,118	73,210	72,799	72,807	72,637	72,115	71,932	71,898	71,809
Self-employed workers	7,000	7,087	7,065	7,150	6,986	7,128	7,071	7,103	7,217	7,152	7,141	7,057	6,971	7,055	7,126
Unpaid family workers	413	380	374	325	356	376	389	387	399	451	425	410	410	408	434
PERSONS AT WORK [1]															
Nonagricultural industries	90,209	91,377	91,405	91,094	91,745	91,500	92,532	91,569	90,878	91,384	91,323	90,922	90,125	90,892	90,548
Full-time schedules	73,590	74,339	74,453	74,259	74,871	74,693	75,620	74,467	73,794	73,886	73,915	73,360	72,803	73,029	72,649
Part time for economic reasons	4,064	4,499	4,290	4,200	4,264	4,033	4,374	4,350	4,656	5,009	5,026	5,288	5,071	5,563	5,717
Usually work full time	1,714	1,738	1,660	1,593	1,657	1,465	1,980	1,729	1,759	2,006	1,945	2,121	1,783	2,193	2,237
Usually work part time	2,350	2,761	2,630	2,607	2,607	2,568	2,394	2,621	2,897	3,003	3,081	3,167	3,287	3,370	3,480
Part time for noneconomic reasons	12,555	12,539	12,662	12,635	12,610	12,774	12,538	12,752	12,428	12,489	12,382	12,274	12,251	12,300	12,183

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial disputes.

NOTE: Effective with January 1982 data, population counts derived from the 1980 census are incorporated into the estimation procedures used in the Current Population Survey. Data for 1970-81 have been revised. Also, seasonally adjusted data have been revised based on the seasonal experience through December 1981.

c=corrected.

4. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1981										1982		
	1980	1981	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
CHARACTERISTIC															
Total, 16 years and over	7.1	7.6	7.3	7.3	7.5	7.4	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0
Men, 20 years and over	5.9	6.3	6.0	5.8	6.3	6.1	5.8	6.0	6.2	6.7	7.1	7.9	7.5	7.6	7.9
Women, 20 years and over	6.4	6.8	6.6	6.6	6.7	6.6	6.7	6.6	6.9	7.0	7.2	7.4	7.2	7.6	7.9
Both sexes, 16 to 19 years	17.8	19.6	19.2	19.0	19.4	18.2	18.7	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9
White, total	6.3	6.7	6.4	6.4	6.7	6.4	6.3	6.2	6.6	7.0	7.4	7.7	7.5	7.7	7.9
Men, 20 years and over	5.3	5.6	5.3	5.2	5.6	5.3	5.0	5.2	5.5	5.9	6.4	6.9	6.6	6.7	7.0
Women, 20 years and over	5.6	5.9	5.7	5.7	5.9	5.7	5.8	5.5	5.9	6.1	6.3	6.4	6.3	6.6	6.9
Both sexes, 16 to 19 years	15.5	17.3	16.8	17.0	17.5	16.8	16.4	16.1	17.2	17.7	19.0	19.0	19.6	20.0	19.0
Black, total	14.3	15.6	15.0	14.7	15.0	15.6	14.9	16.3	16.3	16.8	16.8	17.3	16.8	17.3	18.0
Men, 20 years and over	12.4	13.5	12.1	12.1	13.0	13.7	12.7	13.6	14.5	14.7	15.5	16.5	16.3	16.0	16.0
Women, 20 years and over	11.9	13.4	13.6	12.9	13.1	13.3	13.1	13.8	14.0	13.9	13.6	14.1	13.3	14.5	15.4
Both sexes, 16 to 19 years	38.5	41.4	38.7	40.2	36.9	40.9	40.0	40.0	40.8	45.6	44.1	42.2	41.2	42.3	48.0
Married men, spouse present	4.2	4.3	4.1	3.8	4.0	4.2	3.9	4.0	4.4	4.8	5.2	5.7	5.3	5.3	5.5
Married women, spouse present	5.8	6.0	5.9	5.9	5.8	5.7	5.7	5.5	6.0	6.1	6.5	6.6	6.2	7.0	7.1
Women who maintain families	9.2	10.4	9.6	9.9	10.4	10.7	11.2	10.1	10.7	10.6	10.8	10.5	10.4	10.2	10.6
Full-time workers	6.9	7.3	7.1	6.9	7.1	7.1	6.8	6.9	7.3	7.7	8.1	8.7	8.4	8.5	8.9
Part-time workers	8.8	9.4	9.1	9.2	9.6	9.2	9.3	9.6	9.6	9.5	10.2	9.2	9.6	10.8	10.0
Unemployed 15 weeks and over	1.7	2.1	2.1	2.0	2.0	2.2	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.5	2.7
Labor force time lost[1]	7.9	8.5	8.2	8.2	8.8	7.9	7.9	7.9	8.5	9.1	9.5	10.1	10.0	9.8	10.4
OCCUPATION															
White-collar workers	3.7	4.0	3.9	4.0	4.0	3.9	4.0	3.9	4.1	4.1	4.2	4.5	4.2	4.6	4.8
Professional and technical	2.5	2.8	2.7	3.1	2.8	2.8	2.8	2.5	2.8	2.6	2.7	3.4	2.9	3.1	3.2
Managers and administrators, except farm	2.4	2.7	2.5	2.4	2.6	2.7	2.6	2.7	2.7	2.8	3.0	3.1	2.7	3.1	3.0
Salesworkers	4.4	4.6	4.1	4.2	4.6	4.3	4.9	4.7	5.0	4.9	5.0	4.9	4.5	4.8	5.8
Clerical workers	5.3	5.7	5.7	5.8	5.6	5.4	5.7	5.7	5.8	6.0	6.0	6.2	6.3	6.7	6.9
Blue-collar workers	10.0	10.3	10.0	9.7	9.9	9.8	9.5	9.5	10.2	10.9	11.8	12.7	12.5	12.5	12.9
Craft and kindred workers	6.6	7.5	7.1	6.8	7.2	7.1	6.9	7.0	7.7	8.3	8.5	9.3	9.0	8.4	9.1
Operatives, except transport	12.2	12.2	11.7	11.6	11.8	11.1	11.1	11.1	11.6	12.8	14.1	15.5	15.4	15.4	15.9
Transport equipment operatives	8.8	8.7	9.1	8.1	8.2	8.1	7.3	8.0	8.7	8.0	10.4	10.5	10.2	10.3	10.4
Nonfarm laborers	14.6	14.7	14.2	14.0	13.5	14.7	14.4	13.2	14.6	15.6	16.0	16.9	16.9	17.9	17.9
Service workers	7.9	8.9	8.3	8.5	9.4	8.9	8.0	8.9	9.0	9.3	9.7	9.6	9.2	9.8	10.2
Farmworkers	4.6	5.3	5.2	3.9	5.2	6.2	4.8	5.4	4.0	6.2	6.2	6.4	6.9	4.9	5.4
INDUSTRY															
Nonagricultural private wage and salary workers[2]	7.4	7.7	7.5	7.3	7.7	7.4	7.2	7.3	7.7	8.1	8.4	9.1	8.8	9.0	9.5
Construction	14.1	15.6	14.7	14.5	15.7	16.1	15.2	16.2	16.3	17.6	17.8	18.1	18.7	18.1	17.9
Manufacturing	8.5	8.3	8.1	7.6	7.8	7.4	7.3	7.0	7.9	8.6	9.4	11.0	10.4	10.6	10.8
Durable goods	8.9	8.2	8.0	7.5	7.4	7.1	7.1	6.5	7.7	8.6	9.5	11.8	11.0	11.3	10.8
Nondurable goods	7.9	8.4	8.3	7.8	8.6	7.9	7.6	7.9	8.3	8.6	9.3	9.6	9.5	9.5	10.8
Transportation and public utilities	4.9	5.2	6.1	5.5	5.7	4.9	4.1	4.8	4.2	4.8	5.5	6.0	6.4	5.9	5.6
Wholesale and retail trade	7.4	8.1	7.6	7.5	8.3	7.7	7.9	7.9	8.5	8.4	8.6	8.9	8.7	9.0	10.3
Finance and service industries	5.3	5.9	5.6	5.8	5.8	5.8	5.7	5.7	6.0	6.2	6.1	6.4	5.9	6.5	6.9
Government workers	4.1	4.7	4.6	4.7	4.7	4.6	4.6	4.5	4.7	4.7	5.2	5.0	4.8	5.2	4.9
Agricultural wage and salary workers	11.0	12.1	12.1	9.4	11.0	13.3	10.7	12.0	11.0	13.4	14.1	14.8	16.2	12.8	14.0

[1] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

[2] Includes mining, not shown separately.

NOTE: Effective with January 1982 data, population counts derived from the 1980 census are incorporated into the estimation procedures used in the Current Population Survey. Data for 1970-81 have been revised. Also, seasonally adjusted data have been revised based on the seasonal experience through December 1981.

5. Unemployment rates, by sex and age, seasonally adjusted

Sex and age	Annual average		1981										1982		
	1980	1981	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Total, 16 years and over	7.1	7.6	7.3	7.3	7.5	7.4	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0
16 to 19 years	17.8	19.6	19.2	19.0	19.4	19.2	18.7	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9
16 to 17 years	20.0	21.4	21.4	21.6	21.3	22.6	19.8	20.8	21.4	21.5	22.6	21.9	21.9	22.7	22.7
18 to 19 years	16.2	18.4	17.6	17.2	17.7	17.5	17.8	17.6	18.5	20.0	20.5	21.2	21.3	22.0	21.3
20 to 24 years	11.5	12.3	11.8	12.0	12.6	12.1	11.5	12.1	12.3	12.7	13.0	13.5	13.5	14.1	14.2
25 years and over	5.1	5.4	5.2	5.1	5.2	5.3	5.2	5.2	5.4	5.7	6.0	6.5	6.3	6.4	6.8
25 to 54 years	5.5	5.8	5.6	5.4	5.6	5.6	5.5	5.5	5.8	6.2	6.5	6.9	6.7	6.8	7.3
55 years and over	3.3	3.6	3.6	3.4	3.4	3.5	3.5	3.5	3.8	3.8	3.8	4.1	4.2	4.3	4.6
Men, 16 years and over	6.9	7.4	7.1	6.9	7.3	7.2	6.7	7.1	7.3	7.7	8.3	9.0	8.6	8.7	9.0
16 to 19 years	18.3	20.1	19.8	19.5	20.0	20.0	18.8	19.8	19.9	20.1	21.8	22.3	22.1	22.5	23.5
16 to 17 years	20.4	22.0	21.7	22.5	22.3	24.0	19.9	21.5	21.5	21.1	22.7	22.6	23.0	23.0	24.3
18 to 19 years	16.7	18.8	18.5	17.4	18.0	18.2	17.9	18.3	18.7	19.3	21.0	22.2	21.4	22.1	22.9
20 to 24 years	12.5	13.2	13.0	13.0	13.8	12.9	11.6	12.9	13.1	13.8	14.4	14.8	14.9	15.4	15.7
25 years and over	4.8	5.1	4.8	4.6	4.7	5.0	4.7	4.8	5.0	5.5	5.8	6.5	6.3	6.3	6.6
25 to 54 years	5.1	5.5	5.1	4.9	5.1	5.2	5.0	5.2	5.5	5.9	6.3	6.9	6.7	6.7	7.1
55 years and over	3.3	3.5	3.3	3.2	3.4	3.4	3.4	3.4	3.5	3.7	3.7	4.4	4.3	4.2	4.8
Women, 16 years and over	7.4	7.9	7.7	7.7	7.8	7.7	7.8	7.7	8.0	8.2	8.4	8.5	8.4	8.9	9.0
16 to 19 years	17.2	19.0	18.5	18.4	18.7	18.4	18.6	18.2	18.5	20.7	20.9	20.5	21.2	22.1	20.1
16 to 17 years	19.6	20.7	21.2	20.5	20.2	21.1	19.7	20.0	21.2	21.9	22.5	21.1	20.6	22.5	20.8
18 to 19 years	15.6	17.9	18.6	17.1	17.4	16.8	17.7	16.9	18.3	20.6	19.9	20.0	21.1	21.9	19.6
20 to 24 years	10.4	11.2	10.5	10.9	11.2	11.2	11.3	11.1	11.4	11.5	11.3	12.0	11.9	12.7	12.6
25 years and over	5.5	5.9	5.8	5.7	5.8	5.7	5.8	5.6	6.0	6.1	6.4	6.4	6.3	6.5	7.0
25 to 54 years	6.0	6.3	6.2	6.1	6.4	6.1	6.1	6.0	6.3	6.5	6.8	6.9	6.7	7.0	7.6
55 years and over	3.2	3.8	4.2	3.7	3.4	3.5	3.7	3.7	4.3	4.0	3.8	3.7	4.1	4.3	4.3

6. Unemployed persons, by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	1981										1982		
	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
NUMBER OF UNEMPLOYED													
Lost last job	3,989	3,958	4,032	4,173	3,867	4,106	4,426	4,573	4,905	5,343	5,205	5,153	5,622
On layoff	1,323	1,303	1,357	1,302	1,225	1,276	1,452	1,631	1,826	2,042	1,860	1,740	1,828
Other job losers	2,666	2,655	2,675	2,871	2,642	2,830	2,974	2,942	3,079	3,301	3,345	3,413	3,794
Left last job	901	903	1,004	896	926	879	921	976	916	923	835	984	985
Reentered labor force	2,089	2,044	2,106	2,039	2,078	2,004	2,058	2,178	2,339	2,244	2,079	2,277	2,249
Seeking first job	986	988	956	973	940	971	977	1,002	986	1,021	1,055	1,100	1,044
PERCENT DISTRIBUTION													
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	50.2	50.1	49.8	51.6	49.5	51.4	52.8	52.4	53.6	56.1	56.7	54.3	57.4
On layoff	16.6	16.5	16.8	16.1	15.7	16.0	17.3	18.7	19.9	21.4	20.3	18.3	18.7
Other job losers	33.5	33.6	33.0	35.5	33.8	35.4	35.5	33.7	33.6	34.6	36.5	35.9	38.7
Job leavers	11.3	11.4	12.4	11.1	11.9	11.0	11.0	11.2	10.0	9.7	9.1	10.2	9.9
Reentrants	26.0	25.9	26.0	25.2	26.6	25.5	24.6	25.0	25.5	23.5	22.7	24.0	22.9
New entrants	12.4	12.5	11.8	12.0	12.0	12.2	11.7	11.5	10.9	10.7	11.5	11.6	10.7
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE													
Job losers	3.7	3.7	3.7	3.8	3.6	3.8	4.1	4.2	4.5	4.9	4.8	4.7	5.1
Job leavers	.8	.8	.9	.8	.9	.8	.8	.9	.8	.8	.8	.9	.8
Reentrants	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.1	1.9	2.1	2.1
New entrants	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	1.0	1.0	1.0

7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1981										1982		
	1980	1981	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Less than 5 weeks	3,295	3,449	3,277	3,189	3,378	3,303	3,323	3,326	3,529	3,707	3,852	4,037	3,852	3,789	3,825
5 to 14 weeks	2,470	2,539	2,408	2,472	2,606	2,423	2,312	2,489	2,585	2,686	2,882	3,016	3,088	3,052	3,078
15 weeks and over	1,871	2,285	2,269	2,187	2,231	2,363	2,170	2,217	2,248	2,292	2,364	2,372	2,399	2,724	2,954
15 to 26 weeks	1,052	1,122	1,057	1,048	1,061	1,227	1,096	1,078	1,146	1,166	1,229	1,189	1,210	1,445	1,605
27 weeks and over	820	1,162	1,212	1,139	1,170	1,136	1,074	1,139	1,102	1,126	1,135	1,183	1,190	1,279	1,349
Average (mean) duration, in weeks	11.9	13.7	13.9	13.7	13.3	14.3	14.1	14.3	13.7	13.6	13.1	12.8	13.5	14.1	13.9

NOTE: Effective with January 1982 data, population counts derived from the 1980 census are incorporated into the estimation procedures used in the Current Population Survey. Data for 1970-81 have been revised. Also, seasonally adjusted data have been revised based on the seasonal experience through December 1981.

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by 166,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

Definitions

Employed persons are all persons who received pay (including holiday and sick pay) for any part of the payroll period including the 12th of the month. Persons holding more than one job (about 5 percent of all persons in the labor force) are counted in each establishment which reports them.

Production workers in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 12–17 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities; in wholesale and retail trade; in finance, insurance, and real estate; and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to eliminate the effects of price change, using the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated to underlying wage-rate developments: fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries.

Hours represent the average weekly hours of production or nonsupervisory workers for which pay was received and are different from standard or scheduled hours. **Overtime hours** represent the portion of gross average weekly hours which were in excess of regular hours and for which overtime premiums were paid.

Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of June 1981 data, published in the August 1981 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Complete comparable historical unadjusted and seasonally adjusted data are published in a Supplement to Employment and Earnings (unadjusted data from April 1977 through March 1981 and seasonally adjusted data from January 1974 through March 1981) and in *Employment and Earnings, United States, 1909–78*, BLS Bulletin 1312–11 (for prior periods).

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9–20. See also *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976).

8. Employment by industry, selected years, 1950–81

[Nonagricultural payroll data, in thousands]

Year	Total	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale and retail trade	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services	Government		
											Total	Federal	State and local
1950	45,197	901	2,364	15,241	4,034	9,386	2,635	6,751	1,888	5,357	6,026	1,928	4,098
1955	50,641	792	2,839	16,882	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1960[1]	54,189	712	2,926	16,796	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1964	58,283	634	3,097	17,274	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	632	3,232	18,062	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	627	3,317	19,214	4,158	13,245	3,597	9,848	3,058	9,498	10,784	2,564	8,220
1967	65,803	613	3,248	19,447	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	606	3,350	19,781	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	619	3,575	20,167	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	623	3,588	19,367	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	609	3,704	18,623	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	628	3,889	19,151	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	642	4,097	20,154	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	697	4,020	20,077	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	752	3,525	18,323	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	779	3,576	18,997	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	813	3,851	19,682	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	851	4,229	20,505	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	958	4,463	21,040	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,147
1980	90,564	1,020	4,399	20,300	5,143	20,386	5,281	15,104	5,168	17,901	16,249	2,866	13,383
1981	91,543	1,104	4,307	20,261	5,151	20,738	5,343	15,395	5,331	18,598	16,054	2,772	13,282

[1] Data include Alaska and Hawaii beginning in 1959.

9. Employment by State

[Nonagricultural payroll data, in thousands]

State	Feb. 1981	Jan. 1982	Feb. 1982^{p}	State	Feb. 1981	Jan. 1982	Feb. 1982^{p}
Alabama	1,341.9	1,333.3	1,337.8	Montana	273.1	289.8	290.5
Alaska	162.8	172.1	173.5	Nebraska	611.7	609.4	609.3
Arizona	1,038.0	1,038.9	1,049.5	Nevada	401.3	410.2	412.5
Arkansas	732.7	712.4	717.6	New Hampshire	381.6	388.6	386.5
California	9,891.5	10,005.1	10,004.4	New Jersey	3,015.1	3,028.4	3,027.9
Colorado	1,263.0	1,277.8	1,276.6	New Mexico	467.1	470.9	471.7
Connecticut	1,414.7	1,417.7	1,409.6	New York	7,142.6	7,183.0	7,200.9
Delaware	248.8	244.5	247.9	North Carolina	2,389.6	2,337.7	2,343.2
District of Columbia	610.6	600.3	600.0	North Dakota	238.7	244.6	245.5
Florida	3,703.5	3,805.3	3,812.9	Ohio	4,251.3	4,190.3	4,176.0
Georgia	2,163.4	2,155.9	2,159.9	Oklahoma	1,161.7	1,203.6	1,201.6
Hawaii	404.9	397.9	402.2	Oregon	1,007.0	970.8	972.3
Idaho	329.4	313.7	314.5	Pennsylvania	4,662.2	4,577.2	4,572.9
Illinois	4,691.2	4,623.3	4,605.4	Rhode Island	392.7	388.1	387.2
Indiana	2,100.2	2,024.3	2,022.6	South Carolina	1,186.9	1,172.9	1,176.0
Iowa	1,074.7	1,046.7	1,050.1	South Dakota	230.1	227.9	228.7
Kansas	937.7	936.7	933.8	Tennessee	1,723.9	1,701.4	1,699.3
Kentucky	1,186.4	1,174.7	1,164.1	Texas	6,000.7	6,243.9	6,280.3
Louisiana	1,592.1	1,621.6	1,628.2	Utah	546.3	558.5	556.7
Maine	405.4	400.5	399.7	Vermont	200.5	200.1	200.4
Maryland	1,681.0	1,651.7	1,654.4	Virginia	2,122.4	2,139.9	2,140.6
Massachusetts	2,616.1	(1)	(1)	Washington	1,582.0	1,539.9	1,536.7
Michigan	3,351.9	3,214.5	3,218.2	West Virginia	624.7	609.3	608.6
Minnesota	1,728.7	1,710.1	1,709.8	Wisconsin	1,910.1	1,859.4	1,854.6
Mississippi	813.7	806.9	808.6	Wyoming	208.6	209.6	208.2
Missouri	1,925.5	1,922.3	1,919.7				
				Virgin Islands	36.6	36.1	(1)

[1] Not available.

10. Employment by industry division and major manufacturing group

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1981										1982		
	1980	1981	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.ᵖ	Mar.ᵖ
TOTAL	90,564	91,543	90,720	91,337	91,849	92,481	91,600	91,588	92,159	92,424	92,280	91,932	89,799	89,984	90,255
MINING	1,020	1,104	1,084	941	957	1,132	1,155	1,169	1,169	1,164	1,170	1,166	1,149	1,146	1,148
CONSTRUCTION	4,399	4,307	4,048	4,246	4,356	4,477	4,564	4,570	4,516	4,493	4,369	4,155	3,721	3,705	3,780
MANUFACTURING	20,300	20,261	20,160	20,253	20,342	20,531	20,337	20,473	20,600	20,369	20,122	19,804	19,462	19,410	19,352
Production workers	14,223	14,083	14,049	14,127	14,195	14,325	14,108	14,230	14,376	14,147	13,904	13,583	13,276	13,250	13,215
Durable goods	12,181	12,136	12,120	12,197	12,235	12,334	12,199	12,188	12,292	12,163	11,989	11,786	11,589	11,539	11,511
Production workers	8,438	8,316	8,345	8,412	8,438	8,500	8,347	8,323	8,440	8,313	8,153	7,941	7,763	7,734	7,714
Lumber and wood products	690.3	679.3	678.3	696.9	703.4	711.0	708.6	701.5	691.0	664.5	638.7	618.8	602.4	610.6	608.0
Furniture and fixtures	466.8	476.6	472.1	478.0	479.0	480.5	472.0	480.6	484.7	483.5	478.5	471.1	463.2	458.8	456.1
Stone, clay, and glass products	665.6	650.2	639.5	652.6	659.7	671.0	666.7	669.1	664.5	652.8	641.2	619.6	590.1	584.6	588.1
Primary metal industries	1,144.1	1,128.2	1,141.3	1,149.9	1,147.5	1,155.5	1,135.5	1,140.3	1,138.8	1,109.3	1,087.8	1,058.0	1,041.7	1,024.1	1,018.3
Fabricated metal products	1,609.0	1,583.6	1,585.4	1,583.7	1,596.1	1,606.8	1,584.5	1,590.9	1,607.5	1,584.2	1,563.5	1,532.8	1,502.3	1,494.4	1,485.7
Machinery, except electrical	2,497.0	2,512.6	2,504.3	2,506.1	2,508.6	2,531.3	2,517.4	2,511.4	2,540.7	2,528.4	2,512.3	2,495.4	2,465.0	2,458.3	2,442.1
Electric and electronic equipment	2,103.2	2,133.9	2,119.5	2,129.7	2,134.7	2,152.7	2,138.0	2,146.1	2,164.8	2,158.3	2,131.3	2,104.1	2,089.3	2,080.2	2,077.5
Transportation equipment	1,875.3	1,837.8	1,860.4	1,874.3	1,877.4	1,882.7	1,840.3	1,799.6	1,849.3	1,832.3	1,803.0	1,755.7	1,719.4	1,713.8	1,734.5
Instruments and related products	708.5	718.0	712.1	714.4	715.2	723.2	722.1	726.2	723.1	720.0	718.6	718.0	710.8	709.1	704.5
Miscellaneous manufacturing	419.3	415.3	406.7	411.3	413.4	419.5	412.3	421.8	428.7	429.9	426.2	412.2	395.3	396.2	396.5
Nondurable goods	8,118	8,125	8,040	8,056	8,107	8,197	8,139	8,285	8,308	8,205	8,129	8,018	7,873	7,871	7,841
Production workers	5,786	5,766	5,704	5,715	5,757	5,825	5,761	5,907	5,936	5,834	5,751	5,642	5,513	5,516	5,501
Food and kindred products	1,710.8	1,664.1	1,632.5	1,631.0	1,648.1	1,673.4	1,714.8	1,773.2	1,776.1	1,729.0	1,680.2	1,657.3	1,613.3	1,614.5	1,610.1
Tobacco manufactures	69.2	71.1	68.3	66.2	65.2	66.4	68.3	75.6	77.7	77.0	74.9	73.3	72.2	68.7	64.6
Textile mill products	852.7	839.3	840.9	841.6	844.3	851.0	836.5	847.3	850.2	834.3	826.8	816.5	795.5	794.7	792.1
Apparel and other textile products	1,265.8	1,255.6	1,250.2	1,2[illegible]2	1,265.9	1,283.9	1,231.1	1,276.8	1,287.3	1,274.1	1,250.5	1,224.4	1,188.8	1,207.3	1,199.3
Paper and allied products	694.0	682.3	688.6	690.9	693.1	701.0	686.4	700.3	702.0	691.4	686.4	681.7	674.9	670.8	667.4
Printing and publishing	1,258.3	1,269.0	1,2[illegible].2	1,280.4	1,281.8	1,286.2	1,286.5	1,289.4	1,294.1	1,290.7	1,305.1	1,312.5	1,300.9	1,304.1	1,304.9
Chemicals and allied products	1,107.4	1,107.3	1,106.8	1,106.2	1,110.3	1,121.1	1,116.6	1,112.0	1,110.5	1,104.4	1,100.2	1,096.3	1,088.0	1,087.3	1,080.2
Petroleum and coal products	196.6	210.8	207.0	209.5	212.9	215.4	216.1	215.4	212.7	211.4	210.4	205.8	199.0	197.5	196.6
Rubber and miscellaneous plastics products	730.7	744.4	737.2	743.5	749.2	750.0	747.0	756.8	760.8	748.2	738.6	726.4	720.4	715.5	715.6
Leather and leather products	232.6	232.3	230.4	231.7	235.9	230.1	227.5	238.6	237.0	235.7	232.1	223.1	218.5	210.7	208.6
TRANSPORTATION AND PUBLIC UTILITIES	5,143	5,151	5,095	5,120	5,148	5,195	5,177	5,175	5,222	5,204	5,183	5,153	5,083	5,045	5,047
WHOLESALE AND RETAIL TRADE	20,386	20,738	20,290	20,513	20,672	20,795	20,735	20,811	20,919	20,999	21,148	21,413	20,682	20,529	20,592
WHOLESALE TRADE	5,281	5,343	5,293	5,317	5,335	5,381	5,376	5,386	5,370	5,381	5,379	5,352	5,294	5,283	5,290
RETAIL TRADE	15,104	15,395	14,997	15,196	15,337	15,414	15,359	15,425	15,549	15,618	15,769	16,061	15,388	15,246	15,314
FINANCE, INSURANCE, AND REAL ESTATE	5,168	5,331	5,263	5,295	5,326	5,384	5,408	5,408	5,361	5,349	5,344	5,350	5,329	5,326	5,341
SERVICES	17,901	18,598	18,287	18,512	18,633	18,704	18,847	18,835	18,812	18,826	18,800	18,762	18,506	18,681	18,804
GOVERNMENT	16,249	16,054	16,493	16,457	16,414	16,203	15,387	15,148	15,560	16,021	16,157	16,129	15,887	16,112	16,181
Federal	2,866	2,772	2,769	2,773	2,782	2,825	2,833	2,803	2,735	2,737	2,729	2,729	2,717	2,721	2,724
State and local	13,383	13,282	13,724	13,684	13,632	13,378	12,554	12,345	12,825	13,284	13,428	13,400	13,170	13,391	13,457

11. Employment by industry division and major manufacturing group, seasonally adjusted

[Nonagricultural payroll data, in thousands]

Industry division and group	1981										1982		
	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.ᵖ	Mar.ᵖ
TOTAL	91,347	91,458	91,564	91,815	91,880	91,901	92,033	91,832	91,522	91,113	90,879	91,040	90,822
MINING	1,098	950	957	1,110	1,132	1,151	1,162	1,162	1,172	1,175	1,166	1,166	1,163
CONSTRUCTION	4,416	4,410	4,334	4,284	4,272	4,275	4,272	4,250	4,229	4,193	4,085	4,168	4,122
MANUFACTURING	20,191	20,332	20,414	20,424	20,535	20,505	20,496	20,241	20,017	19,736	19,550	19,507	19,375
Production workers	14,074	14,187	14,247	14,245	14,327	14,294	14,281	14,030	13,797	13,514	13,342	13,321	13,237
Durable goods	12,099	12,207	12,254	12,278	12,333	12,332	12,311	12,115	11,932	11,714	11,596	11,562	11,485
Production workers	8,325	8,412	8,442	8,455	8,491	8,485	8,465	8,267	8,083	7,868	7,758	7,745	7,691
Lumber and wood products	692	702	710	699	702	686	677	652	634	619	615	625	620
Furniture and fixtures	487	478	484	486	488	487	485	480	470	464	458	454	451
Stone, clay, and glass products	651	656	658	658	658	660	655	644	634	622	607	605	599
Primary metal industries	1,141	1,145	1,142	1,144	1,140	1,148	1,139	1,114	1,090	1,058	1,042	1,026	1,017
Fabricated metal products	1,581	1,595	1,604	1,604	1,614	1,610	1,608	1,575	1,548	1,516	1,501	1,493	1,481
Machinery, except electrical	2,480	2,491	2,511	2,521	2,533	2,542	2,551	2,549	2,522	2,480	2,455	2,441	2,418
Electric and electronic equipment	2,117	2,134	2,143	2,148	2,163	2,166	2,163	2,150	2,119	2,089	2,093	2,085	2,075
Transportation equipment	1,849	1,878	1,872	1,886	1,886	1,880	1,889	1,811	1,783	1,725	1,706	1,721	1,722
Instruments and related products	712	714	718	717	723	727	727	723	719	717	711	709	704
Miscellaneous manufacturing	409	414	414	415	426	417	419	417	415	416	409	403	398
Nondurable goods	8,092	8,125	8,160	8,146	8,202	8,173	8,185	8,126	8,085	8,022	7,954	7,945	7,890
Production workers	5,749	5,775	5,805	5,790	5,836	5,809	5,816	5,763	5,714	5,646	5,584	5,576	5,546
Food and kindred products	1,691	1,687	1,703	1,673	1,691	1,688	1,680	1,675	1,676	1,680	1,683	1,678	1,667
Tobacco manufactures	72	72	71	71	71	73	71	70	70	70	71	70	68
Textile mill products	838	842	843	846	856	849	848	833	823	812	795	792	780
Apparel and other textile products	1,243	1,250	1,258	1,264	1,276	1,272	1,273	1,259	1,251	1,233	1,210	1,211	1,192
Paper and allied products	689	691	694	695	696	698	703	691	686	682	678	673	667
Printing and publishing	1,276	1,280	1,283	1,284	1,290	1,295	1,301	1,302	1,302	1,302	1,301	1,303	1,302
Chemicals and allied products	1,108	1,107	1,109	1,111	1,110	1,106	1,112	1,108	1,104	1,100	1,093	1,093	1,090
Petroleum and coal products	210	211	213	212	212	212	211	210	210	208	203	201	201
Rubber and miscellaneous plastics products	734	744	753	757	760	764	760	744	733	722	718	712	713
Leather and leather products	231	231	233	232	238	236	236	234	230	224	222	212	210
TRANSPORTATION AND PUBLIC UTILITIES	5,139	5,161	5,148	5,149	5,167	5,170	5,186	5,168	5,147	5,122	5,124	5,101	5,088
WHOLESALE AND RETAIL TRADE	20,635	20,636	20,714	20,717	20,796	20,862	20,872	20,916	20,838	20,735	20,849	20,925	20,904
WHOLESALE TRADE	5,316	5,333	5,346	5,349	5,360	5,375	5,370	5,360	5,363	5,336	5,321	5,320	5,309
RETAIL TRADE	15,319	15,303	15,368	15,368	15,436	15,487	15,502	15,556	15,475	15,399	15,528	15,605	15,595
FINANCE, INSURANCE, AND REAL ESTATE	5,293	5,316	5,328	5,331	5,344	5,354	5,366	5,360	5,355	5,366	5,361	5,364	5,373
SERVICES	18,371	18,475	18,540	18,560	18,642	18,687	18,774	18,788	18,838	18,856	18,845	18,918	18,898
GOVERNMENT	16,204	16,170	16,131	16,040	15,992	15,917	15,905	15,938	15,926	15,930	15,899	15,891	15,899
Federal	2,781	2,767	2,779	2,781	2,777	2,770	2,765	2,759	2,748	2,741	2,742	2,737	2,732
State and local	13,423	13,403	13,352	13,259	13,215	13,147	13,140	13,179	13,178	13,189	13,157	13,154	13,167

12. Hours and earnings, by industry division, selected years, 1950–81

[Gross averages, production or nonsupervisory workers on nonagricultural payrolls]

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Total private			Mining			Construction			Manufacturing		
1950	$53.13	39.8	$1.335	$67.16	37.9	$1.772	$69.68	37.4	$1.863	$58.32	40.5	$1.440
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1960[1]	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	269.34	40.2	6.70
1980	235.10	35.3	6.66	396.14	43.2	9.17	367.04	37.0	9.92	288.62	39.7	7.27
1981	255.20	35.2	7.25	438.62	43.6	10.06	395.60	36.8	10.75	317.60	39.8	7.98
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950	....	....	....	$44.55	40.5	$1.100	$50.52	37.7	$1.340	....	....	....
1951	....	....	....	47.79	40.5	1.18	54.67	37.7	1.45	....	....	....
1952	....	....	....	49.20	40.0	1.23	57.08	37.8	1.51	....	....	....
1953	....	....	....	51.35	39.5	1.30	59.57	37.7	1.58	....	....	....
1954	....	....	....	53.33	39.5	1.35	62.04	37.6	1.65	....	....	....
1955	....	....	....	55.16	39.4	1.40	63.92	37.6	1.70	....	....	....
1956	....	....	....	57.48	39.1	1.47	65.68	36.9	1.78	....	....	....
1957	....	....	....	59.60	38.7	1.54	67.53	36.7	1.84	....	....	....
1958	....	....	....	61.76	38.6	1.60	70.12	37.1	1.89	....	....	....
1959[1]	....	....	....	64.41	38.8	1.66	72.74	37.3	1.95	....	....	....
1960	....	....	....	66.01	38.6	1.71	75.14	37.2	2.02	....	....	....
1961	....	....	....	67.41	38.3	1.76	77.12	36.9	2.09	....	....	....
1962	....	....	....	69.91	38.2	1.83	80.94	37.3	2.17	....	....	....
1963	....	....	....	72.01	38.1	1.89	84.38	37.5	2.25	....	....	....
1964	$118.78	41.1	$2.89	74.66	37.9	1.97	85.79	37.3	2.30	$70.03	36.1	$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	351.25	39.6	8.87	176.46	32.2	5.48	209.24	36.2	5.78	190.71	32.6	5.85
1981	382.97	39.4	9.72	190.35	32.1	5.93	228.69	36.3	6.30	208.97	32.6	6.41

[1] Data include Alaska and Hawaii beginning in 1959.

13. Weekly hours, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981										1982		
	1980	1981	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.^{p}	Mar.^{p}
TOTAL PRIVATE	35.3	35.2	35.2	35.2	35.2	35.4	35.6	35.6	35.0	35.1	35.1	35.2	33.9	34.7	34.7
MINING	43.2	43.6	42.3	43.6	43.8	42.1	43.5	44.1	43.8	44.5	44.3	44.7	42.8	43.6	43.9
CONSTRUCTION	37.0	36.8	37.2	36.9	36.9	37.2	37.7	37.3	35.7	37.5	37.0	37.0	33.2	35.6	36.7
MANUFACTURING	39.7	39.8	39.9	39.7	40.1	40.2	39.6	39.8	39.5	39.7	39.6	39.9	37.1	39.2	39.1
Overtime hours	2.8	2.8	2.8	2.6	2.9	3.0	2.8	3.0	2.9	2.8	2.6	2.6	2.2	2.3	2.3
Durable goods	40.1	40.2	40.5	40.3	40.6	40.6	39.9	40.2	39.8	40.1	40.0	40.4	37.7	39.6	39.5
Overtime hours	2.8	2.8	2.9	2.7	3.0	3.0	2.8	2.9	2.8	2.7	2.5	2.6	2.1	2.2	2.2
Lumber and wood products	38.6	38.7	39.0	39.1	39.6	39.5	38.7	39.0	37.9	38.2	37.6	38.1	33.7	37.3	37.2
Furniture and fixtures	38.1	38.4	38.8	38.2	38.5	38.9	37.8	33.6	37.7	38.6	38.1	38.9	32.3	37.4	37.2
Stone, clay, and glass products	40.8	40.6	40.6	40.9	41.1	41.2	40.8	41.0	40.6	40.5	40.5	40.1	37.4	39.1	39.4
Primary metal industries	40.1	40.5	41.1	41.2	40.9	40.9	40.3	40.3	40.8	39.6	39.7	39.6	38.4	39.5	39.1
Fabricated metal products	40.4	40.3	40.6	40.2	40.7	40.8	39.9	40.3	39.6	40.1	40.0	40.4	37.8	39.5	39.5
Machinery except electrical	41.0	40.9	41.2	40.8	41.2	41.1	40.4	40.7	40.4	40.6	40.9	41.5	39.1	40.6	40.3
Electric and electronic equipment	39.8	39.9	40.2	39.8	40.1	40.2	39.7	40.0	39.7	39.9	39.8	40.3	38.1	39.8	39.7
Transportation equipment	40.6	40.9	41.1	41.0	41.6	41.3	40.7	40.5	39.9	40.9	40.8	41.4	38.4	40.4	40.4
Instruments and related products	40.5	40.4	40.6	39.9	40.3	40.4	39.9	40.4	40.4	40.4	40.8	40.7	38.6	40.0	40.4
Miscellaneous manufacturing	38.7	38.9	38.9	38.6	38.9	39.0	38.5	39.0	38.7	39.3	39.5	39.1	36.7	38.5	38.7
Nondurable goods	39.0	39.2	39.1	38.9	39.4	39.5	39.1	39.4	39.1	39.1	39.1	39.2	36.2	38.6	38.4
Overtime hours	2.8	2.8	2.7	2.6	2.9	2.9	2.8	3.0	3.1	2.9	2.8	2.6	2.4	2.5	2.4
Food and kindred products	39.7	39.7	39.2	39.3	39.8	39.8	39.6	40.0	39.8	39.6	39.9	40.4	38.8	39.7	39.3
Tobacco manufactures	38.1	38.8	37.2	37.2	38.6	38.5	38.6	40.7	40.2	39.4	38.8	38.1	36.1	38.3	37.1
Textile mill products	40.1	39.7	40.1	39.4	40.3	40.4	39.7	40.0	38.9	39.4	39.2	38.6	31.2	38.0	37.7
Apparel and other textile products	35.4	35.7	35.8	35.2	35.0	36.4	36.0	36.3	35.2	35.8	35.8	35.5	30.0	35.3	35.0
Paper and allied products	42.3	42.5	42.4	42.3	42.5	42.7	42.4	42.5	43.2	42.4	42.3	42.7	41.3	42.1	41.7
Printing and publishing	37.1	37.3	37.1	37.0	37.3	37.2	37.2	37.5	37.4	37.2	37.3	37.9	36.2	37.1	37.2
Chemicals and allied products	41.5	41.6	41.6	41.6	41.6	41.6	41.5	41.4	42.2	41.5	41.7	41.8	40.8	41.2	40.9
Petroleum and coal products	41.8	43.2	42.6	43.9	43.6	43.5	43.7	43.0	44.4	43.1	43.0	42.6	43.1	42.5	42.1
Rubber and miscellaneous plastics products	40.1	40.4	40.7	40.4	40.9	40.9	40.0	40.4	39.8	40.2	39.9	40.1	37.9	40.0	40.0
Leather and leather products	36.7	36.8	36.8	36.3	37.4	38.1	36.6	36.9	36.0	36.7	36.6	36.4	33.3	35.4	35.5
TRANSPORTATION AND PUBLIC UTILITIES	39.6	39.4	39.4	39.3	39.3	39.8	39.8	39.5	39.2	39.1	39.3	39.3	38.4	39.1	38.9
WHOLESALE AND RETAIL TRADE	32.2	32.1	31.9	32.1	32.0	32.3	32.8	32.8	32.2	31.9	31.9	32.2	31.1	31.5	31.5
WHOLESALE TRADE	38.5	38.6	38.5	38.5	38.5	38.6	38.8	38.7	38.5	38.7	38.6	38.7	37.8	38.2	38.1
RETAIL TRADE	30.2	30.1	29.8	30.0	29.9	30.4	30.9	30.9	30.2	29.8	29.8	30.3	29.0	29.5	29.4
FINANCE, INSURANCE, AND REAL ESTATE	36.2	36.3	36.4	36.3	36.1	36.1	36.3	36.3	36.0	36.2	36.2	36.2	36.2	36.3	36.2
SERVICES	32.6	32.6	32.6	32.6	32.5	32.7	33.0	32.9	32.4	32.5	32.5	32.6	32.3	32.5	32.4

14. Weekly hours, by industry division and major manufacturing group, seasonally adjusted

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	1981										1982		
	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.ᵖ	Mar.ᵖ
TOTAL PRIVATE	35.3	35.4	35.3	35.2	35.3	35.2	34.9	35.0	35.0	34.9	34.2	35.0	34.8
MANUFACTURING	39.9	40.2	40.3	40.1	40.0	40.0	39.3	39.5	39.3	39.0	37.3	38.5	39.0
Overtime hours	2.8	2.9	3.2	3.0	3.0	3.0	2.7	2.7	2.5	2.4	2.3	2.4	2.3
Durable goods	40.4	40.8	40.8	40.5	40.5	40.5	39.7	39.9	39.7	39.3	37.9	39.8	39.4
Overtime hours	2.9	3.0	3.2	3.0	3.0	3.0	2.6	2.8	2.4	2.4	2.2	2.2	2.1
Lumber and wood products	39.1	39.6	39.8	39.0	38.8	38.6	37.3	37.6	37.5	37.6	34.6	37.9	37.3
Furniture and fixtures	38.6	38.8	39.0	38.9	38.5	38.6	37.5	38.1	37.7	37.7	32.6	37.6	37.0
Stone, clay, and glass products	40.7	41.2	41.0	40.8	40.9	40.8	40.3	40.0	40.0	39.5	38.3	40.1	39.5
Primary metal industries	41.0	41.2	41.0	40.8	40.5	40.7	40.6	39.8	39.7	39.2	38.4	39.5	39.0
Fabricated metal products	40.4	40.9	40.9	40.7	40.5	40.5	39.5	40.0	39.6	39.2	37.9	39.7	39.3
Machinery, except electrical	40.9	41.3	41.4	41.1	41.1	41.2	40.3	40.7	40.6	40.3	39.0	40.6	40.0
Electric and electronic equipment	40.0	40.2	40.4	40.2	40.5	40.4	39.6	39.9	39.3	39.2	38.1	39.8	39.5
Transportation equipment	40.9	42.0	41.8	41.4	41.2	41.3	39.9	40.5	40.3	39.4	38.7	40.8	40.3
Instruments and related products	40.5	40.1	40.4	40.4	40.5	40.8	40.5	40.4	40.3	39.9	38.6	40.0	40.3
Miscellaneous manufacturing	38.7	38.9	39.2	39.1	39.2	39.1	38.4	39.0	39.0	38.4	36.9	38.7	38.5
Nondurable goods	39.2	39.3	39.6	39.4	39.3	39.3	38.9	39.0	38.8	38.6	36.4	39.0	38.5
Overtime hours	2.8	2.9	3.1	3.0	2.9	2.9	2.8	2.8	2.7	2.4	2.4	2.6	2.5
Food and kindred products	39.7	40.1	40.0	39.8	39.4	39.4	39.2	39.5	39.6	39.8	39.1	40.3	39.9
Textile mill products	39.9	39.8	40.5	40.2	40.4	40.3	38.9	39.3	38.8	37.8	31.3	38.0	37.5
Apparel and other textile products	35.7	35.5	36.0	36.1	35.9	36.1	35.2	35.7	35.6	35.1	30.7	35.5	34.9
Paper and allied products	42.4	42.6	42.8	42.7	42.7	42.7	43.1	42.4	41.9	41.8	41.2	42.3	41.7
Printing and publishing	37.1	37.3	37.6	37.4	37.3	37.3	37.1	37.1	36.9	37.2	36.5	37.5	37.2
Chemicals and allied products	41.5	41.5	41.7	41.7	41.8	41.7	42.3	41.5	41.3	41.3	40.8	41.3	40.8
Petroleum and coal products	43.5	44.1	43.8	43.4	43.1	42.8	43.3	42.1	42.3	42.6	44.3	43.8	43.0
Rubber and miscellaneous plastics products	40.5	40.7	41.3	41.0	40.5	40.6	39.6	40.0	39.6	39.4	37.8	40.1	38.8
Leather and leather products	37.1	36.6	37.1	37.1	36.5	36.9	36.1	36.8	36.7	36.1	33.6	35.6	35.8
WHOLESALE AND RETAIL TRADE	32.2	32.3	32.1	32.1	32.2	32.1	32.1	31.9	32.0	31.9	31.6	32.0	31.8
WHOLESALE TRADE	38.6	38.6	38.5	38.5	38.7	38.6	38.5	38.5	38.6	38.4	38.0	38.5	38.2
RETAIL TRADE	30.2	30.3	30.1	30.1	30.1	30.1	30.1	29.9	29.9	29.9	29.6	30.0	29.8
SERVICES	32.8	32.8	32.7	32.5	32.5	32.4	32.4	32.5	32.6	32.7	32.5	32.7	32.6

NOTE: The industry divisions of mining; construction; tobacco manufactures (a major manufacturing group, nondurable goods); transportation and public utilities; and finance, insurance, and real estate are no longer shown. This is because the seasonal component in these is small relative to the trend-cycle, or irregular components, or both, and consequently cannot be precisely separated.

15. Hourly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981										1982		
	1980	1981	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.[p]	Mar.[p]
TOTAL PRIVATE	$6.66	$7.25	$7.10	$7.13	$7.17	$7.20	$7.24	$7.30	$7.40	$7.42	$7.46	$7.45	$7.55	$7.54	$7.55
MINING	9.17	10.06	9.85	9.70	9.66	9.94	10.11	10.15	10.29	10.28	10.42	10.43	10.66	10.63	10.61
CONSTRUCTION	9.92	10.75	10.44	10.43	10.53	10.60	10.74	10.87	11.02	11.10	11.12	11.19	11.56	11.27	11.27
MANUFACTURING	7.27	7.98	7.80	7.88	7.92	7.97	8.02	8.02	8.15	8.15	8.20	8.26	8.41	8.33	8.37
Durable goods	7.75	8.52	8.32	8.40	8.45	8.52	8.55	8.57	8.68	8.71	8.75	8.81	[illegible]	8.89	8.93
Lumber and wood products	6.53	7.00	6.79	6.83	6.92	7.10	7.16	7.13	7.15	7.09	7.15	7.17	7.40	7.27	7.27
Furniture and fixtures	5.49	5.90	5.76	5.78	5.83	5.89	5.91	5.96	6.00	6.05	6.04	6.11	6.27	6.17	6.21
Stone, clay, and glass products	7.50	8.27	7.94	8.11	8.20	8.31	8.39	8.41	8.53	8.50	8.54	8.56	8.73	8.65	8.69
Primary metal industries	9.77	10.81	10.52	10.76	10.68	10.76	10.79	10.98	11.22	10.97	11.10	11.09	11.23	11.20	11.28
Fabricated metal products	7.45	8.20	8.01	8.05	8.17	8.23	8.22	8.27	8.34	8.39	8.43	8.53	8.55	8.57	8.63
Machinery, except electrical	8.00	8.83	8.62	8.67	8.75	8.81	8.85	8.86	8.98	9.05	9.10	9.20	9.21	9.22	9.24
Electric and electronic equipment	6.95	7.65	7.47	7.51	7.55	7.60	7.69	7.76	7.79	7.84	7.86	7.93	8.02	8.00	8.06
Transportation equipment	9.32	10.31	10.08	10.14	10.25	10.36	10.35	10.30	10.41	10.65	10.86	10.60	10.72	10.76	10.83
Instruments and related products	6.80	7.44	7.23	7.25	7.31	7.34	7.44	7.56	7.60	7.61	7.70	7.83	7.94	7.96	7.96
Miscellaneous manufacturing	5.47	5.98	5.85	5.91	5.93	5.93	5.98	5.97	6.07	6.06	6.12	6.20	6.31	6.34	6.36
Nondurable goods	6.56	7.19	7.01	7.08	7.11	7.14	7.23	7.24	7.37	7.34	7.39	7.45	7.68	7.55	7.57
Food and kindred products	6.86	7.45	7.29	7.37	7.43	7.43	7.47	7.50	7.58	7.53	7.63	7.69	7.83	7.76	7.79
Tobacco manufactures	7.73	8.82	8.61	8.90	9.03	9.33	r9.43	8.61	8.66	8.58	8.96	8.90	9.15	9.52	9.69
Textile mill products	5.08	5.52	5.36	5.36	5.40	5.42	5.51	5.66	5.69	5.72	5.74	5.72	5.76	5.77	5.77
Apparel and other textile products	4.57	4.98	4.94	4.96	4.98	5.00	4.94	4.98	5.06	5.07	5.06	5.05	5.20	5.14	5.15
Paper and allied products	7.84	8.60	8.30	8.37	8.42	8.55	8.73	8.67	8.95	8.82	8.80	8.96	9.07	9.00	9.04
Printing and publishing	7.53	8.20	8.02	8.04	8.10	8.13	8.22	8.27	8.40	8.42	8.44	8.50	8.61	8.60	8.62
Chemicals and allied products	8.30	9.12	8.84	8.94	8.99	9.07	9.16	9.19	9.38	9.37	9.42	9.52	9.68	9.65	9.64
Petroleum and coal products	10.09	11.37	11.23	11.40	11.28	11.29	11.41	11.31	11.53	11.46	11.57	11.58	11.90	12.06	11.93
Rubber and miscellaneous plastics products	6.56	7.25	7.07	7.15	7.22	7.23	7.28	7.32	7.38	7.39	7.41	7.48	7.62	7.59	7.60
Leather and leather products	4.56	4.99	4.90	4.93	4.95	4.98	4.96	4.97	5.08	5.09	5.10	5.14	5.18	5.21	5.22
TRANSPORTATION AND PUBLIC UTILITIES	8.87	9.72	9.42	9.54	9.59	9.63	9.69	9.89	9.97	9.96	10.07	10.08	10.15	10.16	10.14
WHOLESALE AND RETAIL TRADE	5.48	5.93	5.85	5.87	5.89	5.89	5.91	5.94	6.04	6.00	6.03	6.01	6.17	6.15	6.15
WHOLESALE TRADE	6.96	7.58	7.42	7.47	7.51	7.51	7.59	7.67	7.71	7.74	7.81	7.83	7.95	7.93	7.96
RETAIL TRADE	4.88	5.26	5.20	5.22	5.23	5.23	5.24	5.26	5.37	5.29	5.32	5.32	5.44	5.42	5.42
FINANCE, INSURANCE, AND REAL ESTATE	5.78	6.30	6.19	6.20	6.24	6.24	6.27	6.37	6.38	6.42	6.51	6.46	6.57	6.62	6.64
SERVICES	5.85	6.41	6.29	6.30	6.33	6.33	6.34	6.41	6.51	6.57	6.67	6.66	6.79	6.80	6.80

16. Hourly Earnings Index for production or nonsupervisory workers on private nonagricultural payrolls, by industry division

[Seasonally adjusted data: 1977=100]

Industry	1981										1982			Feb. 1982 to Mar. 1982	Mar. 1981 to Mar. 1982[1]
	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.[p]	Mar.[p]		
TOTAL PRIVATE (in current dollars)	135.8	136.7	137.7	138.4	139.0	140.7	141.5	141.5	143.2	143.5	145.1	145.2	145.8	.5	7.4
Mining[2]	144.0	145.7	145.6	147.2	148.9	149.4	151.5	151.3	153.3	153.2	156.0	155.8	156.2	.2	8.4
Construction	128.6	129.0	129.4	130.4	131.8	132.5	132.9	134.3	135.4	136.2	140.8	138.0	138.0	(3)	7.3
Manufacturing	138.5	139.9	140.7	141.6	142.5	143.6	144.8	145.5	146.4	147.0	149.0	149.1	150.0	.6	8.3
Transportation and public utilities	136.1	137.3	138.9	139.8	139.3	141.8	141.7	142.0	144.0	144.4	145.8	146.3	147.2	.6	8.1
Wholesale and retail trade	135.8	136.4	137.4	137.8	138.4	140.0	141.2	140.5	141.5	141.9	142.3	142.7	143.1	.3	5.4
Finance, insurance, and real estate	136.0	135.4	136.8	137.1	137.4	140.4	140.3	140.9	143.2	141.8	143.4	143.8	145.7	1.3	7.1
Services	134.0	134.8	136.0	136.6	136.9	139.4	139.8	140.7	142.6	142.7	143.6	144.1	144.6	.4	7.9
TOTAL PRIVATE (in constant dollars)	92.8	93.1	r93.1	r92.0	92.2	r92.6	92.1	92.0	92.5	r92.3	93.1	92.9	(4)	(4)	(4)

[1] Over-the-year percent change before seasonal adjustment.

[2] This series is not seasonally adjusted because the seasonal component is small relative to the trend-cycle, irregular components, or both, and consequently cannot be separated with sufficient precision.

[3] Less than 0.05 percent.

[4] Not available.

r = revised.

17. Weekly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981											1982	
	1980	1981	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. p	Mar. p
TOTAL PRIVATE:															
Current dollars	$235.10	$255.20	$249.92	$250.98	$252.38	$254.88	$257.74	$259.88	$259.00	$260.44	$261.85	$262.24	$255.95	$261.64	$261.90
Constant (1977) dollars	172.74	170.13	171.06	170.73	170.18	170.49	170.35	170.64	168.40	168.01	168.46	168.30	164.70	167.83	(1)
MINING	396.14	438.62	416.66	422.92	423.98	418.47	439.79	447.62	450.70	457.46	461.61	466.22	457.10	463.47	465.78
CONSTRUCTION	367.04	385.60	388.37	384.87	388.56	394.32	404.90	405.45	393.41	416.25	411.44	414.03	383.79	401.21	413.61
MANUFACTURING															
Current dollars	288.62	317.60	311.22	312.84	317.59	320.39	317.59	319.20	321.93	323.56	324.72	329.57	312.01	326.54	327.27
Constant (1977) dollars	212.06	211.73	213.02	212.82	214.15	214.31	209.91	209.50	209.32	209.97	210.17	212.76	200.78	209.45	(1)
Durable goods	310.78	342.50	336.96	338.52	343.07	345.91	341.15	344.51	345.46	349.27	350.00	355.92	335.91	351.65	352.74
Lumber and wood products	252.06	270.90	264.81	267.05	274.03	280.45	277.08	278.07	270.99	270.84	266.84	273.18	249.38	271.17	270.44
Furniture and fixtures	209.17	226.56	223.49	220.80	224.46	229.12	223.40	230.83	226.20	233.53	230.12	237.68	202.52	230.76	231.01
Stone, clay, and glass products	306.00	335.76	322.36	331.70	337.02	342.37	342.31	344.81	346.32	344.25	345.87	343.26	326.50	338.22	342.39
Primary metal industries	391.78	437.81	432.37	443.31	436.81	440.08	434.84	442.90	457.78	434.41	440.67	439.16	431.23	442.40	441.05
Fabricated metal products	300.98	330.46	325.21	323.61	332.52	335.78	327.98	333.28	330.26	336.44	337.20	344.61	323.19	338.52	340.89
Machinery except electrical	328.00	361.15	355.14	353.74	360.50	362.08	357.54	360.60	362.79	367.43	372.19	381.80	360.11	374.33	372.37
Electric and electronic equipment	276.61	305.24	300.29	298.90	302.76	305.52	305.29	310.40	309.26	312.82	312.83	319.58	305.56	318.40	319.59
Transportation equipment	378.39	421.68	414.29	415.74	426.40	427.87	421.25	417.15	415.36	435.59	434.93	442.57	411.65	434.70	437.53
Instruments and related products	275.40	300.58	293.54	289.28	294.59	296.54	295.86	305.42	307.04	307.44	314.16	318.68	306.48	318.40	321.58
Miscellaneous manufacturing	211.69	232.62	227.57	228.13	230.68	231.27	230.23	232.83	234.91	238.16	241.74	242.42	231.58	244.09	246.13
Nondurable goods	255.84	281.85	274.09	275.41	280.13	282.03	282.69	285.26	286.17	286.99	288.95	292.04	278.02	291.43	290.69
Food and kindred products	272.34	295.77	285.77	289.64	295.71	295.71	295.81	300.00	301.68	298.19	304.44	310.68	303.80	308.07	306.15
Tobacco manufactures	294.51	342.22	320.29	331.08	348.56	359.21	364.00	350.43	348.13	338.05	347.65	339.09	330.32	364.62	359.50
Textile mill products	203.71	219.14	214.94	211.18	217.62	218.97	218.75	226.40	221.34	225.37	225.01	220.79	179.71	219.26	217.53
Apparel and other textile products	161.78	177.79	176.85	174.59	179.28	182.00	177.84	180.77	178.11	181.51	181.15	179.28	156.00	181.44	180.25
Paper and allied products	331.63	365.50	351.92	354.05	357.85	365.09	370.15	368.48	386.64	373.97	376.05	382.59	374.59	378.90	376.97
Printing and publishing	279.36	305.86	297.54	297.48	302.13	302.44	305.78	310.13	314.16	313.22	314.81	322.15	311.68	319.06	320.66
Chemicals and allied products	344.45	379.39	367.74	371.90	373.98	377.31	380.14	380.47	395.84	388.86	392.81	397.94	394.94	397.58	394.28
Petroleum and coal products	421.76	491.18	478.40	500.46	491.81	491.12	498.62	486.33	511.93	493.93	497.51	493.31	512.89	512.55	502.25
Rubber and miscellaneous plastics products	263.06	292.90	287.75	288.86	295.30	295.71	291.20	295.73	293.72	297.08	295.66	299.95	288.80	303.60	304.00
Leather and leather products	168.09	183.63	180.32	178.96	185.13	189.74	181.54	183.39	182.88	186.80	186.66	187.10	172.49	184.43	185.31
TRANSPORTATION AND PUBLIC UTILITIES	351.25	382.97	371.15	374.92	376.89	383.27	385.06	390.66	390.82	389.44	395.75	396.14	389.76	397.26	394.45
WHOLESALE AND RETAIL TRADE	176.46	190.35	186.62	188.43	188.48	190.25	193.85	194.83	194.49	191.40	192.36	193.52	191.89	193.73	193.73
WHOLESALE TRADE	267.96	292.50	285.67	287.60	289.14	289.89	294.49	296.83	296.84	299.54	301.47	303.02	300.51	302.93	303.28
RETAIL TRADE	147.38	158.33	154.96	156.60	156.38	158.99	161.92	162.53	162.17	157.64	158.54	161.20	157.76	159.89	159.35
FINANCE, INSURANCE, AND REAL ESTATE	209.24	228.69	225.32	225.06	225.26	225.26	227.60	231.23	229.68	232.40	235.66	233.85	237.83	240.31	240.37
SERVICES	190.71	208.97	205.05	205.38	206.73	206.99	209.22	210.89	210.92	213.53	216.78	217.12	219.32	221.00	220.32

[1] Not available.

NOTE: In the April issue, the 1981 annual average and data for November 1981 through February 1982 from "Durable goods" forward were erroneously aligned.

UNEMPLOYMENT INSURANCE DATA

NATIONAL UNEMPLOYMENT INSURANCE DATA are compiled monthly by the Employment and Training Administration of the U.S. Department of Labor from monthly reports of unemployment insurance activity prepared by State agencies. Railroad unemployment insurance data are prepared by the U.S. Railroad Retirement Board.

Definitions

Data for **all programs** represent an unduplicated count of insured unemployment under State programs, Unemployment Compensation for Ex-Servicemen, and Unemployment Compensation for Federal Employees, and the Railroad Insurance Act.

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

An **application** for benefits is filed by a railroad worker at the beginning of his first period of unemployment in a benefit year; no application is required for subsequent periods in the same year. **Number of payments** are payments made in 14-day registration periods. The **average amount of benefit payment** is an average for all compensable periods, not adjusted for recovery of overpayments or settlement of underpayments. However, **total benefits** paid have been adjusted.

18. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1981											1982	
	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.p
All programs:													
Insured unemployment	4,264	3,948	3,453	3,111	2,949	3,012	2,874	2,680	2,753	3,228	3,935	4,681	4,723
State unemployment insurance program:[1]													
Initial claims[2]	1,806	1,884	1,647	1,417	1,741	2,114	1,610	1,681	1,996	c2,286	3,272	3,328	2,328
Insured unemployment (average weekly volume)	3,669	3,382	2,988	2,691	2,596	2,743	2,656	2,488	2,582	3,061	3,778	4,470	4,376
Rate of insured unemployment	4.2	3.9	3.4	3.1	3.0	3.1	3.0	2.9	3.0	3.5	4.3	5.1	5.0
Weeks of unemployment compensated	12,882	13,504	11,871	9,790	9,928	10,4[illegible]	9,594	9,565	9,424	10,052	14,592	15,962	15,618
Average weekly benefit amount for total unemployment	$101.89	$105.63	$105.96	$105.49	$99.02	$103.47	$105.94	$107.39	$108.92	$110.52	$112.83	$114.83	$116.31
Total benefits paid	$1,313,507	$1,393,612	$1,226,815	$1,006,341	$1,012,764	$1,061,899	$1,004,864	$1,001,020	$997,757	$1,080,810	$1,592,546	$1,764,206	$1,771,937
Unemployment compensation for ex-servicemen:[3]													
Initial claims[1]	17	18	16	15	19	22	19	15	11	9	11	8	8
Insured unemployment (average weekly volume)	54	51	46	43	42	44	44	34	26	22	19	16	13
Weeks of unemployment compensated	221	234	214	183	192	203	190	153	116	91	93	65	50
Total benefits paid	$22,517	$24,668	$23,048	$19,965	$21,145	$22,785	$21,425	$17,144	$12,952	$10,043	$10,155	$7,098	$5,362
Unemployment compensation for Federal civilian employees:[4]													
Initial claims	13	12	12	11	13	15	17	18	20	16	17	17	12
Insured unemployment (average weekly volume)	40	36	31	27	25	25	25	29	32	36	39	40	40
Weeks of unemployment compensated	148	156	135	107	105	105	102	100	112	127	174	162	154
Total benefits paid	$14,573	$15,561	$13,701	$11,023	$10,705	$10,805	$9,543	$10,495	$11,719	$13,491	$18,801	$18,040	$17,510
Railroad unemployment insurance:													
Applications	5	5	6	6	26	41	13	15	21	13	19	22	11
Insured unemployment (average weekly volume)	50	44	41	35	30	28	29	34	40	44	54	75	68
Number of payments	104	115	94	79	86	32	63	74	86	83	117	153	140
Average amount of benefit payment	$214.56	$214.93	$201.12	$199.43	$201.06	$199.63	$202.53	$207.98	$197.26	$207.08	$212.33	$213.39	$214.07
Total benefits paid	$22,049	$23,233	$19,239	$15,428	$16,206	$11,541	$7,071	15,046	15,994	$16,377	$25,292	$30,544	$28,011
Employment service:[5]													
New applications and renewals	....	8,778	....	....	12,868	....	....	16,502	....	....	p3,363	....	
Nonfarm placements	....	1,595	....	....	2,446	....	....	3,509	....	....	p602	....	

[1] Initial claims and State insured unemployment include data under the program for Puerto Rican sugarcane workers.

[2] Includes interstate claims for the Virgin Islands. Excludes transition claims under State programs.

[3] Excludes data on claims and payments made jointly with other programs.

[4] Excludes data on claims and payments made jointly with State programs.

[5] Cumulative total for fiscal year (October 1-September 30). Data computed quarterly.

NOTE: Data for Puerto Rico and the Virgin Islands included. Dashes indicate data not available.

c = corrected.

PRICE DATA

PRICE DATA are gathered by the Bureau of Labor Statistics from retail and primary markets in the United States. Price indexes are given in relation to a base period (1967 = 100, unless otherwise noted).

Definitions

The **Consumer Price Index** is a monthly statistical measure of the average change in prices in a fixed market basket of goods and services. Effective with the January 1978 index, the Bureau of Labor Statistics began publishing CPI's for two groups of the population. One index, a new CPI for All Urban Consumers, covers 80 percent of the total noninstitutional population; and the other index, a revised CPI for Urban Wage Earners and Clerical Workers, covers about half the new index population. The All Urban Consumers index includes, in addition to wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctor's and dentist's fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items is kept essentially unchanged between major revisions so that only price changes will be measured. Prices are collected from over 18,000 tenants, 24,000 retail establishments, and 18,000 housing units for property taxes in 85 urban areas across the country. All taxes directly associated with the purchase and use of items are included in the index. Because the CPI's are based on the expenditures of two population groups in 1972–73, they may not accurately reflect the experience of individual families and single persons with different buying habits.

Though the CPI is often called the "Cost-of-Living Index," it measures only price change, which is just one of several important factors affecting living costs. Area indexes do not measure differences in the level of prices among cities. They only measure the average change in prices for each area since the base period.

Producer Price Indexes measure average changes in prices received in primary markets of the United States by producers of commodities in all stages of processing. The sample used for calculating these indexes contains about 2,800 commodities and about 10,000 quotations per month selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The universe includes all commodities produced or imported for sale in commercial transactions in primary markets in the United States.

Producer Price Indexes can be organized by stage of processing or by commodity. The stage of processing structure organizes products by degree of fabrication (that is, finished goods, intermediate or semifinished goods, and crude materials). The commodity structure organizes products by similarity of end-use or material composition.

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States, from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire. Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

In calculating Producer Price Indexes, price changes for the various commodities are averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1972. The detailed data are aggregated to obtain indexes for stage of processing groupings, commodity groupings, durability of product groupings, and a number of special composite groupings.

Price indexes for the output of selected SIC industries measure average price changes in commodities produced by particular industries, as defined in the *Standard Industrial Classification Manual 1972* (Washington, U.S. Office of Management and Budget, 1972). These indexes are derived from several price series, combined to match the economic activity of the specified industry and weighted by the value of shipments in the industry. They use data from comprehensive industrial censuses conducted by the U.S. Bureau of the Census and the U.S. Department of Agriculture.

Notes on the data

Beginning with the May 1978 issue of the *Review*, regional CPI's cross classified by population size, were introduced. These indexes will enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes will be published bimonthly. (See table 21.)

For further details about the new and the revised indexes and a comparison of various aspects of these indexes with the old unrevised CPI, see *Facts About the Revised Consumer Price Index*, a pamphlet in the Consumer Price Index Revision 1978 series. See also *The Consumer Price Index: Concepts and Content Over the Years*, Report 517, revised edition (Bureau of Labor Statistics, May 1978).

For interarea comparisons of living costs at three hypothetical standards of living, see the family budget data published in the *Handbook of Labor Statistics, 1977*, Bulletin 1966 (Bureau of Labor Statistics, 1977), tables 122–133. Additional data and analysis on price changes are provided in the *CPI Detailed Report* and *Producer Prices and Price Indexes*, both monthly publications of the Bureau.

As of January 1976, the Wholesale Price Index (as it was then called) incorporated a revised weighting structure reflecting 1972 values of shipments. From January 1967 through December 1975, 1963 values of shipments were used as weights.

For a discussion of the general method of computing consumer, producer, and industry price indexes, see *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976), chapters 13–15. See also John F. Early, "Improving the measurement of producer price change," *Monthly Labor Review*, April 1978, pp. 7–15. For industry prices, see also Bennett R. Moss, "Industry and Sector Price Indexes," *Monthly Labor Review*, August 1965, pp. 974–82.

19. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967–81

[1967 = 100]

Year	All items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.9	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	116.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.2	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	6.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	267.2	11.3	203.7	8.5	213.6	8.8
1981	272.3	10.2	267.8	7.7	293.2	11.4	186.6	5.2	281.3	12.3	295.1	10.4	219.0	7.5	233.3	9.2

20. Consumer Price Index for All Urban Consumers and revised CPI for Urban Wage Earners and Clerical Workers, U.S. city average—general summary and groups, subgroups, and selected items

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981					1982		1981					1982	
	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
All items	263.2	297.3	279.9	280.7	281.5	282.5	283.4	263.5	279.1	279.7	280.4	281.1	282.1	282.9
Food and beverages	263.7	270.7	270.3	269.9	270.5	273.6	275.8	264.3	271.0	270.7	270.3	270.8	273.9	276.0
Housing	280.9	303.7	303.5	304.2	305.2	306.1	307.3	280.7	303.6	303.3	303.8	304.7	305.6	306.7
Apparel and upkeep	182.0	190.7	191.5	191.3	190.5	187.3	188.0	181.8	190.5	190.6	190.5	189.4	186.5	187.3
Transportation	270.9	285.2	287.2	289.1	289.8	289.9	288.0	272.1	286.6	288.9	290.8	291.5	291.6	289.6
Medical care	282.6	301.7	304.8	308.2	310.2	313.4	316.2	284.4	300.9	304.0	307.1	309.1	312.0	314.9
Entertainment	216.7	224.0	225.5	226.8	227.3	229.2	231.2	215.0	221.5	223.4	224.3	224.4	226.1	228.1
Other goods and services	227.4	243.0	245.2	245.9	246.7	248.4	250.3	225.6	239.3	241.4	242.5	243.5	245.0	247.1
Commodities	248.3	257.7	257.9	258.0	258.4	258.8	259.5	248.8	258.2	258.4	258.5	258.6	259.3	259.9
Commodities less food and beverages	237.4	247.6	248.0	248.3	248.7	248.0	248.1	237.9	248.4	248.7	249.1	249.3	248.7	248.6
Nondurables less food and beverages	258.6	265.8	266.4	266.7	266.7	265.6	265.3	261.4	268.5	268.6	269.0	268.9	267.8	267.5
Durables	220.3	232.6	232.9	233.2	233.7	233.4	233.7	218.6	231.5	232.0	232.3	232.7	232.4	232.5
Services	290.1	317.3	318.6	320.6	321.8	323.9	325.3	290.8	317.7	319.2	321.1	322.4	324.3	325.5
Rent, residential	201.9	211.9	213.6	215.0	216.5	217.8	218.6	201.6	211.5	213.2	214.5	216.0	217.4	218.1
Household services less rent	345.4	387.4	387.2	389.2	390.4	392.4	393.7	348.5	392.2	391.8	393.6	394.8	396.5	397.7
Transportation services	260.5	277.7	281.0	283.2	284.2	286.6	287.6	259.7	276.3	279.9	282.3	283.6	285.9	286.7
Medical care services	305.2	326.1	329.7	333.7	335.7	339.4	342.4	307.4	324.7	328.3	332.0	334.0	337.5	340.6
Other services	232.3	245.8	247.8	248.7	249.5	251.7	253.0	232.1	243.6	246.6	247.2	248.0	250.0	251.3
Special indexes:														
All items less food	260.4	278.2	279.0	280.1	280.8	281.4	282.1	260.8	278.2	279.1	280.1	280.7	281.3	281.7
All items less mortgage interest costs	250.6	262.9	263.6	264.2	264.9	266.1	267.1	251.4	263.3	264.0	264.6	265.2	266.4	267.2
Commodities less food	235.4	245.5	245.9	246.2	246.5	245.9	246.0	236.0	246.3	246.6	247.0	247.2	246.6	246.6
Nondurables less food	253.2	260.3	260.7	261.1	261.1	260.2	260.1	255.9	262.9	263.0	263.4	263.3	262.4	262.2
Nondurables less food and apparel	292.4	299.1	299.5	300.1	300.7	301.0	300.5	294.7	301.3	301.5	302.0	302.5	302.6	302.0
Nondurables	262.3	269.5	269.5	269.5	269.8	270.8	271.7	263.8	270.7	270.7	270.7	270.9	271.9	272.8
Services less rent	306.9	337.5	338.7	340.8	342.0	344.2	345.7	307.9	338.3	339.7	341.6	342.9	345.0	346.3
Services less medical care	286.5	314.1	315.1	316.9	318.1	320.0	321.1	287.0	314.6	315.8	317.5	318.7	320.5	321.6
Domestically produced farm foods	254.0	260.8	259.5	258.3	259.1	262.4	265.1	253.9	259.9	258.6	257.8	258.2	261.4	264.0
Selected beef cuts	273.0	277.9	275.5	271.9	270.7	269.6	271.7	275.1	279.7	276.5	273.2	271.9	271.1	273.1
Energy	401.1	417.1	414.9	414.1	414.6	416.4	413.0	405.4	420.1	417.9	417.3	417.6	419.0	415.4
All items less energy	252.5	268.6	269.4	270.4	271.1	272.1	273.4	251.8	267.5	268.3	269.2	269.9	270.9	272.1
All items less food and energy	246.8	264.8	265.9	267.2	267.9	268.5	269.5	245.8	263.6	264.8	265.9	266.6	267.1	268.0
Commodities less food and energy	211.7	222.9	223.4	223.8	224.2	223.7	224.5	210.5	222.1	222.6	223.0	223.3	222.8	223.6
Energy commodities	449.0	449.3	448.2	448.2	448.0	446.4	440.1	450.1	450.0	448.9	449.0	448.7	447.0	440.7
Services less energy	287.6	313.6	315.3	317.7	318.9	320.5	321.9	288.4	314.0	316.0	318.2	319.5	321.0	322.2
Purchasing power of the consumer dollar, 1967 = $1	$0.380	$0.358	$0.357	$0.356	$0.355	$0.354	$0.353	$0.380	$0.358	$0.358	$0.357	$0.356	$0.354	$0.353

20. Continued—Consumer Price Index—U.S. city average

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981					1982		1981					1982	
	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
FOOD AND BEVERAGES	263.7	270.7	270.3	269.9	270.5	273.6	275.8	264.3	271.0	270.7	270.3	270.8	273.9	276.0
Food	270.8	278.0	277.6	277.1	277.8	281.0	283.3	271.4	278.1	277.8	277.4	277.9	281.1	283.4
Food at home	267.3	273.2	272.1	271.0	271.7	275.3	278.0	267.0	272.3	271.3	270.4	270.8	274.4	277.0
Cereals and bakery products	265.3	274.3	275.0	276.3	277.7	279.8	280.9	265.0	273.2	274.0	275.5	276.6	278.6	279.8
Cereals and cereal products (12/77 = 100)	144.5	150.1	150.0	149.9	151.5	153.0	154.0	145.5	151.2	151.5	152.1	152.5	153.9	155.0
Flour and prepared flour mixes (12/77 = 100)	137.5	138.5	139.3	138.4	137.8	139.1	139.1	137.9	141.1	140.9	140.2	138.4	139.6	139.6
Cereal (12/77 = 100)	146.5	155.7	156.1	157.4	160.2	163.1	164.8	148.0	157.2	157.9	158.9	162.1	165.1	166.8
Rice, pasta, and cornmeal (12/77 = 100)	147.9	151.6	151.1	149.6	151.7	151.1	152.4	149.3	152.6	152.7	153.9	152.9	152.4	153.6
Bakery products (12/77 = 100)	139.0	143.5	144.0	144.9	145.4	146.4	146.8	138.5	142.4	142.8	143.7	144.3	145.3	145.7
White bread	231.4	238.2	238.4	241.3	241.5	243.3	243.8	230.9	235.9	235.5	237.6	237.4	239.4	240.0
Other breads (12/77 = 100)	137.3	141.5	141.6	142.8	143.4	143.9	143.7	140.1	143.4	143.6	144.9	145.3	145.7	145.5
Fresh biscuits, rolls, and muffins (12/77 = 100)	138.9	143.3	144.8	145.2	145.9	146.5	146.4	136.9	140.1	141.7	141.9	141.9	142.5	142.8
Fresh cakes and cupcakes (12/77 = 100)	139.5	144.4	143.9	145.0	144.9	147.2	147.0	138.1	142.3	141.7	143.2	143.7	145.8	145.8
Cookies (12/77 = 100)	139.0	143.9	145.7	146.3	147.6	148.1	149.2	139.8	144.6	146.4	146.8	148.4	148.9	150.1
Crackers, bread, and cracker products (12/77 = 100)	128.6	132.0	133.2	133.1	134.2	133.4	135.4	128.6	132.2	134.0	133.4	135.6	134.7	136.8
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	140.4	144.3	144.4	144.8	145.4	146.2	147.0	140.0	144.8	144.9	145.8	147.8	146.9	149.3
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	141.4	148.0	148.9	149.2	149.3	151.2	151.5	136.3	142.1	142.8	143.1	143.0	144.7	144.8
Meats, poultry, fish, and eggs	252.5	257.7	256.4	254.2	253.7	253.7	256.8	251.6	257.5	256.0	254.0	253.1	253.3	256.4
Meats, poultry, and fish	257.9	263.4	262.2	259.2	258.4	259.1	261.2	257.0	263.2	261.7	258.8	257.7	258.6	260.7
Meats	256.4	263.4	262.5	259.6	258.7	257.8	260.2	256.0	263.3	262.1	259.3	257.9	257.3	259.7
Beef and veal	272.3	277.1	274.9	271.5	270.5	269.4	271.5	273.8	278.3	275.3	272.2	270.9	270.1	272.2
Ground beef other than canned	272.8	270.3	267.4	266.1	264.5	262.2	265.0	275.7	273.8	268.6	268.0	265.8	263.7	266.3
Chuck roast	288.1	289.4	287.8	282.6	282.2	279.6	285.8	288.6	289.9	287.2	282.6	281.5	280.5	285.0
Round roast	248.0	244.1	245.1	245.0	242.6	241.6	245.3	247.5	249.1	250.1	248.2	245.9	244.7	248.9
Round steak	259.0	255.9	258.0	256.7	254.6	257.5	256.1	254.7	252.5	254.9	254.8	252.2	256.1	254.4
Sirloin steak	262.0	281.9	273.3	262.0	260.1	258.2	257.1	263.5	281.9	275.1	260.7	260.7	258.9	257.8
Other beef and veal (12/77 = 100)	157.7	164.9	163.4	161.1	161.0	160.9	161.4	156.9	162.8	161.3	159.2	159.1	159.3	159.7
Pork	223.6	238.1	236.6	235.6	234.3	234.7	238.9	223.2	239.4	239.3	235.9	233.8	234.4	238.5
Bacon	221.7	237.1	240.1	238.1	237.2	235.5	245.6	225.7	241.1	245.1	242.9	240.5	239.3	249.3
Chops	210.3	225.1	223.1	217.0	212.4	219.2	222.1	207.6	224.7	221.3	216.2	211.0	217.6	220.2
Ham other than canned (12/77 = 100)	100.0	106.8	109.4	108.9	109.1	107.3	107.0	98.2	105.6	107.5	106.6	106.3	104.8	104.7
Sausage	282.3	300.7	298.7	298.1	299.1	297.6	300.0	282.0	302.3	302.1	299.2	300.0	298.8	301.0
Canned ham	238.0	239.5	241.9	243.1	244.3	245.4	246.1	240.6	242.9	244.7	247.0	247.7	249.0	249.8
Other pork (12/77 = 100)	125.4	135.4	134.1	131.1	130.0	129.5	133.8	125.0	136.7	134.5	130.9	129.2	128.8	133.1
Other meats	260.8	260.7	261.6	260.5	260.6	258.1	258.1	259.1	258.7	260.5	259.9	259.7	257.3	257.4
Frankfurters	259.4	256.4	261.2	259.9	261.0	256.7	258.0	261.0	259.1	262.4	260.9	260.0	256.1	257.1
Bologna, liverwurst, and salami (12/77 = 100)	149.4	147.5	147.6	146.7	146.4	145.4	146.1	146.0	144.8	148.9	145.9	146.3	145.4	146.2
Other lunchmeats (12/77 = 100)	129.8	131.8	131.8	132.1	132.6	132.2	131.7	128.6	129.5	130.2	130.6	130.6	130.2	129.7
Lamb and organ meats (12/77 = 100)	144.1	144.4	143.4	141.7	140.7	138.6	137.7	146.5	146.0	145.0	144.6	143.9	141.4	141.0
Poultry	203.7	199.7	196.6	192.3	191.7	194.2	195.7	201.3	198.1	194.7	190.6	189.5	192.4	193.8
Fresh whole chicken	207.0	197.3	194.0	190.9	190.1	193.1	198.3	201.7	194.0	189.9	188.5	187.8	190.9	194.4
Fresh and frozen chicken parts (12/77 = 100)	131.9	130.5	129.2	127.3	128.1	128.5	128.9	131.9	130.1	129.7	126.5	126.3	126.9	127.1
Other poultry (12/77 = 100)	128.5	129.9	127.2	122.2	120.7	123.2	123.2	127.8	129.6	126.1	121.5	119.8	123.0	122.6
Fish and seafood	355.0	362.6	360.8	358.9	359.6	373.3	373.8	349.5	358.6	358.2	356.6	358.6	372.4	373.2
Canned fish and seafood (12/77 = 100)	138.0	140.9	140.5	141.5	140.7	140.6	140.9	135.9	139.4	140.3	141.0	140.2	140.0	140.4
Fresh and frozen fish and seafood (12/77 = 100)	133.5	136.5	135.6	133.9	134.7	143.2	143.2	131.4	134.9	134.0	132.7	134.4	143.0	143.2
Eggs	188.2	188.8	185.9	194.7	198.0	189.4	205.1	187.0	189.5	187.2	196.7	198.8	190.6	206.1
Dairy products	242.1	244.3	244.6	245.0	245.5	245.8	246.5	242.5	244.1	244.2	244.7	244.9	245.2	245.8
Fresh milk and cream (12/77 = 100)	134.0	134.7	134.7	134.9	135.2	135.1	135.5	134.1	134.3	134.4	134.6	134.6	134.6	134.9
Fresh whole milk	219.3	220.0	220.2	220.8	221.2	221.2	221.5	219.3	219.4	219.5	220.1	220.2	220.2	220.5
Other fresh milk and cream (12/77 = 100)	134.2	135.4	135.2	134.9	135.3	135.1	135.8	134.4	135.3	135.2	134.9	134.9	134.7	135.5
Processed dairy products (12/77 = 100)	140.8	143.0	143.3	143.5	143.9	144.4	144.8	141.6	143.4	143.6	144.0	144.2	144.7	145.1
Butter	242.2	247.1	247.2	248.0	248.7	249.3	248.9	246.0	249.9	249.7	250.2	251.3	252.0	251.4
Cheese (12/77 = 100)	139.2	140.8	140.9	141.1	141.0	142.0	142.8	139.6	140.9	140.7	141.1	141.3	142.3	143.1
Ice cream and related products (12/77 = 100)	145.9	148.7	149.9	149.3	150.3	150.8	150.0	146.8	149.1	149.9	149.4	149.4	149.9	149.1
Other dairy products (12/77 = 100)	134.5	137.3	137.0	138.7	139.7	138.4	140.0	135.0	137.6	138.1	140.2	140.5	139.1	140.8
Fruits and vegetables	267.3	281.6	275.2	272.0	276.4	294.7	301.5	266.5	276.3	270.8	268.1	272.6	291.3	297.4
Fresh fruits and vegetables	278.1	286.9	273.5	267.8	274.9	308.0	319.6	277.6	278.2	267.2	261.9	269.4	303.1	313.4
Fresh fruits	256.8	306.4	291.4	276.1	269.6	276.7	291.2	254.4	293.7	279.5	266.0	260.5	267.0	280.1
Apples	217.1	262.9	237.0	248.7	261.2	273.0	279.5	218.2	261.8	236.5	249.1	261.2	272.6	279.9
Bananas	256.9	250.7	254.9	249.4	254.9	253.5	251.0	249.4	251.3	253.3	248.3	252.8	251.1	247.9
Oranges	284.9	346.2	328.5	314.0	280.6	283.1	313.1	269.4	314.6	299.9	286.0	252.8	255.1	281.1
Other fresh fruits (12/77 = 100)	135.9	168.4	160.9	144.7	141.0	145.9	154.5	137.9	161.5	154.7	139.7	136.7	141.0	149.0
Fresh vegetables	298.0	288.6	256.8	260.1	279.8	337.3	346.2	298.7	264.4	256.1	258.2	277.6	335.8	343.5
Potatoes	350.2	329.1	290.4	286.3	286.8	288.8	297.4	347.1	316.8	287.7	281.5	280.0	282.7	291.5
Lettuce	220.4	293.5	258.3	257.1	343.1	514.4	408.9	225.6	292.9	257.2	247.4	342.7	515.8	408.0
Tomatoes	312.8	193.9	207.3	206.9	204.6	245.6	288.5	308.6	191.3	206.4	209.7	207.8	248.8	293.2
Other fresh vegetables (12/77 = 100)	163.5	137.9	138.6	145.0	150.4	174.8	199.1	164.8	136.6	140.0	145.8	149.1	173.9	197.2
Processed fruits and vegetables	257.8	278.3	279.4	279.2	280.6	282.7	284.2	256.4	276.7	277.2	277.3	278.4	280.6	282.0
Processed fruits (12/77 = 100)	133.5	143.7	144.9	145.1	145.0	146.4	147.9	133.8	143.7	144.2	144.6	144.5	146.0	147.4
Frozen fruit and fruit juices (12/77 = 100)	127.1	143.6	144.7	144.9	142.3	143.5	147.8	127.1	142.8	143.4	144.1	141.2	142.8	146.6
Fruit juices other than frozen (12/77 = 100)	137.2	147.5	148.4	148.6	149.5	151.4	151.5	137.1	147.8	147.6	147.4	148.3	150.1	150.3
Canned and dried fruits (12/77 = 100)	134.9	139.8	141.2	141.6	142.6	143.6	144.3	135.8	140.1	141.1	141.8	143.0	144.0	144.8
Processed vegetables (12/77 = 100)	125.5	135.9	135.9	135.4	136.9	137.6	137.7	124.4	134.8	134.9	134.7	135.7	136.5	136.6
Frozen vegetables (12/77 = 100)	124.4	135.7	136.9	137.4	139.1	140.7	141.7	124.0	136.6	137.5	139.2	140.2	141.8	143.1

20. Continued—Consumer Price Index—U.S. city average

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981					1982		1981					1982	
	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
FOOD AND BEVERAGES—Continued														
Food—Continued														
Food at home—Continued														
Fruits and vegetables—Continued														
Cut corn and canned beans except lima (12/77=100)	128.2	136.8	137.7	138.3	138.9	138.9	140.7	126.5	135.1	135.5	136.0	136.5	137.5	138.3
Other canned and dried vegetables (12/77=100)	124.7	135.6	134.6	133.1	134.8	135.0	134.1	123.5	133.8	133.3	131.8	133.2	133.5	132.6
Other foods at home	323.0	325.7	326.4	326.0	325.6	328.7	330.7	323.6	326.2	327.1	327.0	326.4	329.6	331.5
Sugar and sweets	385.4	361.4	359.9	359.1	359.3	361.6	364.2	387.7	363.1	360.2	359.0	359.3	361.6	364.1
Candy and chewing gum (12/77=100)	141.1	148.8	148.8	149.3	149.9	150.1	150.0	142.0	147.6	148.7	148.9	149.9	150.0	149.8
Sugar and artificial sweeteners (12/77=100)	217.7	163.0	157.1	155.2	153.4	155.6	160.0	217.9	164.9	158.4	157.0	154.6	157.0	161.3
Other sweets (12/77=100)	137.7	145.3	145.2	144.9	146.1	147.1	146.9	137.3	143.8	144.0	143.1	144.2	145.2	145.1
Fats and oils (12/77=100)	267.3	268.5	268.5	262.2	261.1	261.6	260.5	268.9	267.4	268.1	263.1	261.0	261.5	260.6
Margarine	256.8	256.7	256.6	255.2	255.7	257.8	256.7	258.3	254.5	255.9	254.9	254.9	257.2	256.1
Nondairy substitutes and peanut butter (12/77=100)	171.8	178.5	176.5	163.0	160.1	157.7	157.8	172.7	177.2	175.2	163.0	158.5	156.0	156.3
Other fats, oils, and salad dressings (12/77=100)	131.0	129.6	130.5	129.8	129.7	130.5	129.8	131.4	129.2	130.3	130.4	130.1	131.0	130.2
Nonalcoholic beverages	411.9	413.7	414.8	413.4	412.5	418.7	423.4	413.6	414.7	416.0	415.2	414.2	420.5	425.0
Cola drinks, excluding diet cola	295.3	298.9	301.1	298.8	298.1	302.4	304.6	293.4	295.6	297.7	296.1	295.7	300.0	302.0
Carbonated drinks, including diet cola (12/77=100)	140.1	142.4	142.3	141.4	139.3	141.9	143.8	137.8	140.3	139.6	139.3	137.2	138.7	141.7
Roasted coffee	364.9	345.1	343.1	341.0	344.4	353.3	364.4	360.3	340.5	338.9	337.3	340.1	348.8	359.9
Freeze dried and instant coffee	345.3	330.8	329.9	330.8	332.0	336.9	342.8	347.0	331.4	332.7	333.2	331.6	336.5	342.5
Other noncarbonated drinks (12/77=100)	130.8	134.9	135.6	136.4	137.0	138.0	138.4	130.9	134.6	135.5	136.4	137.1	138.2	138.6
Other prepared foods	246.9	259.0	260.5	262.7	262.8	264.6	265.3	247.1	260.5	262.3	264.5	264.4	266.3	266.9
Canned and packaged soup (12/77=100)	128.7	134.9	133.1	133.4	133.7	134.3	135.9	129.3	136.4	135.6	136.1	135.7	136.4	137.9
Frozen prepared foods (12/77=100)	140.0	144.8	144.1	146.5	145.9	147.8	146.2	137.8	142.7	142.8	145.1	145.3	147.4	145.6
Snacks (12/77=100)	142.3	148.6	152.0	152.5	152.2	152.6	153.4	143.5	152.6	156.3	155.6	154.2	154.6	155.2
Seasonings, olives, pickles, and relish (12/77=100)	137.2	144.4	146.2	148.9	148.8	149.7	151.3	136.3	142.7	144.8	147.4	147.7	148.6	150.3
Other condiments (12/77=100)	135.8	143.3	143.5	145.0	144.6	146.4	146.9	137.3	145.3	145.5	146.5	146.2	148.0	148.4
Miscellaneous prepared foods (12/77=100)	135.8	142.3	144.5	144.8	145.8	146.9	147.0	136.0	142.8	143.9	145.2	145.8	147.0	147.1
Other canned and packaged prepared foods (12/77=100)	132.4	138.9	140.5	141.8	142.5	142.5	143.0	132.4	141.1	141.9	143.0	143.9	143.9	144.5
Food away from home	284.7	294.8	296.2	297.2	297.7	299.8	301.2	287.3	297.6	299.0	299.6	300.7	302.8	304.2
Lunch (12/77=100)	138.6	143.6	143.9	144.4	144.6	146.1	146.6	139.8	144.6	145.3	145.6	146.3	147.7	148.2
Dinner (12/77=100)	138.2	142.4	143.2	143.6	144.0	144.8	145.2	138.4	144.3	144.8	145.1	145.6	146.4	146.8
Other meals and snacks (12/77=100)	137.0	143.1	143.9	144.6	144.7	145.4	146.9	138.5	143.9	144.8	145.1	145.4	146.2	147.6
Alcoholic beverages	195.9	202.5	201.4	202.3	202.7	204.0	205.6	197.6	204.6	204.3	204.6	204.9	206.0	207.6
Alcoholic beverages at home (12/77=100)	127.4	131.4	130.5	131.2	131.4	132.2	133.3	128.8	132.8	132.5	132.8	132.8	133.4	134.6
Beer and ale	197.6	203.6	202.5	204.0	204.1	205.0	207.4	197.2	203.5	203.1	203.6	203.5	204.3	206.5
Whiskey	140.0	145.4	144.0	144.8	145.0	145.9	146.8	142.0	146.2	146.4	146.2	145.9	146.8	147.7
Wine	224.0	229.7	228.2	227.5	230.0	232.2	234.2	231.6	237.6	238.1	237.4	238.0	238.8	241.6
Other alcoholic beverages (12/77=100)	113.9	117.5	116.3	117.3	117.3	117.5	117.8	113.3	117.1	115.7	116.8	117.4	117.5	117.8
Alcoholic beverages away from home (12/77=100)	129.7	135.4	135.5	135.7	135.8	137.0	137.6	129.4	136.2	136.4	136.6	137.3	138.6	139.1
HOUSING	290.9	303.7	303.5	304.2	305.2	306.1	307.3	290.7	303.8	303.3	303.8	304.7	305.8	306.7
Shelter	300.5	328.9	328.8	327.2	328.0	328.3	329.5	301.7	328.6	328.1	328.5	329.3	329.4	330.3
Rent, residential	201.9	211.9	213.8	215.0	216.5	217.8	218.6	201.6	211.5	213.2	214.5	216.0	217.4	218.1
Other rental costs	278.5	308.1	308.7	305.3	306.3	313.6	316.9	278.3	308.0	308.4	305.0	305.3	312.3	315.6
Lodging while out of town	297.4	326.3	324.2	318.6	319.9	331.1	335.9	296.0	325.3	323.3	317.9	318.0	328.4	333.0
Tenants' insurance (12/77=100)	129.3	135.9	140.0	140.4	140.7	141.8	143.5	129.9	136.4	140.1	140.3	140.6	142.0	143.6
Homeownership	335.8	367.8	366.7	367.2	367.8	367.5	368.7	338.2	371.0	369.7	369.8	370.4	369.9	370.8
Home purchase	263.0	274.5	272.5	270.2	270.5	269.3	270.4	262.7	273.8	271.4	268.6	268.7	267.4	268.3
Financing, taxes, and insurance	437.1	501.8	501.8	505.6	506.3	506.0	507.2	442.6	509.0	508.3	511.9	512.9	512.2	513.2
Property insurance	373.1	380.7	382.5	383.3	384.1	383.0	383.7	376.6	381.9	384.7	385.5	386.5	385.6	386.0
Property taxes	198.5	206.2	207.4	208.0	210.7	212.9	215.1	200.6	208.0	209.2	210.0	212.5	214.5	217.2
Contracted mortgage interest cost	585.0	682.0	681.3	686.8	686.6	685.2	686.1	586.5	684.4	682.5	687.7	688.1	688.3	688.6
Mortgage interest rates	211.9	238.2	239.5	244.1	243.9	244.4	243.9	212.3	239.2	240.5	245.3	245.3	245.7	245.4
Maintenance and repairs	302.8	321.6	320.8	322.8	324.1	326.7	328.2	299.9	318.1	319.2	319.8	321.0	323.3	324.6
Maintenance and repair services	328.7	352.5	351.1	353.8	355.4	358.2	359.4	327.7	352.5	354.2	354.9	356.5	359.2	360.1
Maintenance and repair commodities	242.4	248.7	249.3	249.7	250.3	252.5	254.6	238.6	244.1	244.0	244.5	244.9	246.4	248.2
Paint and wallpaper, supplies, tools, and equipment (12/77=100)	141.6	146.2	146.7	146.5	147.3	149.4	150.9	136.9	139.1	139.9	140.0	140.5	142.3	143.7
Lumber, awnings, glass, and masonry (12/77=100)	124.0	125.0	124.4	124.1	124.3	124.6	124.6	122.3	123.2	122.3	121.8	121.6	121.9	121.7
Plumbing, electrical, heating, and cooling supplies (12/77=100)	127.3	131.2	132.4	133.1	131.5	131.9	133.8	127.0	131.7	132.1	132.4	131.6	131.8	133.4
Miscellaneous supplies and equipment (12/77=100)	125.2	131.2	131.7	131.6	132.5	133.6	134.8	127.8	134.3	133.7	134.2	134.7	135.7	136.9
Fuel and other utilities	304.5	331.1	330.1	329.8	331.8	336.2	337.1	305.6	332.3	330.9	330.9	332.7	337.0	337.0
Fuels	387.4	422.4	419.0	417.6	420.0	426.9	427.6	387.3	422.2	418.4	417.4	419.6	426.2	426.8
Fuel oil, coal, and bottled gas	675.6	673.4	672.7	676.1	682.5	686.0	683.1	678.5	677.0	675.9	679.3	685.5	689.9	686.0
Fuel oil	712.0	705.7	704.3	706.8	713.5	716.8	713.8	714.2	709.0	707.1	709.6	715.0	719.3	716.3
Other fuels (6/78 = 100)	157.5	163.8	165.0	167.7	169.4	170.9	170.0	158.4	165.3	166.4	169.1	170.8	172.1	171.4
Gas (piped) and electricity	322.9	364.5	360.6	358.3	358.9	367.4	368.7	322.1	363.6	359.3	357.5	358.8	366.0	367.3
Electricity	271.3	309.8	303.0	298.6	300.3	306.6	306.8	271.1	309.9	302.7	297.7	299.3	305.3	305.5
Utility (piped) gas	389.0	431.7	434.5	437.0	438.2	447.2	450.8	386.8	428.5	430.8	436.0	436.4	445.2	448.7

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981					1982		1981					1982	
	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
HOUSING—Continued														
Fuel and other utilities—Continued														
Other utilities and public services	173.6	187.4	189.4	190.7	191.9	192.7	193.9	173.9	187.8	189.8	191.0	192.2	193.1	194.3
Telephone services	142.4	152.5	154.3	155.6	156.8	157.2	157.9	142.5	152.7	154.5	155.8	156.9	157.3	158.0
Local charges (12/77 = 100)	113.5	120.5	121.5	123.5	124.4	124.0	125.3	113.6	120.7	121.8	123.8	124.6	124.2	125.4
Interstate toll calls (12/77 = 100)	101.8	114.9	116.6	116.7	116.7	116.8	116.6	101.9	115.1	116.6	116.8	116.8	116.9	116.7
Intrastate toll calls (12/77 = 100)	101.2	103.9	105.5	105.3	107.1	109.2	109.1	101.0	103.7	105.3	105.0	106.9	109.0	108.8
Water and sewerage maintenance	274.7	304.1	305.2	306.1	307.4	309.8	313.3	276.3	306.0	307.3	307.9	309.4	312.2	315.7
Household furnishings and operations	214.9	224.5	225.6	227.2	227.7	228.4	230.2	211.7	221.2	222.2	223.6	224.2	224.9	226.7
Housefurnishings	180.8	187.9	188.7	189.4	189.2	189.8	191.4	178.5	185.7	186.6	187.3	187.1	187.7	189.3
Textile housefurnishings	195.1	207.7	210.4	211.7	211.2	210.1	216.0	196.9	213.0	214.1	214.7	213.9	212.5	218.5
Household linens (12/77 = 100)	118.6	127.7	130.1	130.8	128.8	127.3	131.0	121.4	129.7	132.0	131.9	129.9	128.6	132.1
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	124.8	131.4	132.2	133.1	134.7	134.8	138.5	124.4	136.3	135.2	136.1	137.4	137.0	141.0
Furniture and bedding	199.3	207.7	207.9	209.2	209.7	209.5	209.4	195.6	202.7	203.8	205.3	206.0	205.9	205.5
Bedroom furniture (12/77 = 100)	131.3	137.6	137.4	139.6	139.6	139.7	140.5	127.7	132.9	132.3	135.2	135.2	136.5	137.1
Sofas (12/77 = 100)	114.5	118.6	119.3	118.7	119.4	117.3	116.4	113.2	117.4	119.0	118.8	119.5	117.6	116.5
Living room chairs and tables (12/77 = 100)	115.9	116.8	117.0	118.8	119.0	118.9	118.6	115.2	117.2	118.5	118.9	119.1	119.0	118.8
Other furniture (12/77 = 100)	129.1	137.3	137.3	137.1	138.4	138.5	138.1	126.6	132.3	133.0	133.1	134.0	133.9	133.4
Appliances including TV and sound equipment	143.9	147.7	147.8	148.2	147.9	148.8	149.9	142.9	146.7	147.2	147.7	147.5	148.5	149.6
Television and sound equipment (12/77 = 100)	107.9	108.7	109.1	109.0	108.9	108.8	109.2	106.6	107.8	108.1	108.3	108.0	107.9	108.4
Television	105.7	104.6	105.0	104.8	104.7	104.4	104.5	104.2	103.6	103.8	103.6	103.3	103.1	103.3
Sound equipment (12/77 = 100)	111.0	113.4	113.8	113.9	113.7	113.8	114.5	109.6	112.4	112.8	113.4	112.9	113.0	113.8
Household appliances	169.2	175.7	175.3	176.1	175.9	176.0	179.7	167.8	174.4	175.1	175.9	176.0	176.1	179.9
Refrigerators and home freezers	168.4	177.5	177.0	178.7	179.9	180.8	182.6	172.3	180.6	181.6	182.7	185.3	186.1	187.9
Laundry equipment (12/77 = 100)	123.7	129.7	130.5	130.7	130.5	132.2	133.5	122.8	128.8	129.8	130.8	130.3	132.4	133.8
Other household appliances (12/77 = 100)	115.4	119.7	118.9	119.4	118.7	120.6	121.6	113.7	117.1	117.1	117.4	116.8	118.5	119.7
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	115.1	118.8	118.2	118.7	117.9	119.4	121.0	114.2	116.0	115.9	116.8	116.2	117.4	118.9
Office machines, small electric appliances, and air conditioners (12/77 = 100)	115.7	120.8	119.8	120.1	119.6	121.9	122.4	113.1	118.3	118.4	118.1	117.3	118.7	120.5
Other household equipment (12/77 = 100)	127.9	133.1	134.2	134.4	134.0	134.9	136.7	125.6	131.6	132.4	132.4	131.9	132.9	134.7
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	128.7	134.8	135.4	136.1	135.9	136.3	139.1	120.8	129.6	129.6	129.7	128.3	128.6	131.0
Clocks, lamps, and decor items (12/77 = 100)	124.1	128.2	128.7	129.5	128.4	128.6	129.8	121.7	123.8	124.5	125.2	124.7	124.8	126.0
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	134.8	140.4	141.1	141.2	141.0	142.3	143.3	131.0	137.8	137.9	137.5	137.1	138.2	139.5
Lawn equipment, power tools, and other hardware (12/77 = 100)	119.9	124.5	127.2	126.9	126.3	127.8	130.3	123.8	129.2	131.2	131.6	131.5	133.2	135.5
Housekeeping supplies	262.8	273.3	274.3	275.4	277.4	279.1	282.4	260.1	270.4	271.2	271.9	274.1	275.7	278.8
Soaps and detergents	256.2	268.9	269.3	269.7	271.6	275.5	278.0	254.3	265.6	265.3	265.2	268.0	272.0	274.4
Other laundry and cleaning products (12/77 = 100)	129.3	135.7	136.7	137.3	138.8	139.6	141.0	129.6	135.8	136.6	137.0	137.5	138.4	139.8
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	138.4	139.9	141.8	143.6	144.5	145.1	145.7	139.2	140.4	142.4	143.9	144.4	145.1	145.6
Stationery, stationery supplies, and gift wrap (12/77 = 100)	121.4	127.2	128.1	128.5	128.8	128.8	130.4	122.4	128.7	130.8	131.3	131.6	131.7	133.4
Miscellaneous household products (12/77 = 100)	135.9	142.8	142.8	143.0	145.4	146.2	146.9	132.2	138.1	137.8	137.4	140.4	141.2	141.8
Lawn and garden supplies (12/77 = 100)	134.0	137.8	136.6	136.8	136.7	137.1	141.8	126.1	131.1	129.0	129.6	129.4	129.2	134.1
Housekeeping services	281.6	298.3	300.5	305.2	306.9	307.4	308.1	279.4	296.9	298.9	303.9	305.4	305.9	306.8
Postage	257.3	308.0	308.0	337.5	337.5	337.5	337.5	257.3	308.1	308.1	337.5	337.5	337.5	337.5
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	138.2	144.7	145.5	147.0	147.8	148.4	149.4	137.8	144.9	145.2	146.7	147.6	148.0	149.1
Appliance and furniture repair (12/77 = 100)	123.6	129.0	131.3	132.2	133.0	133.6	134.2	122.4	128.3	130.5	131.2	131.6	132.2	132.8
APPAREL AND UPKEEP	182.0	190.7	191.5	191.3	190.5	187.3	188.0	181.8	190.5	190.6	190.5	189.4	186.5	187.3
Apparel commodities	173.2	181.4	182.1	181.8	180.7	177.0	177.6	173.3	181.6	181.5	181.5	180.1	176.7	177.4
Apparel commodities less footwear	169.6	178.0	178.4	177.9	176.6	172.8	173.4	169.6	178.1	177.7	177.3	175.6	172.2	173.0
Men's and boys'	171.6	181.1	183.6	183.6	181.6	178.7	179.3	172.2	181.4	182.9	183.2	181.7	178.6	179.4
Men's (12/77 = 100)	107.8	114.3	115.9	115.9	114.5	112.9	113.0	108.2	115.0	115.8	115.9	115.0	113.3	113.5
Suits, sport coats, and jackets (12/77 = 100)	100.5	108.8	109.8	109.9	108.4	104.3	104.8	96.1	102.1	102.0	102.0	99.5	97.8	98.2
Coats and jackets (12/77 = 100)	95.6	101.0	102.4	102.8	101.4	96.4	95.8	96.0	106.1	104.9	105.1	104.1	97.6	97.2
Furnishings and special clothing (12/77 = 100)	125.3	132.7	134.3	133.6	134.2	133.6	134.7	120.2	128.5	130.0	129.8	130.6	129.8	131.1
Shirts (12/77 = 100)	114.8	120.6	123.0	123.0	122.7	120.7	119.3	116.8	123.9	125.5	125.4	125.3	123.3	121.8
Dungarees, jeans, and trousers (12/77 = 100)	102.7	107.8	109.2	109.8	108.5	108.2	109.6	108.7	113.5	114.7	115.5	114.1	113.6	114.1
Boys' (12/77 = 100)	112.6	116.4	118.1	118.0	117.2	114.6	116.0	111.9	114.8	116.4	116.5	115.4	112.9	114.3
Coats, jackets, sweaters, and shirts (12/77 = 100)	104.3	111.3	111.9	111.6	109.9	104.7	105.9	107.0	112.3	113.5	112.8	110.9	105.3	106.3
Furnishings (12/77 = 100)	119.1	125.0	125.6	127.0	127.5	127.3	128.2	116.1	120.9	121.8	123.3	123.5	123.3	124.2
Suits, trousers, sport coats, and jackets (12/77 = 100)	116.6	117.0	119.9	119.3	118.8	117.2	119.1	114.2	114.4	116.6	116.9	115.9	114.7	116.7
Women's and girls'	153.4	162.9	161.2	160.6	159.6	154.3	154.7	155.4	164.9	162.7	162.1	160.7	156.4	157.1
Women's (12/77 = 100)	101.9	108.1	106.8	106.3	105.8	102.3	102.9	103.5	109.8	108.1	107.6	107.1	103.9	104.8
Coats and jackets	160.7	170.8	167.3	164.0	161.8	158.4	156.4	159.1	177.8	171.4	166.3	167.3	161.6	163.1
Dresses	156.9	170.8	166.9	165.0	164.0	153.1	152.8	150.5	155.5	151.5	151.9	149.5	140.7	140.9
Separates and sportswear (12/77 = 100)	97.1	101.1	100.4	101.1	100.7	96.7	98.3	99.7	103.3	102.3	101.9	101.3	97.3	96.8
Underwear, nightwear, and hosiery (12/77 = 100)	118.4	122.8	123.0	124.1	124.8	124.0	126.2	116.0	122.7	123.4	124.0	124.5	123.7	126.0
Suits (12/77 = 100)	90.0	95.4	92.4	89.5	87.7	84.2	87.0	103.6	115.0	110.2	109.5	106.0	104.0	105.6
Girls' (12/77 = 100)	102.8	109.7	109.2	109.2	107.7	104.4	102.7	102.7	108.8	108.4	108.4	106.0	104.2	103.1
Coats, jackets, dresses, and suits (12/77 = 100)	94.4	103.3	99.8	100.3	98.4	93.4	92.6	93.5	103.3	99.8	99.9	96.1	91.2	91.5
Separates and sportswear (12/77 = 100)	104.2	111.0	112.0	111.3	108.9	106.3	103.4	105.8	110.0	110.6	110.2	107.5	108.2	106.0
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	113.9	117.9	119.6	120.0	120.7	119.2	118.0	112.5	115.5	118.5	119.0	119.5	118.2	117.0

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981					1982		1981					1982	
	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
APPAREL AND UPKEEP—Continued														
Apparel commodities—Continued														
Apparel commodities less footwear—Continued														
Infants' and toddlers'	254.3	266.4	268.5	264.9	259.4	258.6	262.2	264.0	279.8	281.6	274.1	270.6	270.1	271.4
Other apparel commodities	212.3	213.3	216.2	214.8	214.5	212.9	214.3	204.4	206.0	206.2	206.1	203.2	201.4	202.8
Sewing materials and notions (12/77 = 100)	112.2	118.3	118.1	118.6	118.3	116.2	117.6	112.2	116.4	116.3	116.4	116.2	114.3	115.9
Jewelry and luggage (12/77 = 100)	147.9	146.2	149.0	147.5	147.4	146.7	147.4	141.3	140.9	141.1	141.0	138.4	137.5	138.1
Footwear	194.9	202.4	204.2	205.4	205.7	202.8	202.8	194.9	202.3	204.1	206.2	205.9	203.1	203.3
Men's (12/77 = 100)	125.0	128.8	129.3	130.3	130.7	130.3	130.7	125.7	129.7	130.3	132.3	132.5	132.2	132.6
Boys' and girls' (12/77 = 100)	125.3	129.7	131.1	132.1	132.1	130.1	129.5	126.2	130.7	132.2	134.0	134.8	132.5	132.3
Women's (12/77 = 100)	117.9	123.5	124.9	125.2	125.4	122.6	122.7	115.9	121.2	122.5	122.9	121.6	118.9	119.0
Apparel services	249.9	262.0	263.2	264.6	266.4	267.6	269.4	248.7	260.0	262.1	262.3	264.4	265.5	267.2
Laundry and drycleaning other than coin operated (12/77 = 100)	147.6	155.7	157.1	158.2	159.2	160.0	161.4	147.3	155.0	156.4	158.3	157.8	158.5	159.9
Other apparel services (12/77 = 100)	133.3	138.2	137.5	137.9	139.1	139.4	139.8	132.9	137.4	138.3	138.6	139.6	139.9	140.3
TRANSPORTATION	270.9	285.2	287.2	289.1	289.8	289.9	288.0	272.1	286.6	288.9	290.8	291.5	291.6	289.6
Private	269.4	281.9	283.9	285.8	286.5	286.6	284.5	271.0	284.1	286.4	288.3	289.0	289.0	286.9
New cars	184.8	191.3	192.5	195.3	197.0	197.4	195.5	185.0	191.4	192.7	195.2	196.9	197.3	195.3
Used cars	234.3	272.8	278.2	281.4	281.9	280.5	279.7	234.4	272.8	278.2	281.4	281.9	280.5	279.7
Gasoline	410.8	411.2	409.9	409.5	408.4	406.0	399.1	412.5	412.4	411.3	410.9	409.8	407.5	400.6
Automobile maintenance and repair	285.4	298.7	301.3	302.8	304.1	305.5	307.7	285.4	299.3	301.8	303.4	304.8	306.2	308.4
Body work (12/77 = 100)	139.2	147.4	148.7	149.9	150.6	151.5	153.7	139.2	146.1	147.2	148.3	148.9	149.8	152.1
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	136.8	143.1	144.0	144.2	144.7	145.7	148.5	138.3	145.5	146.5	147.3	148.5	148.5	150.2
Maintenance and servicing (12/77 = 100)	133.7	138.9	140.3	140.9	141.5	142.0	142.7	133.5	139.2	140.3	140.5	141.0	141.5	142.3
Power plant repair (12/77 = 100)	135.5	142.6	144.0	144.9	145.6	146.2	147.3	134.7	141.9	143.5	144.7	145.1	145.7	146.8
Other private transportation	234.2	244.2	247.5	249.5	250.6	253.3	253.4	236.9	246.9	250.6	253.0	254.2	256.9	256.8
Other private transportation commodities	205.8	212.6	212.7	213.4	214.5	215.5	214.8	207.5	215.5	216.1	216.8	216.9	218.0	217.3
Motor oil, coolant, and other products (12/77 = 100)	141.6	147.7	148.0	148.5	148.7	149.2	149.3	139.0	145.3	144.8	146.7	147.2	146.9	147.8
Automobile parts and equipment (12/77 = 100)	131.8	136.0	136.0	136.4	137.2	138.1	137.4	133.4	138.4	138.9	139.2	139.2	140.0	139.4
Tires	183.5	189.7	189.4	189.7	191.5	192.8	191.3	188.6	194.1	194.6	195.1	195.2	196.5	195.1
Other parts and equipment (12/77 = 100)	129.3	132.8	133.4	134.1	133.9	134.3	134.6	129.3	133.2	134.3	134.1	133.9	134.5	134.9
Other private transportation services	244.0	255.0	259.1	261.5	262.6	265.8	266.1	247.0	257.7	262.2	265.1	266.6	269.7	268.8
Automobile insurance	253.7	262.0	264.6	265.4	266.0	266.8	268.1	253.2	261.8	264.3	265.0	265.6	268.6	268.0
Automobile finance charges (12/77 = 100)	165.1	178.0	184.4	188.7	190.5	190.9	188.9	163.9	176.5	183.1	187.6	189.9	190.3	188.3
Automobile rental, registration, and other fees (12/77 = 100)	116.7	120.1	120.2	120.7	120.8	127.6	128.9	119.3	119.8	120.0	121.1	121.4	128.4	129.5
State registration	146.9	147.9	147.9	149.0	149.0	166.9	167.1	147.0	148.0	148.0	149.0	149.0	166.2	166.5
Drivers' licenses (12/77 = 100)	105.4	109.6	109.9	110.4	111.9	117.3	121.7	105.1	109.5	109.8	110.3	111.9	117.1	121.7
Vehicle inspection (12/77 = 100)	125.8	(1)	(1)	(1)	123.3	129.2	129.3	126.6	(1)	(1)	(1)	129.0	130.5	130.6
Other vehicle-related fees (12/77 = 100)	134.7	140.9	141.2	141.3	141.6	142.5	144.8	147.2	145.9	146.5	148.6	149.2	150.4	152.4
Public	288.1	329.1	330.8	333.2	333.8	334.9	336.8	280.6	324.5	326.6	328.2	328.6	329.4	331.0
Airline fare	334.1	372.5	372.0	374.5	374.7	375.5	379.3	332.7	371.8	372.9	373.1	372.8	372.7	376.3
Intercity bus fare	312.8	351.4	361.3	362.2	305.2	367.3	365.7	312.2	351.7	362.1	362.9	366.1	368.9	367.4
Intracity mass transit	248.4	298.6	301.7	304.4	304.6	305.9	306.7	247.8	299.2	301.3	303.6	303.9	305.1	305.8
Taxi fare	271.4	288.6	289.3	291.3	294.7	296.3	296.7	277.7	297.1	298.1	300.4	304.1	305.6	306.1
Intercity train fare	276.5	305.0	315.0	319.2	319.2	318.1	314.0	276.9	305.2	314.9	318.9	318.9	317.9	314.5
MEDICAL CARE	282.6	301.7	304.8	308.2	310.2	313.4	316.2	284.4	300.9	304.0	307.1	309.1	312.0	314.9
Medical care commodities	179.2	190.8	192.1	193.1	194.9	195.9	197.7	179.6	191.9	192.9	193.8	195.4	196.4	198.3
Prescription drugs	165.0	176.5	178.6	179.6	181.0	181.9	183.7	165.3	178.0	179.4	180.3	181.9	182.8	184.7
Anti-infective drugs (12/77 = 100)	129.2	136.5	136.8	136.3	137.8	138.2	138.4	129.5	139.2	139.6	138.9	139.7	140.1	140.4
Tranquilizers and sedatives (12/77 = 100)	131.9	140.0	141.9	143.6	144.8	145.4	145.8	130.7	138.7	141.3	143.3	144.4	144.9	146.5
Circulatories and diuretics (12/77 = 100)	121.9	127.8	129.5	130.4	131.9	132.2	134.0	122.9	129.0	130.5	131.0	131.8	132.1	134.0
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	147.4	160.6	161.9	163.3	164.6	165.6	168.4	148.5	161.4	162.8	164.1	165.9	166.9	168.7
Pain and symptom control drugs (12/77 = 100)	130.9	141.7	144.1	144.9	145.9	147.3	148.8	133.3	143.8	144.2	145.4	147.3	148.7	150.3
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	124.5	134.1	136.8	137.5	138.1	138.8	139.9	125.2	134.6	136.1	136.8	138.0	138.8	139.9
Nonprescription drugs and medical supplies (12/77 = 100)	128.9	136.7	137.0	137.8	139.2	139.9	141.1	129.4	137.4	137.9	138.5	139.7	140.4	141.6
Eyeglasses (12/77 = 100)	123.1	126.9	127.4	127.8	128.4	128.3	128.9	122.3	126.0	126.0	126.7	127.1	127.1	127.6
Internal and respiratory over-the-counter drugs	202.7	217.8	217.3	218.6	221.6	222.8	225.1	203.0	218.9	219.5	220.2	222.8	223.9	226.4
Nonprescription medical equipment and supplies (12/77 = 100)	124.5	131.4	132.7	133.7	134.6	135.9	137.1	126.5	132.6	133.8	134.7	135.2	136.6	137.7
Medical care services	305.2	326.1	329.7	333.7	335.7	339.4	342.4	307.4	324.7	328.3	332.0	334.0	337.5	340.6
Professional services	267.2	284.3	286.4	288.4	290.0	292.0	294.2	271.6	284.5	286.2	288.2	290.3	292.2	294.3
Physicians' services	287.7	304.9	307.9	311.3	313.0	315.5	318.8	293.9	308.6	310.9	314.1	316.0	318.6	321.7
Dental services	252.8	270.8	271.6	272.3	273.9	275.8	276.8	257.0	268.4	269.5	270.1	272.3	274.1	274.9
Other professional services (12/77 = 100)	130.0	137.7	138.9	139.5	140.3	140.3	141.5	129.5	134.3	134.9	136.2	137.2	137.2	138.5
Other medical care services	351.1	376.5	382.1	388.4	390.9	396.8	400.8	351.3	374.1	380.3	386.2	388.1	393.8	398.0
Hospital and other medical services (12/77 = 100)	146.1	156.6	159.0	161.9	162.7	165.6	167.1	145.2	154.8	157.9	160.6	161.1	164.0	165.7
Hospital room	458.2	484.6	503.0	515.4	519.3	529.4	533.8	455.9	488.5	498.9	508.6	512.6	522.0	527.0
Other hospital and medical care services (12/77 = 100)	145.5	155.0	157.2	159.2	159.6	162.2	163.8	144.4	153.4	156.1	158.3	158.4	161.2	163.0

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981					1982		1981					1982	
	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
ENTERTAINMENT	216.7	224.0	225.5	226.8	227.3	229.2	231.2	215.0	221.5	223.4	224.3	224.4	226.1	228.1
Entertainment commodities	219.7	227.9	228.9	230.3	230.6	232.0	234.3	216.2	224.0	224.2	225.5	225.4	226.7	228.9
Reading materials (12/77 = 100)	130.9	138.1	138.7	139.8	139.6	142.9	144.1	130.7	137.8	138.3	139.3	139.1	142.1	143.3
Newspapers	253.8	266.3	267.1	267.6	267.7	270.5	273.1	254.0	266.2	266.9	267.5	267.6	270.1	272.8
Magazines, periodicals, and books (12/77 = 100)	132.9	141.1	141.9	143.9	143.5	149.0	149.9	132.9	141.2	141.9	143.7	143.4	148.8	149.7
Sporting goods and equipment (12/77 = 100)	124.7	127.3	128.3	130.2	130.0	129.5	131.5	119.3	121.3	121.4	122.8	122.4	122.4	123.9
Sport vehicles (12/77 = 100)	126.5	128.4	129.4	(1)	132.1	c(1)	133.9	118.1	118.7	118.6	(1)	120.2	c(1)	121.9
Indoor and warm weather sport equipment (12/77 = 100)	115.9	119.1	119.2	119.6	119.9	120.1	119.6	115.3	117.2	117.3	118.2	117.9	118.2	117.7
Bicycles	187.2	193.2	194.4	194.3	193.9	194.8	197.3	188.3	193.9	195.9	196.3	195.2	196.2	198.9
Other sporting goods and equipment (12/77 = 100)	120.6	125.0	126.6	126.7	126.2	125.3	127.0	119.2	125.8	126.2	126.9	126.3	125.2	127.4
Toys, hobbies, and other entertainment (12/77 = 100)	126.3	131.0	131.3	131.3	132.0	132.2	133.2	125.8	130.6	130.5	130.8	130.9	131.2	132.3
Toys, hobbies, and music equipment (12/77 = 100)	124.7	129.4	129.6	129.7	130.1	130.8	131.7	123.0	127.1	126.2	126.7	126.9	127.7	128.6
Photographic supplies and equipment (12/77 = 100)	122.6	126.4	126.0	125.5	125.2	125.2	126.9	124.4	127.7	127.8	127.5	126.3	126.3	127.9
Pet supplies and expenses (12/77 = 100)	132.0	137.2	138.3	138.3	140.2	139.7	140.6	131.9	138.8	139.9	140.1	140.9	140.5	141.6
Entertainment services	213.0	218.9	221.0	222.3	223.0	225.5	227.1	213.9	218.3	223.3	223.4	223.9	226.1	227.8
Fees for participant sports (12/77 = 100)	129.4	134.3	136.4	137.3	137.6	138.6	140.9	129.0	134.0	138.9	139.1	139.3	141.2	142.5
Admissions (12/77 = 100)	125.3	128.0	128.3	128.9	129.7	131.2	131.6	126.2	127.3	128.2	128.3	128.7	130.1	130.6
Other entertainment services (12/77 = 100)	122.0	122.5	123.1	123.4	123.7	124.2	125.0	123.0	122.7	124.2	124.1	124.3	124.7	125.9
OTHER GOODS AND SERVICES	227.4	243.0	245.2	245.9	246.7	248.4	250.3	225.6	238.3	241.4	242.5	243.5	245.0	247.1
Tobacco products	212.3	221.7	225.3	226.2	226.8	227.1	230.7	211.9	220.9	224.5	225.4	225.9	226.2	229.8
Cigarettes	214.8	224.2	228.1	228.9	229.7	230.0	233.6	214.5	223.4	227.2	228.1	228.7	229.1	232.7
Other tobacco products and smoking accessories (12/77 = 100)	126.5	133.1	134.0	134.7	134.4	134.7	136.8	126.4	134.4	134.7	135.0	134.7	135.0	136.9
Personal care	224.6	236.3	236.9	237.7	238.1	240.9	242.3	223.2	233.6	234.1	235.5	237.1	238.8	240.4
Toilet goods and personal care appliances	219.5	231.2	231.6	232.5	234.7	236.4	238.5	218.5	231.1	231.4	233.1	235.4	236.9	238.2
Products for the hair, hairpieces, and wigs (12/77 = 100)	128.3	134.1	134.9	135.4	136.5	137.2	138.4	126.7	133.3	131.8	133.3	135.8	136.4	137.8
Dental and shaving products (12/77 = 100)	132.9	140.0	139.8	140.5	141.2	144.0	145.6	131.2	138.0	138.0	139.3	138.8	142.6	144.2
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	123.2	130.7	131.2	131.8	133.2	134.1	135.0	122.8	130.4	131.6	132.2	133.7	134.5	135.8
Other toilet goods and small personal care appliances (12/77 = 100)	127.5	134.2	133.7	134.3	136.0	135.9	137.0	129.0	137.4	138.2	139.1	139.1	138.9	140.2
Personal care services	230.0	241.5	242.3	243.1	243.9	245.7	246.5	228.1	236.3	237.1	238.1	239.2	241.0	241.8
Beauty parlor services for women	231.7	243.0	243.9	244.8	245.2	246.9	247.7	229.4	236.1	236.7	237.8	238.8	240.5	241.3
Haircuts and other barber shop services for men (12/77 = 100)	128.5	135.3	135.6	135.9	136.8	138.0	138.4	127.6	133.9	134.5	134.9	135.7	136.8	137.2
Personal and educational expenses	254.4	281.5	284.6	284.9	285.1	288.1	289.2	255.0	281.8	284.8	285.6	285.9	288.9	290.2
Schoolbooks and supplies	229.8	252.1	254.5	254.6	254.5	260.7	262.9	233.6	255.9	258.3	258.3	258.5	264.8	267.1
Personal and educational services	260.4	288.5	291.7	292.1	292.3	294.8	295.8	260.6	288.5	291.6	292.5	292.8	295.2	296.3
Tuition and other school fees	132.7	147.4	149.0	149.1	149.1	150.5	150.6	132.9	147.7	149.3	149.4	149.4	150.7	150.9
College tuition (12/77 = 100)	132.1	146.3	148.2	148.3	148.3	149.9	150.1	132.1	146.1	148.1	148.1	148.1	149.6	149.8
Elementary and high school tuition (12/77 = 100)	134.4	151.5	151.6	152.0	152.0	152.1	152.2	134.3	152.1	152.2	152.7	152.7	152.8	152.9
Personal expenses (12/77 = 100)	137.1	150.0	152.3	152.8	153.4	154.3	156.1	136.3	148.5	150.4	152.1	152.7	153.7	155.3
Special indexes:														
Gasoline, motor oil, coolant, and other products	404.8	405.4	404.3	403.9	402.8	400.5	393.9	406.3	406.5	405.4	405.1	404.0	401.8	395.3
Insurance and finance	370.7	417.6	419.0	422.2	423.1	423.9	424.8	370.4	416.4	417.6	420.9	422.1	422.8	423.5
Utilities and public transportation	262.3	293.3	292.7	292.6	293.9	297.7	299.1	261.0	292.4	291.6	291.5	292.6	296.4	297.7
Housekeeping and home maintenance services	314.6	335.7	335.9	339.6	341.3	343.0	344.0	313.4	335.5	337.3	339.9	341.5	343.3	344.2

[1] Not available.

c = corrected

21. Consumer Price Index for All Urban Consumers: Cross classification of region and population size class by expenditure category and commodity and service group

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000-1.250 million)			Size class C (75,000-385,000)			Size class D (75,000 or less)		
	1981			1981			1981			1981		
	Oct.	Dec.	Feb.	Oct.	Dec.	Feb.	Oct.	Dec.	Feb.	Oct.	Dec.	Feb.
	Northeast											
EXPENDITURE CATEGORY												
All items	143.8	144.2	144.2	152.3	152.9	150.7	156.2	159.2	158.1	149.2	150.7	151.4
Food and beverages	139.7	139.6	143.3	139.9	139.6	142.7	142.6	142.8	145.7	137.4	137.0	140.4
Housing	147.8	148.0	146.0	161.4	161.9	155.7	170.1	176.3	172.5	156.6	159.3	159.5
Apparel and upkeep	118.9	117.5	117.0	124.8	123.1	120.5	124.8	125.9	123.1	126.5	125.4	119.9
Transportation	156.3	157.9	156.5	164.0	165.4	164.2	162.0	162.7	161.6	159.7	161.8	161.7
Medical care	140.0	142.0	145.1	143.6	146.6	147.0	146.5	148.3	148.7	142.3	143.0	144.8
Entertainment	131.8	131.9	133.3	129.6	131.0	132.4	129.5	133.7	136.1	133.2	134.3	137.6
Other goods and services	134.6	135.4	136.9	138.0	138.7	140.6	141.5	142.0	142.9	137.5	138.5	140.6
COMMODITY AND SERVICE GROUP												
Commodities	142.1	141.8	142.1	149.6	149.6	147.9	149.8	151.1	150.1	146.4	147.2	147.6
Commodities less food and beverages	143.7	143.2	141.4	154.3	154.5	150.5	153.1	154.9	152.2	150.7	152.1	151.0
Services	146.0	14[illegible].3	146.9	156.5	158.0	155.1	166.7	172.5	171.0	153.5	156.1	157.3
	North Central region											
EXPENDITURE CATEGORY												
All items	152.6	152.6	153.6	148.8	149.2	151.9	145.9	147.4	149.1	146.7	147.6	151.0
Food and beverages	139.7	139.8	141.6	139.3	139.3	140.8	140.3	140.7	143.1	143.3	143.4	144.7
Housing	164.4	163.3	164.9	153.6	153.8	159.9	147.5	150.0	152.7	148.3	149.1	155.5
Apparel and upkeep	115.5	113.7	112.7	127.2	128.0	121.1	123.4	122.4	121.8	123.1	123.6	119.5
Transportation	161.2	162.9	161.1	159.5	160.8	159.7	161.2	162.3	161.0	158.6	160.1	160.3
Medical care	142.8	144.6	148.4	145.6	146.8	150.8	145.3	147.7	150.3	147.7	151.2	154.5
Entertainment	132.2	1[illegible]4.1	137.1	123.8	124.4	126.4	131.3	132.6	136.1	128.4	129.2	132.5
Other goods and services	136.0	137.0	138.8	142.4	142.9	145.1	135.1	135.6	137.3	140.4	141.7	144.6
COMMODITY AND SERVICE GROUP												
Commodities	145.7	145.1	145.2	142.9	142.9	145.4	141.4	142.2	143.5	140.7	140.7	142.1
Commodities less food and beverages	148.5	147.6	146.9	144.4	144.4	147.3	141.9	142.8	143.6	139.6	139.5	141.0
Services	162.9	163.7	166.1	158.3	159.5	162.6	153.3	156.1	158.4	156.2	158.7	165.0
	South											
EXPENDITURE CATEGORY												
All items	150.9	152.0	152.6	153.4	155.9	157.2	149.2	152.3	154.0	149.4	150.8	152.3
Food and beverages	141.2	141.4	144.2	141.1	141.3	144.8	141.2	141.9	144.1	144.0	143.4	146.1
Housing	158.6	160.3	160.2	162.5	166.7	168.3	154.7	159.7	162.7	153.5	156.2	158.8
Apparel and upkeep	124.4	123.5	122.6	122.6	123.7	121.1	118.3	118.2	117.0	111.8	110.4	105.7
Transportation	160.6	161.9	161.5	162.3	164.1	162.8	160.2	162.3	160.7	160.6	161.6	158.9
Medical care	141.6	143.2	145.9	145.9	147.6	150.5	148.8	153.0	155.4	156.3	160.1	162.5
Entertainment	127.1	127.4	129.3	133.4	137.1	140.0	134.8	136.4	140.4	138.8	138.4	140.4
Other goods and services	139.2	138.7	141.2	138.5	138.5	140.7	138.5	138.9	142.0	139.5	140.5	147.9
COMMODITY AND SERVICE GROUP												
Commodities	145.0	145.9	146.8	145.7	147.5	148.4	143.6	145.3	146.0	144.1	145.1	145.0
Commodities less food and beverages	146.6	147.9	148.0	147.7	150.1	149.9	144.6	146.7	146.8	144.2	145.8	144.6
Services	159.3	160.5	160.7	164.9	168.6	170.4	157.9	163.1	166.3	157.4	159.5	163.3
	West											
EXPENDITURE CATEGORY												
All items	156.3	156.1	157.9	155.0	155.1	157.1	149.2	149.4	150.2	152.1	149.1	153.3
Food and beverages	140.3	140.8	143.9	144.9	145.4	147.9	141.4	140.1	143.4	145.5	145.8	148.1
Housing	167.1	165.5	167.2	162.6	161.6	164.9	153.5	153.8	154.4	153.9	148.1	153.9
Apparel and upkeep	121.8	121.9	121.7	127.6	127.1	126.4	116.5	117.1	118.6	135.9	135.6	131.9
Transportation	161.8	162.9	164.2	163.5	165.0	163.6	162.1	162.8	160.9	162.5	164.6	164.5
Medical care	150.5	155.7	157.8	148.1	151.3	153.7	149.4	151.1	154.8	150.4	152.8	157.9
Entertainment	133.0	133.6	135.1	132.5	133.9	135.5	131.4	129.4	130.4	144.4	145.6	147.8
Other goods and services	140.1	141.9	144.5	141.4	142.8	145.3	136.1	136.8	137.1	145.5	148.0	147.6
COMMODITY AND SERVICE GROUP												
Commodities	145.1	144.9	146.0	147.0	147.2	148.4	144.4	143.7	145.2	146.2	145.5	147.5
Commodities less food and beverages	147.1	146.6	146.9	147.8	148.0	148.6	145.6	145.1	145.9	146.5	145.4	147.3
Services	171.2	170.9	173.7	166.0	166.0	168.1	156.1	157.5	157.3	160.9	154.6	161.8

22. Consumer Price Index—U.S. city average, and selected areas

[1967 = 100 unless otherwise specified]

Area[1]	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981					1982		1981					1982	
	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
U.S. city average[2]	263.2	279.3	279.9	280.7	281.5	282.5	283.4	263.5	279.1	279.7	280.4	281.1	282.1	282.9
Anchorage, Alaska (10/67 = 100)	...	250.5	...	253.7	...	253.0	...	...	245.9	...	249.3	...	248.6	...
Atlanta, Ga.	263.0	...	281.5	...	282.2	...	279.8	266.4	...	283.0	...	284.1	...	282.7
Baltimore, Md.	...	279.9	...	280.7	...	282.1	...	...	281.6	...	280.9	...	282.3	...
Boston, Mass.	...	272.8	...	274.2	...	274.0	...	...	273.6	...	274.3	...	273.4	...
Buffalo, N.Y.	251.4	...	262.5	...	264.3	...	250.9	249.7	...	261.2	...	262.7	...	258.0
Chicago, Ill.-Northwestern Ind.	259.6	276.9	276.1	277.0	273.9	275.4	274.9	258.8	275.8	276.3	277.3	274.4	275.9	275.4
Cincinnati, Ohio-Ky.-Ind.	...	275.2	...	276.6	...	285.7	...	...	277.1	...	279.0	...	288.4	...
Cleveland, Ohio	273.5	...	282.8	...	281.6	...	285.9	273.9	...	282.3	...	281.2	...	285.0
Dallas-Ft. Worth, Tex.	274.4	...	292.5	...	295.1	...	293.6	272.9	...	288.8	...	291.0	...	289.8
Denver-Boulder, Colo.	...	298.9	...	297.8	...	305.4	...	...	304.2	...	302.8	...	310.5	...
Detroit, Mich.	270.2	284.2	281.5	279.6	278.3	280.8	277.8	265.5	280.2	278.2	276.4	275.1	277.8	274.8
Honolulu, Hawaii	243.3	...	259.3	...	258.3	...	262.2	243.5	...	259.1	...	259.3	...	263.2
Houston, Tex.	281.5	...	300.0	...	302.7	...	304.1	277.7	...	295.9	...	298.8	...	300.3
Kansas City, Mo.-Kansas	261.9	...	272.6	...	273.5	...	276.0	260.1	...	271.3	...	272.0	...	274.1
Los Angeles-Long Beach, Anaheim, Calif.	261.6	279.3	281.3	281.8	282.3	285.8	285.6	265.0	282.9	284.9	285.5	286.1	289.8	289.4
Miami, Fla. (11/77 = 100)	...	150.2	...	153.6	...	155.2	...	...	151.0	...	154.7	...	156.4	...
Milwaukee, Wis.	...	286.9	...	287.5	...	291.3	...	...	292.1	...	291.5	...	295.3	...
Minneapolis-St. Paul, Minn.-Wis.	280.6	...	291.6	...	298.7	...	306.0	262.4	...	291.6	...	298.3	...	305.3
New York, N.Y.-Northeastern N.J.	252.7	268.8	268.0	267.8	267.9	268.5	269.0	252.7	267.8	267.0	266.9	266.9	267.5	267.8
Northeast, Pa. (Scranton)	...	271.5	...	272.2	...	272.5	...	...	275.0	...	275.2	...	274.5	...
Philadelphia, Pa.-N.J.	255.9	274.4	274.7	274.1	274.9	275.7	275.5	258.1	274.5	275.2	274.5	274.1	275.1	275.1
Pittsburgh, Pa.	265.5	...	277.7	...	281.8	...	278.6	266.4	...	278.4	...	282.6	...	280.0
Portland, Oreg.-Wash.	...	291.1	...	278.7	...	288.4	...	...	288.8	...	276.3	...	285.5	...
St. Louis, Mo.-Ill.	...	273.4	...	273.8	...	278.4	...	...	273.0	...	273.0	...	277.1	...
San Diego, Calif.	...	313.9	...	321.3	...	323.1	...	...	308.0	...	315.1	...	317.4	...
San Francisco-Oakland, Calif.	280.5	...	297.0	...	294.0	...	295.8	281.6	...	295.6	...	292.7	...	294.9
Seattle-Everett, Wash.	...	288.6	...	289.2	...	295.9	...	...	284.3	...	285.7	...	291.9	...
Washington, D.C.-Md.-Va.	...	271.8	...	275.5	...	278.0	...	...	275.7	...	279.3	...	281.8	...

[1] The areas listed include not only the central city but the entire portion of the Standard Metropolitan Statistical Area, as defined for the 1970 Census of Population, except that the Standard Consolidated Area is used for New York and Chicago.

[2] Average of 85 cities.

23. Producer Price Indexes, by stage of processing

[1967=100]

Commodity grouping	Annual average 1981	1981										1982		
		Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. [1]	Dec.	Jan.	Feb.	Mar.
FINISHED GOODS														
Finished goods	269.8	266.0	268.5	269.6	270.5	271.8	271.5	271.5	274.3	r274.7	275.3	277.1	277.4	276.9
Finished consumer goods	271.2	268.2	270.6	271.5	272.3	273.5	273.0	273.1	275.1	r275.2	275.6	277.4	278.1	277.2
Finished consumer foods	253.5	252.6	251.9	252.8	253.8	257.6	256.3	256.2	254.0	252.7	253.0	256.4	258.2	257.1
Crude	263.6	279.7	279.3	263.1	258.9	262.7	256.9	253.5	253.8	r260.0	273.4	280.1	282.0	282.9
Processed	250.6	248.1	247.4	249.8	251.3	255.0	254.2	254.4	252.0	r249.9	249.1	252.2	253.9	254.4
Nondurable goods less foods	319.4	316.0	320.4	321.0	322.0	322.5	322.1	324.2	324.3	r325.4	325.9	328.1	329.3	328.0
Durable goods	218.5	214.0	216.6	218.1	218.2	218.1	218.3	215.8	224.5	r224.7	225.0	225.8	223.5	223.5
Consumer nondurable goods less food and energy	208.6	204.8	207.3	207.7	208.4	209.5	210.4	211.8	212.6	r213.6	213.4	216.2	218.8	219.6
Capital equipment	264.3	258.1	260.8	262.5	263.8	265.4	265.8	265.3	271.5	r273.0	274.1	276.1	274.8	275.7
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	306.0	302.0	305.8	306.7	307.2	308.5	310.1	309.7	309.4	309.0	309.6	311.3	311.3	310.9
Materials and components for manufacturing	286.2	281.6	284.1	285.1	285.8	287.9	289.8	290.2	290.2	r289.5	289.7	290.8	291.3	290.8
Materials for food manufacturing	260.9	267.5	263.1	259.0	262.4	260.5	261.0	254.6	250.9	r246.8	247.3	252.9	254.3	252.0
Materials for nondurable manufacturing	285.9	279.4	284.3	287.0	287.7	289.2	291.0	291.2	290.9	r289.4	289.5	289.4	289.5	289.5
Materials for durable manufacturing	312.2	306.9	310.6	311.2	310.7	314.4	316.0	317.1	316.7	r314.9	314.4	314.2	313.5	311.2
Components for manufacturing	259.2	254.2	255.4	256.3	257.3	259.5	261.8	263.8	265.1	r266.9	267.7	269.7	271.1	272.0
Materials and components for construction	287.5	282.7	288.0	288.5	289.6	290.4	290.7	290.0	290.1	r290.2	290.8	291.9	292.8	293.3
Processed fuels and lubricants	595.0	598.3	608.5	608.7	605.7	602.0	607.8	601.4	596.9	r595.1	597.7	605.7	597.1	593.5
Manufacturing industries	498.2	503.9	509.0	510.7	505.4	500.3	508.3	500.5	497.5	r496.4	498.6	507.7	498.7	497.1
Nonmanufacturing industries	690.5	681.6	696.2	695.2	694.3	692.0	695.6	690.5	684.7	r682.2	685.3	692.0	683.9	679.4
Containers	276.2	270.9	274.3	276.4	277.2	278.8	280.3	280.6	280.9	r280.6	280.6	282.2	285.2	286.5
Supplies	263.9	258.9	262.4	264.0	264.6	266.0	266.1	266.1	266.6	r267.2	268.7	269.8	270.7	270.9
Manufacturing industries	253.2	246.8	250.6	252.3	253.4	255.0	256.0	256.8	258.2	r259.2	261.5	262.5	263.5	264.8
Nonmanufacturing industries	269.6	265.2	268.7	270.2	270.5	272.0	271.6	271.1	271.2	r271.6	272.7	273.9	274.8	274.4
Feeds	230.4	231.7	239.2	242.9	235.4	232.8	229.1	221.3	215.9	212.0	214.7	215.2	212.7	208.8
Other supplies	276.4	270.6	272.9	273.8	276.3	273.7	279.3	280.7	282.3	r283.7	284.4	285.8	287.6	288.1
CRUDE MATERIALS														
Crude materials for further processing	329.1	334.2	336.3	334.4	335.4	337.3	333.0	327.4	319.9	r313.9	311.6	318.2	321.5	319.9
Foodstuffs and feedstuffs	257.4	262.1	263.5	260.6	264.3	267.2	261.8	253.4	245.7	238.3	233.7	242.5	248.3	247.9
Nonfood materials	481.6	488.4	492.1	492.4	487.4	487.2	485.3	486.0	479.2	r476.3	479.1	481.1	479.3	475.0
Nonfood materials except fuel	413.9	430.9	432.5	428.3	418.1	413.1	413.9	410.2	404.1	r397.8	396.4	399.7	395.1	397.4
Manufacturing industries	429.6	448.6	450.2	445.5	434.2	428.7	429.6	425.4	418.6	r411.7	409.9	413.2	407.6	398.5
Construction	262.4	259.2	261.5	261.7	262.6	262.6	263.1	263.6	264.7	r264.8	267.1	269.6	272.1	275.1
Crude fuel	676.5	703.6	716.6	738.4	759.2	781.2	786.7	788.7	779.0	r792.5	814.7	810.0	823.5	837.7
Manufacturing industries	865.4	805.8	821.9	850.6	877.2	902.6	883.0	911.4	898.4	915.8	944.5	936.3	953.4	972.8
Nonmanufacturing industries	674.3	635.0	645.8	662.2	678.5	698.1	687.8	704.8	697.8	r708.2	725.3	723.6	734.4	744.5
SPECIAL GROUPINGS														
Finished goods excluding foods	273.2	268.7	272.1	273.3	274.1	274.7	274.6	274.7	279.1	r280.0	280.6	282.3	281.8	281.5
Finished consumer goods excluding foods	276.3	272.5	276.1	277.0	277.7	277.9	277.7	277.9	281.6	r282.4	282.8	284.4	284.1	283.3
Finished consumer goods less energy	233.9	230.2	231.8	232.8	233.4	235.0	235.0	234.9	237.2	r237.2	237.3	238.8	240.8	240.7
Intermediate materials less foods and feeds	310.1	305.4	308.5	310.7	311.2	312.7	314.5	314.6	314.6	r314.5	315.1	316.6	316.6	316.3
Intermediate materials less energy	285.2	280.5	283.7	284.7	285.5	287.2	288.5	288.7	288.8	r288.5	289.0	290.1	290.9	290.7
Intermediate foods and feeds	250.7	255.6	254.9	253.1	253.2	251.1	250.2	243.5	239.3	r235.2	236.4	240.4	240.6	237.8
Crude materials less agricultural products	545.8	551.8	556.0	557.5	551.3	550.6	549.1	551.4	543.4	r540.7	544.1	545.7	543.9	538.2
Crude materials less energy	254.0	259.6	261.1	257.9	259.7	261.8	258.0	250.4	243.2	r235.8	231.6	238.2	243.4	242.8

[1] Data for November 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

24. Producer Price Indexes, by commodity groupings

[1967=100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981										1982		
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. [1]	Dec.	Jan.	Feb.	Mar.
	All commodities	293.4	290.3	293.4	294.1	294.8	296.2	296.4	295.7	296.1	295.5	295.9	298.2	298.5	297.9
	All commodities (1957-59 = 100)	311.3	308.0	311.3	312.0	312.8	314.3	314.5	313.7	314.2	313.5	313.9	316.4	316.7	316.1
	Farm products and processed foods and feeds	251.5	253.5	253.8	252.9	254.3	256.8	254.2	250.3	246.0	[r]242.5	241.2	246.2	248.5	247.5
	Industrial commodities	304.1	299.6	303.5	304.7	305.1	306.2	307.2	307.4	309.0	[r]309.3	310.1	311.7	311.4	311.0
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	254.9	260.7	263.3	259.6	260.7	263.3	257.9	251.1	243.1	237.4	234.5	242.1	247.1	244.6
01-1	Fresh and dried fruits and vegetables	267.0	282.8	286.1	275.3	263.3	285.6	258.1	252.8	248.8	[r]254.0	279.8	288.3	289.3	256.4
01-2	Grains	248.4	261.8	264.7	257.7	257.1	257.4	242.7	227.0	227.6	226.5	213.6	225.2	223.2	220.9
01-3	Livestock	248.0	239.3	248.6	251.8	263.0	266.5	262.0	257.3	244.5	231.1	225.0	236.8	251.2	255.6
01-4	Live poultry	201.2	213.5	195.4	207.2	210.0	215.3	210.3	196.7	185.7	175.0	171.4	186.8	197.3	197.7
01-5	Plant and animal fibers	242.0	270.1	274.2	258.3	258.6	251.3	232.5	208.5	211.7	198.5	188.4	198.2	193.6	199.7
01-6	Fluid milk	287.4	289.5	287.2	283.6	286.0	284.3	285.0	287.3	294.3	298.2	296.7	297.6	295.8	292.5
01-7	Eggs	187.1	180.4	196.2	185.0	174.6	185.1	190.7	193.2	193.8	209.7	195.5	187.0	200.6	204.0
01-8	Hay, hayseeds, and oilseeds	274.1	289.5	296.3	299.0	285.3	290.0	284.3	267.2	230.4	221.1	218.8	218.4	217.6	213.7
01-9	Other farm products	274.3	295.9	295.9	259.7	242.7	250.2	263.9	259.9	263.3	[r]273.1	280.2	280.1	273.7	273.0
02	Processed foods and feeds	248.7	248.5	247.6	248.2	249.9	252.2	251.2	248.9	246.6	[r]244.3	244.0	247.4	248.3	249.1
02-1	Cereal and bakery products	255.5	252.2	253.9	256.3	256.4	258.3	257.7	258.5	256.9	256.5	255.9	256.6	255.3	254.2
02-2	Meats, poultry, and fish	246.2	242.0	239.1	245.2	248.6	257.1	254.4	253.3	246.6	240.0	236.3	244.2	247.4	249.7
02-3	Dairy products	245.7	245.1	245.4	244.6	245.2	245.1	245.3	245.5	246.8	246.9	247.2	247.7	248.0	248.0
02-4	Processed fruits and vegetables	261.1	256.2	258.0	259.4	262.5	265.9	267.3	270.0	271.7	[r]270.5	271.4	272.8	274.7	275.7
02-5	Sugar and confectionery	276.8	302.0	284.5	282.8	274.8	266.0	267.3	246.8	246.7	[r]244.1	250.9	260.8	260.3	255.0
02-6	Beverages and beverage materials	247.5	245.4	246.0	247.6	248.1	249.0	249.4	249.1	250.0	[r]251.4	251.5	253.5	254.2	255.7
02-7	Fats and oils	227.5	229.8	232.4	228.2	227.3	234.8	229.5	224.3	223.4	[r]221.5	219.3	217.0	218.1	214.1
02-8	Miscellaneous processed foods	250.1	249.2	249.9	251.1	251.5	252.2	252.1	253.0	249.9	250.1	250.1	250.5	250.9	249.6
02-9	Prepared animal feeds	230.3	231.1	237.7	241.0	234.3	232.2	229.9	222.9	218.1	[r]214.7	217.2	217.7	215.4	212.9
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	199.6	195.2	197.6	199.2	200.1	201.3	202.4	202.9	204.0	[r]203.6	203.1	203.7	204.2	205.0
03-1	Synthetic fibers (12/75 = 100)	156.7	148.9	151.5	156.4	157.9	159.7	161.2	161.0	162.7	[r]161.6	162.4	163.7	164.1	163.8
03-2	Processed yarns and threads (12/75 = 100)	137.8	134.6	135.0	136.6	139.3	140.3	142.0	142.3	144.4	140.3	138.8	135.3	134.9	140.8
03-3	Gray fabrics (12/75 = 100)	146.7	144.7	146.6	145.8	147.4	148.2	149.0	149.1	149.0	[r]147.4	147.7	148.3	147.4	147.1
03-4	Finished fabrics (12/75 = 100)	125.2	123.2	124.9	125.7	125.6	126.0	126.8	126.8	126.7	126.5	125.8	126.7	126.9	125.7
03-81	Apparel	185.5	181.4	184.3	185.2	186.2	187.2	187.8	189.0	189.9	[r]190.8	189.1	190.1	191.0	191.7
03-82	Textile housefurnishings	228.2	221.3	222.1	224.0	223.9	227.1	229.8	232.2	233.0	[r]233.4	238.1	241.9	245.5	246.2
04	Hides, skins, leather, and related products	261.5	261.2	263.5	263.7	261.6	261.1	261.3	261.7	260.0	[r]259.8	262.7	264.5	263.3	262.7
04-2	Leather	319.5	322.5	337.8	330.0	321.0	319.0	313.7	313.2	313.7	311.3	311.9	320.3	317.8	315.5
04-3	Footwear	241.2	240.4	241.1	241.4	241.5	242.4	242.5	242.9	239.6	[r]239.8	241.7	241.4	239.2	240.6
04-4	Other leather and related products	243.5	239.4	238.5	244.2	244.3	242.9	245.1	245.0	245.0	[r]245.4	250.5	252.7	253.3	253.3
05	Fuels and related products and power	694.4	698.5	707.2	709.0	707.6	704.9	704.3	703.5	699.1	[r]699.1	702.7	705.8	697.6	690.1
05-1	Coal	497.3	481.1	486.1	487.3	491.7	505.5	507.0	510.2	510.8	[r]512.7	515.6	526.1	529.1	527.0
05-2	Coke	456.5	430.1	430.1	467.9	469.7	469.7	469.7	469.7	469.7	[r]469.7	470.3	470.3	470.3	468.1
05-3	Gas fuels [2]	939.8	889.9	907.8	933.9	954.6	969.4	949.3	976.6	985.6	[r]983.0	1007.7	990.2	987.9	993.8
05-4	Electric power	368.8	351.2	355.5	360.4	366.6	374.6	385.8	383.8	378.4	[r]378.3	383.8	382.5	382.6	404.1
05-61	Crude petroleum [3]	803.6	842.8	842.5	839.9	815.9	799.9	796.8	795.8	788.2	[r]785.9	787.4	787.4	770.4	745.0
05-7	Petroleum products, refined [4]	805.8	825.5	840.9	835.3	828.1	816.3	813.4	806.1	802.3	[r]799.3	799.3	802.9	789.4	770.5
06	Chemicals and allied products	287.8	290.4	286.0	289.6	290.5	291.3	293.3	293.3	292.4	[r]292.0	292.7	293.4	294.5	294.6
06-1	Industrial chemicals [5]	363.8	354.5	362.4	368.5	369.7	370.4	371.5	371.8	367.9	[r]363.7	364.6	363.8	362.8	362.6
06-21	Prepared paint	249.9	246.6	248.1	250.0	250.0	250.7	250.7	250.7	250.7	[r]254.5	256.7	259.3	259.3	259.3
06-22	Paint materials	300.2	290.5	295.4	300.3	300.8	304.5	306.5	308.0	308.1	[r]308.3	307.9	308.7	308.6	308.8
06-3	Drugs and pharmaceuticals	193.4	189.3	191.0	192.4	193.2	195.5	195.0	197.8	198.5	[r]198.2	199.7	200.9	203.0	204.8
06-4	Fats and oils, inedible	295.6	285.7	312.7	312.1	303.1	290.9	305.6	285.6	277.7	282.5	280.4	272.8	274.2	290.1
06-5	Agricultural chemicals and chemical products	264.8	275.8	277.8	279.1	288.9	289.9	293.4	292.6	293.1	[r]285.7	294.5	295.8	297.9	297.0
06-6	Plastic resins and materials	289.2	279.4	285.1	287.9	290.0	295.9	297.5	296.8	299.5	[r]293.2	297.0	293.8	295.9	296.8
06-7	Other chemicals and allied products	254.4	248.3	255.3	254.8	256.3	254.8	257.3	257.4	256.9	[r]259.9	260.2	262.8	265.0	267.7
07	Rubber and plastic products	232.8	228.4	230.8	231.8	233.4	232.1	234.1	235.7	237.3	[r]238.0	239.0	239.5	241.0	241.8
07-1	Rubber and rubber products	256.7	252.1	253.0	254.4	256.8	254.7	259.9	260.3	262.9	[r]264.4	266.4	267.3	269.7	269.3
07-11	Crude rubber	281.7	281.2	279.8	283.2	285.2	284.2	284.7	283.1	279.8	[r]279.0	280.7	281.8	282.1	282.8
07-12	Tires and tubes	250.9	248.6	250.7	251.2	251.2	248.8	249.9	256.5	257.1	[r]255.9	255.9	256.6	259.6	258.3
07-13	Miscellaneous rubber products	252.4	243.5	243.8	245.7	250.9	251.4	253.1	253.9	261.1	[r]266.7	271.4	272.6	274.9	278.1
07-2	Plastic products (6/78 = 100)	128.4	128.0	128.2	128.6	129.1	128.7	129.8	129.9	130.3	[r]130.3	130.3	130.5	130.9	132.0
08	Lumber and wood products	292.8	294.4	299.4	299.4	298.1	296.5	294.5	289.3	284.3	[r]282.1	285.2	285.7	285.4	285.4
08-1	Lumber	325.2	326.2	333.6	336.3	335.8	332.4	329.9	320.2	311.7	[r]306.6	308.7	310.6	308.3	308.1
08-2	Millwork	273.4	275.7	276.5	274.8	272.2	273.6	272.3	271.4	271.3	[r]271.8	273.6	276.8	276.4	276.4
08-3	Plywood	245.7	248.8	256.0	248.3	251.5	247.8	245.6	240.8	234.3	[r]233.5	239.2	236.8	235.7	237.1
08-4	Other wood products	239.2	236.9	238.3	238.2	239.8	240.7	239.8	240.5	239.9	[r]239.3	239.5	239.4	239.8	239.6

See footnotes at end of table.

24. Continued—Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1980	1981										1982		
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.[1]	Dec.	Jan.	Feb.	Mar.
	INDUSTRIAL COMMODITIES — Continued														
09	Pulp, paper, and allied products	273.7	269.0	271.4	272.1	272.9	274.9	275.9	277.8	279.2	r280.4	280.7	283.9	285.4	286.3
09-1	Pulp, paper, and products, excluding building paper and board	271.0	268.8	268.6	269.9	271.2	272.3	273.7	274.8	275.7	r275.8	276.2	276.1	277.0	277.3
09-11	Woodpulp	388.1	390.2	394.1	394.2	394.2	394.2	394.2	394.2	402.3	r413.7	417.0	412.8	412.8	414.1
09-12	Wastepaper	175.7	185.1	184.2	182.7	182.9	182.1	182.1	178.5	165.1	144.5	143.4	125.2	128.8	129.2
09-13	Paper	280.8	273.8	275.2	275.9	278.5	279.7	282.1	285.9	287.8	r287.4	287.5	288.8	289.5	290.5
09-14	Paperboard	258.2	255.1	255.7	258.8	259.2	259.4	260.6	261.6	261.7	261.6	259.3	259.7	261.4	261.1
09-15	Converted paper and paperboard products	258.0	255.3	257.3	258.8	259.9	261.2	262.4	262.8	263.2	r263.1	263.9	263.8	264.9	265.5
09-2	Building paper and board	231.3	227.9	232.5	237.3	237.4	235.5	234.2	234.2	233.3	r232.1	227.7	233.2	231.1	237.5
10	Metals and metal products	300.4	298.4	298.8	299.1	298.4	302.0	304.1	304.9	305.3	r304.2	303.6	305.1	306.0	303.6
10-1	Iron and steel	333.8	329.2	331.0	330.4	330.1	338.8	339.9	339.8	341.3	r340.0	339.7	343.1	343.0	342.4
10-13	Steel mill products	337.6	328.7	331.8	331.8	332.2	344.9	344.9	345.3	348.7	348.6	348.9	360.8	360.5	360.5
10-2	Nonferrous metals	290.0	288.5	289.4	287.7	284.5	282.8	287.3	289.4	285.4	r281.1	277.5	275.4	274.2	267.6
10-3	Metal containers	315.9	314.1	314.1	314.1	314.1	315.2	318.7	318.8	318.2	r318.1	318.2	323.4	325.4	326.1
10-4	Hardware	262.4	258.6	258.5	259.4	259.7	263.8	265.3	267.8	269.5	r271.5	269.4	271.3	272.5	278.7
10-5	Plumbing fixtures and brass fittings	267.4	258.5	265.3	266.2	268.9	270.9	271.2	271.6	272.9	r273.1	273.9	274.4	276.1	278.9
10-6	Heating equipment	223.9	219.5	219.8	222.3	223.5	226.4	227.9	228.5	229.0	r228.6	229.2	232.2	231.9	233.5
10-7	Fabricated structural metal products	295.4	289.4	293.1	294.0	295.0	297.9	298.3	300.0	302.6	r303.2	302.7r	303.1	303.5	304.5
10-8	Miscellaneous metal products	270.8	264.7	267.2	268.7	269.4	272.0	272.9	273.7	276.1	r276.0	281.4	284.3	284.0	284.6
11	Machinery and equipment	263.1	257.5	259.6	260.7	262.1	264.8	266.2	268.1	269.3	r270.4	271.8	273.5	274.9	275.7
11-1	Agricultural machinery and equipment	287.7	279.8	282.5	285.7	286.8	288.1	290.3	292.8	295.5	r300.8	301.3	302.2	303.7	304.6
11-2	Construction machinery and equipment	320.8	312.8	317.0	318.4	320.1	323.8	325.0	326.5	328.3	329.6	332.0	337.0	338.1	337.4
11-3	Metalworking machinery and equipment	301.2	294.9	298.7	299.9	301.3	302.9	303.5	305.3	306.6	r307.9	312.2	313.7	315.8	317.0
11-4	General purpose machinery and equipment	288.5	282.3	284.4	285.9	287.0	290.6	292.3	293.9	295.1	r296.2	297.2	298.6	300.8	301.5
11-6	Special industry machinery and equipment	308.0	301.0	303.2	307.2	308.8	311.0	310.3	312.8	314.6	r315.0	316.5	318.5	320.3	320.6
11-7	Electrical machinery and equipment	220.1	216.0	217.4	217.5	219.2	221.1	222.8	224.2	225.3	226.0	226.9	228.3	229.4	230.5
11-9	Miscellaneous machinery	252.3	247.0	248.5	248.8	250.1	254.0	256.0	258.5	258.0	r258.8	259.8	261.3	263.4	264.1
12	Furniture and household durables	198.4	195.8	196.4	197.4	197.3	199.5	199.6	201.0	201.3	r202.1	202.2	202.7	203.9	204.7
12-1	Household furniture	219.4	214.5	216.5	216.4	218.6	220.0	220.7	222.2	222.8	r225.1	227.0	228.2	228.3	228.5
12-2	Commercial furniture	257.6	253.4	254.5	257.7	257.9	258.7	259.1	261.6	262.1	r263.3	264.1	268.6	271.6	273.0
12-3	Floor coverings	178.6	174.1	175.3	179.5	180.7	182.8	181.9	181.7	180.9	r182.3	180.7	179.6	179.8	179.8
12-4	Household appliances	186.9	184.2	185.1	185.5	186.1	188.8	189.1	190.1	190.8	r190.9	190.2	192.0	193.8	195.8
12-5	Home electronic equipment	88.1	91.4	90.9	90.8	88.7	87.4	87.6	87.8	88.1	88.0	87.8	87.5	87.5	86.8
12-6	Other household durable goods	280.8	270.1	275.3	278.7	278.4	282.1	280.9	285.0	285.8	r286.3	285.5	282.8	283.0	284.3
13	Nonmetallic mineral products	308.5	300.9	310.8	312.0	313.6	314.3	314.1	313.2	313.3	r313.7	313.6	316.1	318.4	319.7
13-11	Flat glass	212.9	204.8	210.2	210.2	210.3	218.3	218.3	218.3	218.5	218.5	218.5	216.0	216.1	216.2
13-2	Concrete ingredients	296.3	292.6	297.4	297.5	297.5	297.7	298.0	298.5	298.4	r298.5	298.5	305.9	308.1	309.5
13-3	Concrete products	291.2	285.9	289.9	291.2	293.5	293.4	293.4	292.9	293.3	r293.4	293.5	294.8	295.6	296.0
13-4	Structural clay products, excluding refractories	249.7	244.6	249.0	250.1	250.7	250.9	250.9	255.3	256.2	r256.5	257.1	257.1	257.4	257.4
13-5	Refractories	302.5	298.1	298.4	304.0	307.1	307.1	307.1	307.1	307.8	r308.9	309.8	315.4	330.9	336.4
13-6	Asphalt roofing	407.0	380.5	415.9	407.4	409.5	421.9	420.9	401.6	402.9	r410.2	404.2	390.7	398.8	392.8
13-7	Gypsum products	256.2	257.6	256.8	261.1	260.7	258.7	255.3	252.9	252.4	251.3	249.7	250.4	255.0	260.7
13-8	Glass containers	328.5	311.4	326.7	335.3	335.3	335.5	335.5	335.5	335.5	r335.5	334.8	334.7	349.6	355.2
13-9	Other nonmetallic minerals	463.9	441.7	479.1	477.8	476.8	476.2	475.3	474.3	473.3	473.5	475.4	474.9	479.0	480.1
14	Transportation equipment (12/68 = 100)	235.4	228.1	231.9	233.6	234.3	235.0	235.9	231.8	244.5	r246.3	246.7	248.3	244.7	244.9
14-1	Motor vehicles and equipment	237.5	229.5	233.9	236.0	236.7	237.4	238.4	232.8	247.8	r248.9	249.2	250.4	246.1	246.4
14-4	Railroad equipment	338.2	333.9	335.7	331.2	331.4	338.1	338.7	338.7	336.7	r341.3	346.3	352.4	352.4	352.8
15	Miscellaneous products	265.6	264.0	266.0	266.9	266.3	263.2	262.6	267.0	268.5	r269.5	267.3	268.4	273.7	272.9
15-1	Toys, sporting goods, small arms, ammunition	212.2	211.1	211.3	211.4	211.2	213.2	212.7	213.6	213.0	r212.7	213.8	218.3	221.0	221.6
15-2	Tobacco products	268.3	256.3	259.7	259.7	259.7	268.8	268.8	274.5	278.2	r278.2	277.9	277.9	308.4	308.4
15-3	Notions	258.6	247.3	248.4	267.8	268.0	267.5	267.7	267.8	269.7	269.7	269.7	270.5	270.7	271.8
15-4	Photographic equipment and supplies	210.1	211.2	212.4	212.5	212.5	211.4	207.1	208.7	208.9	r209.0	209.5	210.3	210.8	212.5
15-5	Mobile homes (12/74 = 100)	(6)	155.0	(6)	(6)	(6)	158.1	158.3	158.7	159.1	r159.3	159.0	159.1	159.6	161.6
15-9	Other miscellaneous products	346.9	351.3	349.0	349.4	346.9	333.1	334.6	345.5	348.5	r344.8	343.2	341.9	340.9	334.3

[1] Data for November 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Prices for natural gas are lagged 1 month.

[3] Includes only domestic production.

[4] Most prices for refined petroleum products are lagged 1 month.

[5] Some prices for industrial chemicals are lagged 1 month.

[6] Not available.

r = revised.

25. Producer Price Indexes, for special commodity groupings

[1967=100 unless otherwise specified]

Commodity grouping	Annual average 1981	1981 Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.[1]	Dec.	1982 Jan.	Feb.	Mar.
All commodities — less farm products	296.7	291.9	295.0	298.1	298.7	299.0	298.7	298.5	299.5	r299.4	300.0	301.9	301.8	301.4
All foods	251.9	253.4	251.4	250.3	252.2	256.2	253.7	251.7	249.1	r247.4	248.0	252.0	253.5	251.5
Processed foods	252.2	252.3	250.3	250.5	253.1	256.0	255.0	252.8	250.0	r247.6	248.9	251.0	252.2	252.1
Industrial commodities less fuels	....	258.6	261.8	262.9	263.5	265.0	266.1	266.4	268.7	r269.0	269.4	270.9	271.4	271.6
Selected textile mill products (Dec. 1975 = 100)	135.9	132.2	134.5	135.7	136.9	136.8	137.2	138.1	138.2	r138.4	138.3	139.3	140.0	139.0
Hosiery	134.3	130.5	134.2	134.6	135.7	135.8	135.3	135.5	136.5	136.5	136.7	137.0	137.0	137.5
Underwear and nightwear	203.5	202.0	202.1	202.3	203.5	204.7	204.7	204.7	204.7	r205.7	206.6	212.4	216.0	216.4
Chemicals and allied products, including synthetic rubber and fibers and yarns	278.6	271.0	276.1	279.0	281.2	282.3	284.0	284.4	283.8	r283.2	284.0	284.9	286.0	285.8
Pharmaceutical preparations	186.8	182.1	184.0	185.7	186.6	188.0	188.4	191.6	192.8	r192.5	193.0	195.5	199.0	200.0
Lumber and wood products, excluding millwork	303.1	304.8	312.3	311.5	312.2	308.7	306.2	298.0	290.1	r286.4	290.4	290.2	293.3	298.6
Special metals and metal products	279.4	273.5	276.8	277.9	277.9	280.2	281.9	280.1	286.7	r286.8	286.6	288.0	288.1	285.5
Fabricated metal products	280.0	274.7	277.0	278.5	279.0	281.7	283.1	283.9	286.0	r287.0	287.9	290.0	290.4	291.5
Copper and copper products	204.0	204.8	207.7	206.6	203.7	202.5	206.2	205.1	201.9	r198.9	195.9	196.1	194.1	191.0
Machinery and motive products	256.7	250.2	253.1	254.4	255.6	257.4	258.6	257.7	264.3	r265.8	266.7	268.5	267.6	268.2
Machinery and equipment, except electrical	288.3	281.9	284.3	285.9	287.3	290.4	291.7	293.8	295.0	r296.4	297.8	300.1	301.6	302.2
Agricultural machinery, including tractors	296.2	288.3	289.6	293.7	294.8	295.6	298.2	301.6	305.7	r312.5	312.4	313.7	314.6	315.5
Metalworking machinery	329.4	323.5	325.9	327.1	328.3	330.1	331.4	333.9	336.7	r339.5	339.8	342.1	343.3	346.4
Numerically controlled machine tools (Dec. 1971 = 100)	239.4	235.7	235.7	237.3	241.4	241.7	241.8	241.8	241.8	r242.2	242.3	240.5	240.1	240.3
Total tractors	324.0	311.8	316.8	322.0	322.5	325.5	327.8	330.7	338.3	r342.2	340.4	346.2	346.2	346.4
Agricultural machinery and equipment less parts	290.0	281.5	283.2	286.7	287.9	288.6	291.1	294.0	297.6	r303.5	303.9	305.3	306.3	307.3
Farm and garden tractors less parts	298.9	287.6	289.3	297.7	298.0	298.0	301.4	305.5	313.0	r319.6	318.5	318.5	318.5	318.8
Agricultural machinery, excluding tractors less parts	294.4	288.1	290.2	290.8	292.5	293.9	295.8	298.7	299.9	r300.5	309.3	310.0	311.6	307.3
Industrial valves	314.8	310.1	314.0	314.3	315.3	317.5	319.8	322.7	322.4	r323.4	321.9	325.2	326.8	327.1
Industrial fittings	302.1	298.9	302.7	303.0	303.0	303.0	303.0	304.3	304.1	304.1	304.1	304.1	304.1	304.1
Construction materials	283.0	279.0	283.9	284.2	285.0	285.7	285.5	284.4	284.6	284.1	285.1	286.4	288.9	287.4

[1] Data for November 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r=revised.

26. Producer Price Indexes, by durability of product

[1967=100]

Commodity grouping	Annual average 1981	1981 Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.[1]	Dec.	1982 Jan.	Feb.	Mar.
Total durable goods	269.6	264.9	267.8	268.6	269.1	270.8	271.9	271.8	275.0	r275.4	275.9	277.4	277.3	277.3
Total nondurable goods	312.4	310.9	314.2	314.8	315.7	316.8	316.2	315.0	312.8	r311.4	311.6	314.7	315.3	314.2
Total manufactures	285.9	282.3	285.3	286.2	286.9	288.0	288.6	288.3	289.8	r289.7	290.0	291.8	291.9	291.9
Durable	268.6	264.4	267.2	268.2	268.9	270.6	271.7	271.7	275.1	r275.8	276.3	277.8	277.7	277.8
Nondurable	303.6	301.7	304.9	305.7	306.4	306.9	306.9	306.3	305.5	r304.5	304.5	306.8	307.2	305.6
Total raw or slightly processed goods	330.7	331.2	334.6	334.2	335.4	337.9	335.6	332.7	326.4	r323.3	323.8	329.0	330.6	329.9
Durable	271.4	281.7	286.0	280.4	272.4	271.2	275.9	270.4	253.7	r253.4	248.4	254.4	254.4	250.7
Nondurable	334.0	333.8	337.1	337.1	338.9	341.8	339.1	336.3	330.0	r327.4	328.3	333.4	335.1	334.7

[1] Data for November 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r=revised.

27. Producer Price Indexes for the output of selected SIC industries

[1967=100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981 Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.[1]	Dec.	1982 Jan.	Feb.	Mar.
	MINING														
1011	Iron ores (12/75 = 100)	167.3	166.1	166.1	166.1	166.1	166.1	166.1	166.1	166.1	r171.3	171.3	171.3	171.3	171.3
1092	Mercury ores (12/75 = 100)	346.0	335.4	354.1	347.9	352.0	358.3	365.4	364.5	354.1	364.1	343.7	347.9	313.7	325.0
1211	Bituminous coal and lignite	483.9	478.5	483.5	484.5	488.4	502.1	503.4	506.0	506.2	r507.8	510.7	521.3	524.7	521.9
1311	Crude petroleum and natural gas	888.8	901.7	908.6	919.7	713.7	911.5	900.3	913.6	900.8	r907.5	922.6	917.6	913.5	904.7
1442	Construction sand and gravel	277.3	275.2	278.0	278.4	278.4	278.4	278.2	279.2	279.7	r279.6	280.4	287.0	289.5	292.7
1455	Kaolin and ball clay (6/76 = 100)	136.7	137.1	137.1	137.1	137.1	137.1	137.1	137.1	143.4	143.4	143.4	147.1	148.8	149.6
	MANUFACTURING														
2011	Meatpacking plants	243.1	236.1	237.8	243.6	245.9	252.6	250.9	252.7	244.1	r237.0	234.5	236.6	243.8	247.0
2013	Sausages and other prepared meats	241.3	230.4	227.5	230.4	236.1	248.0	254.0	253.9	252.2	r248.9	246.7	245.7	250.5	248.2
2016	Poultry dressing plants	192.0	203.9	186.7	196.2	196.3	200.6	201.2	188.8	175.5	172.8	166.7	(2)	(2)	(2)
2021	Creamery butter	274.8	273.6	273.4	273.4	273.5	273.8	273.7	275.0	279.2	r279.5	275.0	275.0	276.4	276.6

See footnotes at end of table.

27. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981										1982		
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.[1]	Dec.	Jan.	Feb.	Mar.
	MANUFACTURING—Continued														
2022	Cheese, natural and processed (12/72 = 100)	215.8	215.7	216.2	216.2	216.1	213.8	214.5	215.0	215.4	215.9	217.1	218.6	217.9	218.8
2024	Ice cream and frozen desserts (12/72 = 100)	211.9	210.6	211.4	212.4	212.4	212.7	212.7	212.7	212.5	212.5	212.8	212.8	212.8	216.9
2033	Canned fruits and vegetables	248.5	241.5	244.0	245.9	248.9	251.6	252.9	254.3	257.0	r256.4	258.8	259.6	262.2	262.7
2034	Dehydrated food products (12/73 = 100)	177.6	172.9	174.2	175.3	175.0	180.5	178.7	183.4	182.1	r181.4	182.1	184.0	181.8	181.5
2041	Flour mills (12/71 = 100)	195.0	195.1	201.5	199.4	189.3	196.5	191.0	185.3	181.1	181.5	188.3	191.4	187.4	187.3
2044	Rice milling	277.2	298.0	300.9	300.3	300.3	297.4	284.3	268.2	247.3	235.4	215.1	205.9	192.2	188.5
2048	Prepared foods, n.e.c. (12/75 = 100)	124.6	128.6	129.5	129.8	127.5	125.9	124.8	119.6	117.3	118.4	118.4	118.6	118.5	114.8
2061	Raw cane sugar	273.5	318.8	275.7	224.8	263.3	272.2	254.6	212.3	219.9	224.3	230.8	247.6	245.1	238.0
2063	Beet sugar	320.6	370.7	350.5	334.4	339.7	274.1	287.5	270.7	250.3	r230.4	272.4	292.5	292.6	272.4
2067	Chewing gum	309.8	323.1	323.1	303.1	303.1	303.1	303.2	303.2	303.2	303.2	303.2	303.3	303.3	303.4
2074	Cottonseed oil mills	199.0	204.4	218.4	216.6	212.3	212.0	206.0	182.3	172.0	167.2	182.3	184.9	170.8	158.2
2075	Soybean oil mills	245.8	253.2	259.1	258.1	248.4	253.7	245.8	234.2	229.7	r221.2	221.5	222.6	218.9	217.8
2077	Animal and marine fats and oils	288.1	284.2	301.7	304.3	291.3	288.8	294.1	281.2	274.0	272.3	266.6	263.3	262.8	271.8
2083	Malt	282.5	286.1	286.1	286.1	286.1	286.1	286.1	275.4	275.4	275.4	275.4	287.1	287.1	287.1
2085	Distilled liquor, except brandy (12/75 = 100)	134.7	133.9	133.9	134.9	134.6	134.6	135.5	135.5	135.5	137.9	137.9	140.1	137.9	140.2
2091	Canned and cured seafoods (12/73 = 100)	187.8	187.6	187.7	187.3	187.5	187.4	188.4	188.8	188.2	188.3	188.5	187.2	187.0	187.7
2092	Fresh or frozen packaged fish	369.6	385.2	383.5	378.2	375.5	367.6	347.1	353.5	356.9	r359.8	371.1	389.3	389.8	420.7
2095	Roasted coffee (12/72 = 100)	238.0	238.3	238.5	238.6	238.6	236.4	235.7	237.3	238.2	r239.2	240.4	245.0	247.1	248.7
2098	Macaroni and spaghetti	252.0	243.6	243.6	246.6	246.6	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5
2111	Cigarettes	277.7	264.2	278.3	278.3	278.3	278.3	278.3	284.2	288.4	288.4	288.4	288.4	318.7	318.7
2121	Cigars	169.1	167.0	168.5	168.5	168.5	169.7	169.7	174.5	174.5	r174.5	171.6	171.6	r175.6	175.6
2131	Chewing and smoking tobacco	320.9	320.7	320.8	320.8	320.8	321.0	321.3	325.3	326.1	r326.1	326.0	326.0	348.4	348.4
2211	Weaving mills, cotton (12/72 = 100)	234.1	232.3	236.3	233.5	234.3	234.7	237.4	236.0	233.2	r229.8	226.2	227.5	228.9	228.5
2221	Weaving mills, synthetic (12/77 = 100)	135.6	133.3	134.9	135.7	137.1	138.0	139.3	139.5	139.4	r139.8	139.5	139.8	139.8	139.9
2251	Women's hosiery, except socks (12/75 = 100)	113.5	108.9	114.1	114.2	115.6	115.5	115.0	115.0	115.2	r115.1	115.3	115.6	115.8	118.2
2254	Knit underwear mills	210.2	209.7	209.8	210.0	210.0	210.7	210.8	210.9	210.9	r212.8	212.9	220.7	234.7	235.5
2257	Circular knit fabric mills (6/76 = 100)	110.8	109.1	110.8	110.5	110.4	111.0	112.0	111.9	112.0	r112.4	111.7	111.8	112.3	110.6
2261	Finishing plants, cotton (6/76 = 100)	144.9	144.6	146.9	147.0	148.2	146.3	148.2	145.4	144.9	r143.5	141.4	140.5	140.3	140.8
2262	Finishing plants, synthetics, silk (6/76 = 100)	125.5	124.3	125.2	126.6	126.6	127.1	127.8	129.0	129.1	129.1	128.6	129.3	129.7	129.3
2272	Tufted carpets and rugs	154.3	150.2	151.5	154.5	155.6	158.3	157.4	157.3	155.7	r157.0	156.3	155.1	155.3	158.7
2281	Yarn mills, except wool (12/71 = 100)	221.8	220.7	220.9	224.1	225.8	225.1	225.4	223.8	222.4	r219.8	217.9	216.0	215.3	215.8
2282	Throwing and winding mills (6/76 = 100)	138.6	131.3	131.5	139.1	139.3	142.7	146.8	149.0	154.5	r145.6	149.0	135.3	135.2	150.9
2284	Thread mills (6/76 = 100)	151.4	148.4	150.8	150.9	151.1	151.1	151.1	154.8	157.0	r157.0	158.8	158.8	158.8	158.8
2298	Cordage and twine (12/77 = 100)	134.8	130.9	132.7	134.3	134.3	134.3	134.3	139.3	139.3	139.3	140.7	141.0	141.0	141.0
2311	Men's and boys' suits and coats	223.9	220.1	220.3	220.4	224.6	225.9	226.2	226.5	227.4	r229.4	230.7	230.7	232.1	239.9
2321	Men's and boys' shirts and nightwear	206.8	207.1	207.6	207.1	207.5	210.5	210.6	211.5	212.4	r212.6	211.2	190.9	191.7	192.7
2322	Men's and boys' underwear	230.6	231.0	231.0	231.0	230.7	230.8	230.8	230.8	230.8	r230.0	233.0	237.6	248.0	247.4
2323	Men's and boys' neckwear (12/75 = 100)	114.6	115.4	115.4	115.4	115.4	113.9	113.9	113.9	113.9	113.9	113.9	115.3	117.3	117.3
2327	Men's and boys' separate trousers	186.1	185.3	186.0	185.1	186.1	186.4	186.4	186.4	186.8	r186.8	186.8	187.8	187.0	188.2
2328	Men's and boys' work clothing	248.4	242.3	247.0	248.2	248.5	250.6	251.1	251.2	253.1	r253.2	252.5	251.8	251.8	252.9
2331	Women's and misses' blouses and waists (6/76 = 100)	119.8	116.4	118.3	118.4	118.5	121.0	121.2	121.3	126.4	r126.7	123.9	123.8	123.8	123.9
2335	Women's and misses' dresses (12/77 = 100)	121.1	118.5	118.4	122.3	122.5	123.0	124.3	123.5	123.4	r124.1	122.5	122.6	122.9	123.6
2341	Women's and children's underwear (12/72 = 100)	169.9	168.8	169.0	169.2	170.5	170.6	170.6	170.6	170.8	r171.8	172.2	175.3	175.4	175.7
2342	Brassieres and allied garments (12/75 = 100)	136.6	134.9	135.0	135.0	136.9	138.8	138.8	138.8	138.8	r138.9	140.5	145.5	148.2	148.2
2361	Children's dresses and blouses (12/77 = 100)	120.3	119.2	120.7	120.5	120.5	121.6	121.7	121.7	122.0	r122.5	119.6	122.0	122.0	122.0
2381	Fabric dress and work gloves	289.3	289.1	289.1	292.1	292.1	289.2	289.2	289.2	289.2	289.2	289.2	293.8	297.4	295.5
2394	Canvas and related products (12/77 = 100)	132.1	127.8	129.3	130.0	130.1	130.1	133.1	134.6	137.6	r137.6	140.3	145.5	145.5	147.8
2396	Automotive and apparel trimmings (12/77 = 100)	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
2421	Sawmills and planing mills (12/71 = 100)	226.2	228.6	233.3	234.8	234.8	233.5	231.2	225.2	218.5	r216.5	218.3	218.5	217.6	217.1
2436	Softwood veneer and plywood (12/75 = 100)	142.0	147.2	152.6	145.7	148.1	143.8	139.6	135.4	129.3	r128.0	134.1	132.0	131.1	132.3
2439	Structural wood members, n.e.c. (12/75 = 100)	156.6	157.1	158.3	158.2	158.2	157.6	156.9	156.6	154.8	r154.2	153.0	158.2	158.2	152.3
2448	Wood pallets and skids (12/75 = 100)	152.5	152.7	153.1	153.1	153.0	153.1	152.9	152.8	152.0	r150.4	150.2	148.8	148.0	148.1
2451	Mobile homes (12/74 = 100)	156.8	155.0	155.8	155.9	156.1	156.1	156.3	158.7	158.2	r159.3	160.1	160.2	160.7	162.7
2492	Particleboard (12/75 = 100)	172.8	172.3	180.9	184.5	182.3	179.6	173.6	170.5	168.0	r166.9	164.7	171.3	170.2	173.4
2511	Wood household furniture (12/71 = 100)	197.4	193.3	195.4	196.2	197.5	198.6	199.2	200.1	201.0	r202.0	201.9	203.3	204.2	204.8
2512	Upholstered household furniture (12/71 = 100)	174.9	170.1	171.8	169.7	173.9	175.1	175.1	175.3	175.6	r178.5	184.9	184.1	182.0	182.0
2515	Mattresses and bedsprings	193.7	189.5	190.5	190.4	190.5	191.3	194.6	195.2	195.2	r197.5	202.2	207.5	210.0	210.0
2521	Wood office furniture	254.6	253.5	254.5	255.4	254.6	254.7	254.7	257.1	257.1	r257.0	258.6	262.9	271.8	271.9
2611	Pulp mills (12/73 = 100)	253.2	248.9	251.2	251.3	251.3	251.3	251.3	251.3	256.0	r262.5	265.5	260.9	260.9	262.9
2621	Paper mills, except building (12/74 = 100)	158.3	153.3	153.9	154.3	155.7	157.0	157.4	158.8	158.8	r158.7	158.8	161.8	162.0	161.9
2631	Paperboard mills (12/74 = 100)	151.8	150.8	151.0	152.1	152.3	151.7	152.4	153.7	153.6	r153.5	152.7	152.6	153.6	153.2
2647	Sanitary paper products	343.8	343.0	343.2	344.3	344.4	344.2	344.3	344.3	344.0	r344.1	345.8	346.6	346.6	346.8
2654	Sanitary food containers	245.3	237.9	239.2	239.2	242.2	248.0	252.9	253.2	252.4	r253.3	254.7	255.3	258.3	261.4
2655	Fiber cans, drums, and similar products (12/75 = 100)	163.0	160.7	160.6	160.9	160.9	163.2	163.2	163.2	167.6	r167.8	169.1	175.3	176.5	176.5
2812	Alkalies and chlorine (12/73 = 100)	305.3	295.6	294.4	302.2	309.3	306.2	310.4	316.0	317.7	317.0	323.9	329.3	333.7	336.0
2821	Plastics materials and resins (6/76 = 100)	150.8	144.8	148.1	149.7	150.7	155.0	155.6	156.0	158.3	r153.7	155.7	154.2	158.4	151.7
2822	Synthetic rubber	292.9	283.9	288.1	293.3	298.3	297.3	299.4	299.3	301.0	r301.4	302.7	304.0	306.2	305.6
2824	Organic fiber, noncellulosic	155.7	147.4	149.9	156.2	156.8	158.2	160.3	160.6	164.2	162.5	161.9	161.0	161.1	162.4
2873	Nitrogenous fertilizers (12/75 = 100)	142.7	141.7	147.1	148.5	143.4	143.5	143.9	142.1	142.9	r144.2	141.3	142.4	142.5	142.2
2874	Phosphatic fertilizers	254.1	253.5	251.6	251.5	250.9	249.4	260.0	259.4	259.4	r258.5	258.0	261.4	265.5	261.7
2875	Fertilizers, mixing only	270.2	270.0	271.1	273.6	273.1	275.3	273.0	272.0	273.8	r273.7	269.5	269.1	275.5	278.1
2892	Explosives	312.0	303.9	324.8	314.5	312.6	315.7	310.8	316.5	318.7	r318.5	318.0	315.6	312.9	318.3
2911	Petroleum refining (6/76 = 100)	294.4	299.0	306.0	304.1	302.6	299.1	297.5	295.8	294.6	r293.3	290.2	283.5	288.8	281.9
2951	Paving mixtures and blocks (12/75 = 100)	194.3	189.1	198.1	198.8	198.4	197.1	196.3	196.0	196.3	196.4	198.8	197.2	198.4	198.8
2952	Asphalt felts and coatings (12/75 = 100)	176.7	169.7	180.4	176.3	185.7	182.8	182.3	174.3	174.9	r178.1	175.5	173.5	173.2	178.5
3011	Tires and inner tubes (12/73 = 100)	215.9	213.8	215.5	216.2	216.2	213.1	215.5	220.6	221.0	r220.1	221.5	222.0	224.4	222.3

27. Continued—Producer Price Indexes for the output of selected SIC industries

[1967=100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981										1982		
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.[1]	Dec.	Jan.	Feb.	Mar.
3021	Rubber and plastic footwear (12/71 = 100)	184.4	183.8	183.6	184.0	184.1	185.0	185.4	185.3	185.0	185.0	185.2	188.1	188.5	189.1
3031	Reclaimed rubber (12/73 = 100)	193.4	187.8	187.7	187.7	187.7	192.9	200.3	200.3	200.3	r200.3	198.1	198.1	198.1	204.9
3079	Miscellaneous plastic products (6/78 = 100)	128.8	126.3	128.7	129.1	128.6	129.2	130.2	130.3	130.8	r130.8	130.8	130.9	131.3	132.5
3111	Leather tanning and finishing (12/77 = 100)	150.6	151.4	158.6	154.7	150.7	151.3	148.5	148.3	149.2	r148.8	147.3	150.7	149.2	148.2
3143	Men's footwear, except athletic (12/75 = 100)	169.1	167.8	168.7	168.9	169.6	170.7	171.4	170.9	170.5	170.6	171.5	172.6	171.6	173.6
3144	Women's footwear, except athletic	217.8	218.7	218.7	219.3	218.5	218.9	217.8	218.2	212.5	r212.7	214.6	213.8	211.3	211.6
3171	Women's handbags and purses (12/75 = 100)	158.5	149.7	149.7	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4
3211	Flat glass (12/71 = 100)	175.6	168.1	174.5	174.5	174.6	180.0	180.0	180.0	180.1	180.1	180.1	177.3	177.4	177.5
3221	Glass containers	309.4	311.4	305.6	305.2	305.2	305.4	305.4	305.4	305.4	r305.4	334.8	334.7	349.5	355.1
3241	Cement, hydraulic	328.5	324.4	332.4	332.3	331.0	331.6	331.6	332.0	330.3	r330.3	327.2	338.4	338.2	338.3
3251	Brick and structural clay tile	296.9	290.3	296.0	297.4	298.5	298.9	298.9	298.9	298.5	r300.5	301.8	291.4	291.8	291.8
3253	Ceramic wall and floor tile (12/75 = 100)	132.5	127.1	129.6	132.1	132.1	132.1	132.1	140.4	140.4	r140.4	137.8	138.8	138.8	138.8
3255	Clay refractories	310.4	309.1	309.6	311.9	312.2	312.3	312.3	312.5	313.9	r316.2	317.1	327.0	340.5	367.5
3259	Structural clay products, n.e.c.	222.7	213.0	212.7	223.9	223.9	223.9	223.0	227.5	231.7	r231.7	237.0	198.4	198.7	198.8
3261	Vitreous plumbing fixtures	254.9	248.4	252.0	252.5	255.6	258.7	258.6	259.0	259.0	259.3	260.1	261.1	260.6	260.7
3262	Vitreous china food utensils	335.0	309.0	309.2	336.6	336.6	336.6	336.6	336.8	336.8	344.7	344.7	347.7	347.7	347.3
3263	Fine earthenware food utensils	309.9	307.9	308.2	309.6	309.6	309.6	309.6	313.8	313.8	r315.0	314.4	314.5	314.5	314.4
3269	Pottery products, n.e.c. (12/75 = 100)	160.1	158.5	158.6	160.6	160.7	160.7	160.7	161.8	161.8	r163.7	163.6	164.2	164.2	164.1
3271	Concrete block and brick	270.4	263.2	267.4	271.2	271.2	271.2	274.0	274.2	274.3	r274.2	275.3	274.8	276.0	276.3
3273	Ready-mixed concrete	298.7	295.0	298.5	299.4	301.7	300.7	300.0	299.2	298.5	r299.4	298.5	301.1	301.4	302.0
3274	Lime (12/75 = 100)	172.5	172.6	172.4	172.6	173.0	173.1	173.9	173.7	173.7	r173.5	174.0	178.1	184.0	188.0
3275	Gypsum products	257.3	257.9	257.1	261.4	260.9	261.6	256.9	252.9	251.5	252.5	250.6	250.9	253.9	260.5
3291	Abrasive products (12/71 = 100)	232.5	223.1	232.7	233.2	234.1	235.0	235.1	237.3	237.6	r241.0	240.0	239.9	246.0	247.8
3297	Nonclay refractories (12/74 = 100)	185.3	178.9	178.9	186.6	189.7	189.7	189.7	189.7	189.7	190.2	190.2	191.1	198.1	200.5
3312	Blast furnaces and steel mills	342.8	334.0	336.7	337.3	338.2	350.1	350.0	350.3	353.1	r353.0	353.2	354.9	354.6	354.5
3313	Electrometallurgical products (12/75 = 100)	121.8	120.0	120.8	120.6	120.7	121.2	121.5	121.4	125.4	125.4	125.3	125.3	123.4	120.3
3316	Cold finishing of steel shapes	316.2	306.1	308.2	308.2	309.5	325.0	325.7	328.2	328.4	328.4	328.7	327.0	327.0	327.0
3317	Steel pipes and tubes	341.5	329.1	333.1	334.1	336.3	348.2	350.6	350.5	362.0	362.3	360.1	363.6	364.2	366.0
3321	Gray iron foundries (12/68 = 100)	298.5	295.6	297.0	298.4	298.4	299.6	299.9	302.0	300.3	r305.2	304.7	308.0	310.4	310.6
3333	Primary zinc	326.5	299.7	311.9	332.7	335.1	335.4	353.6	365.9	337.0	337.5	327.3	308.0	306.6	296.6
3334	Primary aluminum	333.5	332.2	332.8	334.2	332.5	334.2	334.4	333.6	333.5	332.5	332.8	332.4	327.9	320.7
3351	Copper rolling and drawing	212.4	211.8	213.1	212.6	210.6	209.4	212.9	214.1	212.3	r209.2	208.6	205.6	204.1	199.6
3353	Aluminum sheet, plate, and foil (12/75 = 100)	175.9	172.1	173.8	174.4	176.1	177.3	177.4	178.0	179.9	r180.2	180.9	181.5	181.6	181.4
3354	Aluminum extruded products (12/75 = 100)	180.1	177.3	180.6	180.7	180.8	181.2	181.3	181.2	181.3	181.4	181.1	180.7	180.8	180.5
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	159.1	157.2	157.3	157.4	157.3	157.2	157.2	157.7	160.0	166.2	166.1	166.1	166.6	165.9
3411	Metal cans	305.3	304.7	304.7	304.7	304.7	305.5	306.7	306.8	307.0	r306.0	306.6	310.3	314.4	315.1
3425	Hand saws and saw blades (12/72 = 100)	201.3	198.0	198.1	200.2	200.2	204.1	204.2	204.6	204.8	r205.0	205.6	211.0	214.2	214.3
3431	Metal sanitary ware	265.0	258.5	262.8	264.8	265.2	269.2	269.7	270.2	270.3	r271.6	272.0	270.9	271.8	273.8
3465	Automotive stampings (12/75 = 100)	148.4	144.2	145.0	145.0	145.2	146.2	148.4	148.9	147.4	149.7	153.7	154.6	152.5	152.6
3482	Small arms ammunition (12/75 = 100)	160.5	157.2	157.8	157.8	157.8	157.8	158.9	159.9	159.9	r159.9	165.3	173.2	173.2	173.2
3493	Steel springs, except wire	245.1	239.5	241.2	241.7	241.9	243.7	248.9	252.4	253.9	r254.1	254.3	258.4	257.2	258.6
3494	Valves and pipe fittings (12/71 = 100)	248.4	244.8	247.6	247.9	248.5	250.0	251.0	252.7	252.9	r253.5	253.8	256.8	257.1	257.4
3498	Fabricated pipe and fittings	361.4	358.5	358.8	358.9	361.6	364.8	370.0	375.1	377.7	r378.6	378.4	378.6	377.7	373.5
3519	Internal combustion engines, n.e.c.	311.0	302.6	306.0	306.2	307.2	312.0	314.2	322.1	323.2	r326.4	321.5	327.3	330.0	330.7
3531	Construction machinery (12/76 = 100)	157.0	152.6	154.4	155.3	156.9	159.0	159.5	160.1	161.0	161.5	162.1	164.8	163.1	163.2
3532	Mining machinery (12/72 = 100)	282.3	276.2	278.5	280.0	280.8	282.7	285.3	288.9	289.5	r290.8	291.8	293.9	297.5	299.6
3533	Oilfield machinery and equipment	395.4	378.2	382.2	394.6	398.3	401.3	408.5	411.3	415.6	r418.2	420.1	427.1	429.1	433.7
3534	Elevators and moving stairways	253.5	250.3	251.2	251.2	251.2	252.1	252.8	254.6	257.0	r260.7	261.4	269.0	269.9	269.9
3542	Machine tools, metal forming types (12/71 = 100)	308.4	301.9	303.0	304.5	305.7	307.6	309.5	312.0	311.7	312.3	313.0	313.5	318.9	324.5
3546	Power driven hand tools (12/76 = 100)	147.1	145.2	146.4	147.0	147.1	148.2	148.4	148.6	149.5	r149.5	149.3	153.3	153.4	153.4
3552	Textile machinery (12/69 = 100)	243.4	240.0	240.4	241.2	244.4	246.2	245.4	248.2	248.0	247.9	250.0	249.8	250.7	252.4
3553	Woodworking machinery (12/72 = 100)	224.5	224.7	225.5	219.1	219.7	224.0	225.4	228.9	228.9	r229.1	229.0	229.4	229.2	229.6
3576	Scales and balances, excluding laboratory	229.2	224.2	230.2	230.2	230.3	229.0	226.6	226.1	229.2	r228.3	226.4	229.2	228.9	229.0
3592	Carburetors, pistons, rings, valves (6/76 = 100)	177.9	171.5	172.0	172.0	176.5	180.8	181.3	182.1	186.4	r187.2	187.1	185.0	189.4	190.2
3612	Transformers	209.7	204.3	206.0	207.8	208.6	210.7	212.8	214.5	217.3	r222.0	219.8	220.3	221.9	222.4
3623	Welding apparatus, electric (12/72 = 100)	227.2	222.1	224.3	225.9	227.2	228.3	229.6	231.6	232.5	r233.2	234.7	235.9	236.0	231.5
3631	Household cooking equipment (12/75 = 100)	141.1	141.1	140.5	140.7	141.0	140.5	141.5	141.6	141.6	r141.9	142.6	144.6	146.3	148.9
3632	Household refrigerators, freezers (6/76 = 100)	132.3	127.8	129.4	129.6	130.8	135.5	135.5	136.4	137.8	r137.9	136.4	136.6	136.6	140.8
3633	Household laundry equipment (12/73 = 100)	174.2	170.9	173.5	173.9	173.6	174.1	174.6	177.2	177.0	r178.4	178.8	178.8	180.4	180.2
3635	Household vacuum cleaners	158.8	158.5	158.4	158.5	158.6	158.6	158.0	158.8	161.3	r161.0	154.0	158.7	158.3	158.8
3636	Sewing machines (12/75 = 100)	146.6	131.9	131.8	153.8	153.8	153.8	153.8	153.8	156.0	r156.0	155.4	155.4	155.2	155.2
3641	Electric lamps	277.5	272.8	275.5	275.1	276.5	275.2	280.0	283.1	285.9	r284.8	282.7	282.0	286.2	283.5
3644	Noncurrent-carrying wiring devices (12/72 = 100)	250.4	240.6	242.6	242.8	251.5	253.3	253.8	258.5	258.7	r262.1	264.8	261.5	261.5	261.5
3646	Commercial lighting fixtures (12/75 = 100)	154.4	151.4	156.1	156.2	156.2	154.4	155.5	157.6	158.9	r158.3	158.4	160.8	161.1	163.2
3648	Lighting equipment, n.e.c. (12/75 = 100)	156.7	152.7	153.2	153.9	153.7	153.8	161.3	161.7	162.0	r162.4	162.7	162.7	167.8	169.8
3671	Electron tubes receiving type	309.7	295.0	295.0	295.1	312.5	327.4	327.5	327.5	327.5	327.8	342.3	371.8	374.9	375.1
3674	Semiconductors and related devices	90.4	91.3	91.2	90.6	90.3	89.2	89.2	91.4	91.6	r92.0	91.9	90.9	90.8	91.2
3675	Electronic capacitors (12/75 = 100)	170.3	173.2	169.7	168.5	171.2	171.4	170.8	172.4	171.5	r168.1	168.0	166.4	168.3	168.6
3676	Electronic resistors (12/75 = 100)	141.3	139.9	140.0	140.8	141.2	142.1	142.5	142.7	142.7	r143.0	142.5	142.9	143.9	144.0
3678	Electronic connectors (12/75 = 100)	154.8	154.5	154.4	153.7	154.3	155.0	155.8	156.5	156.8	156.8	156.6	157.2	158.9	157.1
3692	Primary batteries, dry and wet	182.2	184.2	182.6	181.0	181.0	181.6	182.7	182.7	182.7	182.7	182.7	182.1	185.0	181.2
3711	Motor vehicles and car bodies (12/75 = 100)	150.2	144.2	148.4	149.6	150.3	150.3	150.1	149.4	158.6	r158.7	158.9	159.5	154.5	154.7
3942	Dolls (12/75 = 100)	131.1	132.4	132.4	130.9	130.9	130.9	130.9	130.9	130.9	r130.9	130.6	134.9	136.2	136.2
3944	Games, toys, and children's vehicles	220.5	221.2	221.2	221.8	221.9	222.0	222.0	222.2	222.2	r222.6	221.5	225.8	229.9	231.4
3955	Carbon paper and inked ribbons (12/75 = 100)	138.6	138.4	138.9	138.9	140.4	140.4	140.6	140.6	140.2	r140.2	140.7	140.3	140.3	140.3
3995	Burial caskets (6/76 = 100)	138.5	138.0	138.1	138.3	138.3	138.3	140.6	143.4	143.4	143.4	142.7	142.7	143.8	145.3
3996	Hard surface floor coverings (12/75 = 100)	151.8	149.7	151.5	151.5	151.5	153.3	153.6	153.7	153.7	153.7	153.7	156.1	155.2	158.1

[1] Data for November 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

r = revised.

PRODUCTIVITY DATA

PRODUCTIVITY DATA are compiled by the Bureau of Labor Statistics from establishment data and from estimates of compensation and output supplied by the U.S. Department of Commerce and the Federal Reserve Board.

Definitions

Output is the constant dollar gross domestic product produced in a given period. Indexes of **output per hour of labor input,** or labor productivity, measure the value of goods and services produced per hour of labor. **Compensation per hour** includes wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. The data also include an estimate of wages, salaries, and supplementary payments for the self-employed, except for nonfinancial corporations, in which there are no self-employed. **Real compensation per hour** is compensation per hour adjusted by the Consumer Price Index for All Urban Consumers.

Unit labor cost measures the labor compensation cost required to produce one unit of output and is derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from the current dollar gross domestic product and dividing by output. In these tables, **unit nonlabor costs** contain all the components of unit nonlabor payments except unit profits. **Unit profits** include corporate profits and inventory valuation adjustments per unit of output.

The **implicit price deflator** is derived by dividing the current dollar estimate of gross product by the constant dollar estimate, making the deflator, in effect, a price index for gross product of the sector reported.

The use of the term "man hours" to identify the labor component of productivity and costs, in tables 28 through 31, has been discontinued. **Hours of all persons** is now used to describe the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all-employee hour** is now used to describe labor productivity in nonfinancial corporations where there are no self-employed.

Notes on the data

In the private business sector and the nonfarm business sector, the basis for the output measure employed in the computation of output per hour is Gross Domestic Product rather than Gross National Product. Computation of hours includes estimates of nonfarm and farm proprietor hours.

Output data are supplied by the Bureau of Economic Analysis, U.S. Department of Commerce, and the Federal Reserve Board. Quarterly manufacturing output indexes are adjusted by the Bureau of Labor Statistics to annual estimates of output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are from the Bureau of Economic Analysis and the Bureau of Labor Statistics.

Beginning with the September 1976 issue of the *Review*, the productivity tables were revised to reflect changeover to the new series—private business sector and nonfarm business sector—which differ from the previously published total private economy and nonfarm sector in that output imputed for owner-occupied dwellings and the household and institutions sectors, as well as the statistical discrepancy, are omitted. For a detailed explanation, see J. R. Norsworthy and L. J. Fulco, "New sector definitions for productivity series," *Monthly Labor Review*, October 1976, pages 40–42.

28. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950–81

[1977=100]

Item	1950	1955	1960	1965	1970	1974	1975	1976	1977	1978	1979	1980	1981
Private business sector:													
Output per hour of all persons	50.3	58.2	65.1	78.2	86.1	92.7	94.8	97.9	100.0	99.8	99.5	99.3	100.4
Compensation per hour	20.0	26.3	33.9	41.7	58.2	78.0	85.5	92.9	100.0	108.4	119.3	131.5	144.6
Real compensation per hour	50.4	59.6	69.4	80.0	90.8	95.9	96.3	98.8	100.0	100.7	99.6	96.7	96.4
Unit labor cost	39.8	45.2	52.1	53.3	67.6	84.2	90.2	94.8	100.0	108.6	119.9	132.4	144.0
Unit nonlabor payments	43.5	47.8	50.8	57.8	63.4	78.9	90.7	94.4	100.0	105.1	110.9	118.3	130.5
Implicit price deflator	41.0	46.1	51.7	54.8	66.2	82.4	90.4	94.7	100.0	107.4	116.9	127.6	139.4
Nonfarm business sector:													
Output per hour of all persons	56.2	62.7	68.2	80.4	86.7	93.1	95.0	98.1	100.0	99.8	99.1	98.8	99.7
Compensation per hour	21.8	28.3	35.6	42.8	58.6	78.4	86.0	93.0	100.0	108.5	119.0	130.8	143.9
Real compensation per hour	56.0	63.8	73.0	82.2	91.5	96.4	96.8	99.0	100.0	100.7	98.3	98.2	95.9
Unit labor cost	38.8	45.1	52.3	53.2	67.6	84.3	90.5	94.8	100.0	108.7	120.0	132.4	144.3
Unit nonlabor payments	42.8	47.9	50.5	58.2	64.0	76.1	88.9	94.0	100.0	103.6	108.5	117.6	130.3
Implicit price deflator	40.2	46.0	51.7	54.9	66.4	81.6	89.9	94.5	100.0	107.0	116.2	127.4	139.6
Nonfinancial corporations:													
Output per hour of all employees	([1])	([1])	68.3	78.9	85.4	91.3	94.4	97.4	100.0	100.4	100.4	101.8	103.5
Compensation per hour	([1])	([1])	38.3	43.0	58.3	77.6	85.5	92.5	100.0	108.2	118.7	130.7	143.9
Real compensation per hour	([1])	([1])	74.2	82.6	91.0	95.4	96.3	98.5	100.0	100.5	99.1	96.2	95.9
Unit labor cost	([1])	([1])	54.7	53.8	68.3	85.1	90.6	95.0	100.0	107.8	118.2	129.4	139.1
Unit nonlabor payments	([1])	([1])	54.6	60.6	63.1	75.7	90.9	95.0	100.0	103.8	108.3	117.3	132.3
Implicit price deflator	([1])	([1])	54.7	56.2	68.5	81.8	90.7	95.0	100.0	106.4	114.8	125.2	136.7
Manufacturing:													
Output per hour of all persons	48.5	58.5	60.1	74.6	79.2	90.9	93.5	97.7	100.0	100.9	102.0	101.7	104.5
Compensation per hour	21.5	28.8	36.7	42.9	57.6	78.4	85.5	92.4	100.0	108.2	118.8	131.6	146.2
Real compensation per hour	54.1	66.2	75.1	82.3	89.9	93.8	96.3	98.3	100.0	100.5	99.2	96.8	97.4
Unit labor cost	43.4	51.0	61.1	57.4	72.7	81.1	91.4	94.6	100.0	107.3	116.5	129.4	140.0
Unit nonlabor payments	55.1	59.4	62.0	70.3	66.0	70.4	88.5	95.1	100.0	104.7	105.7	108.7	([1])
Implicit price deflator	48.8	53.4	61.3	61.2	70.7	80.1	90.6	94.7	100.0	106.5	113.4	123.4	([1])

[1] Not available.

29. Annual changes in productivity, hourly compensation, unit costs, and prices, 1971–81

Item	Year											Annual rate of change	
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1950-81	1960-81
Private business sector:													
Output per hour of all persons	3.6	3.5	2.7	−2.3	2.3	3.3	2.1	−0.2	−0.3	−0.2	1.1	2.4	2.1
Compensation per hour	6.6	6.5	8.0	9.4	9.6	8.6	7.7	8.4	10.1	10.2	10.0	6.2	7.2
Real compensation per hour	2.2	3.1	1.7	−1.4	0.4	2.7	1.2	0.7	−1.1	−2.9	−0.3	2.3	1.7
Unit labor cost	2.9	2.9	5.2	11.9	7.2	5.1	5.5	8.6	10.4	10.4	8.8	3.6	5.0
Unit nonlabor payments	7.6	4.5	5.9	4.4	15.0	4.1	5.9	5.1	5.5	6.6	10.3	3.3	4.5
Implicit price deflator	4.4	3.4	5.4	9.4	9.7	4.7	5.6	7.4	8.8	9.2	9.3	3.5	4.9
Nonfarm business sector:													
Output per hour of all persons	3.3	3.7	2.5	−2.4	2.1	3.2	2.0	−0.2	−0.7	−0.3	0.9	2.1	1.8
Compensation per hour	6.6	6.7	7.6	9.4	9.6	8.1	7.6	8.5	9.7	9.9	10.1	5.9	7.0
Real compensation per hour	2.2	3.3	1.3	−1.4	0.4	2.2	1.0	0.7	−1.4	−3.2	−0.3	2.0	1.5
Unit labor cost	3.1	2.6	4.9	12.1	7.4	4.7	5.5	8.7	10.4	10.3	9.0	3.7	5.0
Unit nonlabor payments	7.4	3.2	1.3	5.9	16.7	5.7	6.4	3.6	4.8	8.4	10.8	3.3	4.4
Implicit price deflator	4.5	3.0	3.7	10.1	10.3	5.1	5.8	7.0	8.6	9.7	9.6	3.6	4.8
Nonfinancial corporations:													
Output per hour of all employees	4.8	3.0	2.6	−3.4	3.4	3.2	2.7	0.4	0.0	0.6	2.5	(1)	2.0
Compensation per hour	6.5	5.8	7.7	9.7	10.1	8.2	8.1	8.2	9.7	10.1	10.1	(1)	6.9
Real compensation per hour	2.1	2.5	1.4	−1.1	0.9	2.3	1.5	0.5	−1.4	−3.0	−0.3	(1)	1.4
Unit labor cost	1.6	2.8	4.9	13.6	6.5	4.9	5.3	7.8	9.7	9.5	7.4	(1)	4.8
Unit nonlabor payments	7.4	2.7	1.5	7.1	20.1	4.6	5.2	3.8	4.4	8.3	12.8	(1)	4.0
Implicit price deflator	3.5	2.8	3.8	11.4	10.9	4.8	5.2	6.4	7.9	9.1	9.2	(1)	4.5
Manufacturing:													
Output per hour of all persons	6.1	5.0	5.3	−2.4	2.9	4.4	2.4	0.9	1.1	−0.3	2.7	2.6	2.5
Compensation per hour	6.1	5.4	7.2	10.6	11.9	8.0	8.3	8.2	9.8	10.7	11.1	5.8	6.9
Real compensation per hour	1.8	2.0	0.9	−0.3	2.5	2.1	1.7	0.5	−1.3	−2.5	0.7	2.0	1.4
Unit labor cost	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.3	8.6	11.0	8.2	3.1	4.1
Unit nonlabor payments	11.2	0.8	−3.3	−1.8	25.9	7.4	5.2	4.7	0.9	2.9	(1)	(1)	(1)
Implicit price deflator	3.1	0.5	0.3	9.0	13.1	4.6	5.6	6.5	6.4	8.8	(1)	(1)	(1)

[1] Not available.

30. Quarterly indexes of productivity, hourly compensation, unit costs, and prices, seasonally adjusted

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1979			1980				1981			
	1980	1981	II	III	IV	I	II	III	IV	I	II	III	IV
Private business sector:													
Output per hour of all persons	99.3	100.4	99.7	99.4	99.1	99.5	98.1	99.4	99.1	100.3	101.2	100.9	99.2
Compensation per hour	131.5	144.6	118.1	120.7	123.2	126.4	130.1	133.1	135.9	139.8	143.3	146.5	148.5
Real compensation per hour	98.7	96.4	100.3	99.2	98.0	98.7	96.6	96.9	98.0	96.1	96.9	96.3	95.8
Unit labor cost	132.4	144.0	118.5	121.4	124.3	127.0	131.3	133.9	137.1	139.4	141.6	145.2	149.7
Unit nonlabor payments	118.3	130.5	110.4	111.5	112.2	115.2	116.0	119.7	122.7	127.6	129.3	132.4	132.5
Implicit price deflator	127.6	139.4	115.8	118.1	120.2	123.0	126.1	129.1	132.2	135.4	137.5	140.9	143.9
Nonfarm business sector:													
Output per hour of all persons	98.8	99.7	99.1	98.9	98.8	98.9	98.2	99.0	99.0	100.0	100.4	99.9	98.2
Compensation per hour	130.8	143.9	117.7	120.2	123.0	126.0	129.4	132.3	135.4	139.2	142.4	145.7	147.9
Real compensation per hour	96.2	95.9	100.0	98.8	97.8	98.4	96.0	96.3	95.7	95.7	96.3	95.8	95.4
Unit labor cost	132.4	144.3	118.7	121.5	124.4	127.4	131.8	133.6	136.8	139.1	141.9	145.8	150.6
Unit nonlabor payments	117.6	130.3	107.7	109.2	110.1	113.9	115.1	119.2	122.0	127.8	128.7	132.2	132.7
Implicit price deflator	127.4	139.6	115.1	117.4	119.7	122.9	126.3	128.8	131.9	135.3	137.5	141.2	144.6
Nonfinancial corporations:													
Output per hour of all employees	101.0	103.5	100.7	100.5	99.9	100.2	100.1	101.8	101.8	103.3	103.9	103.8	(1)
Compensation per hour	130.7	143.9	117.6	120.1	122.7	125.7	129.3	132.5	135.5	139.2	142.3	145.5	(1)
Real compensation per hour	96.2	95.9	99.9	98.7	97.5	98.2	95.9	96.5	95.7	95.7	96.2	95.8	(1)
Total unit costs	129.7	140.9	115.3	118.2	121.3	124.2	129.2	131.1	134.1	136.0	136.7	142.2	(1)
Unit labor cost	129.4	139.1	118.8	119.5	122.8	125.4	129.1	130.2	133.1	134.7	137.0	140.2	(1)
Unit nonlabor costs	130.2	148.1	111.2	114.6	117.2	120.9	129.3	133.8	136.9	139.5	143.6	147.7	(1)
Unit profits	90.2	103.4	100.7	97.5	92.2	95.5	83.4	88.1	92.4	106.8	102.8	108.7	(1)
Implicit price deflator	125.2	136.7	113.7	115.9	118.1	121.0	124.1	128.4	129.5	132.7	134.7	138.2	(1)
Manufacturing:													
Output per hour of all persons	101.7	104.5	102.3	102.0	102.1	102.0	100.7	100.7	103.2	104.2	105.2	105.5	102.5
Compensation per hour	131.6	146.2	118.6	119.8	122.3	125.4	130.0	133.9	137.3	141.1	144.8	148.0	150.7
Real compensation per hour	96.8	97.4	100.7	98.5	97.2	98.0	96.5	97.5	97.0	97.1	97.9	97.3	97.2
Unit labor cost	129.4	140.0	115.9	117.5	119.8	122.9	125.0	133.0	133.0	135.5	137.6	140.3	147.0

[1] Not available.

31. Percent change from preceding quarter and year in productivity, hourly compensation, unit costs, and prices, seasonally adjusted at annual rate

[1977=100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	II 1980 to III 1980	III 1980 to IV 1980	IV 1980 to I 1981	I 1981 to II 1981	II 1981 to III 1981	III 1981 to IV 1981	III 1979 to III 1980	IV 1979 to IV 1980	I 1980 to I 1981	II 1980 to II 1981	III 1980 to III 1981	IV 1980 to IV 1981
Private business sector:												
Output per hour of all persons	1.3	−1.1	4.7	3.5	−1.1	−6.5	0.0	0.0	0.8	2.1	1.5	0.0
Compensation per hour	9.5	8.8	11.9	10.4	9.3	5.5	10.3	10.3	10.6	10.1	10.1	9.3
Real compensation per hour	1.6	−3.8	0.5	3.2	−2.3	−2.1	−2.3	−2.0	−0.6	0.3	−0.8	−0.2
Unit labor costs	8.1	9.8	6.9	6.6	10.6	12.9	10.3	10.3	9.7	7.8	8.5	9.2
Unit nonlabor payments	13.7	10.2	17.1	5.3	10.1	0.0	7.4	9.3	10.8	11.5	10.8	8.0
Implicit price deflator	9.8	9.9	10.0	6.2	10.4	8.7	9.4	10.0	10.1	9.0	9.1	8.8
Nonfarm business sector:												
Output per hour of all persons	3.6	−0.2	4.4	1.4	−1.7	−6.8	0.2	0.2	1.2	2.3	0.9	−0.8
Compensation per hour	9.0	9.8	11.7	9.6	9.5	6.2	10.1	10.1	10.5	10.0	10.2	9.2
Real compensation per hour	1.2	−2.7	0.3	2.5	−2.2	−1.5	−2.5	−2.2	−0.7	0.3	−0.8	−0.2
Unit labor costs	5.3	10.1	7.0	8.1	11.5	14.0	9.9	9.9	9.2	7.6	9.2	10.1
Unit nonlabor payments	15.0	9.9	20.2	3.0	11.3	−1.6	9.1	10.8	12.2	11.8	10.9	8.8
Implicit price deflator	8.2	10.0	11.0	6.5	11.4	10.0	9.6	10.2	10.1	8.9	9.7	9.7
Nonfinancial corporations:												
Output per hour of all employees	6.7	0.0	6.3	2.2	−0.5	(1)	1.3	1.9	3.1	3.8	2.0	(1)
Compensation per hour	10.2	9.4	11.4	9.3	9.2	(1)	10.3	10.4	10.8	10.1	9.8	(1)
Real compensation per hour	2.2	−3.1	0.0	2.1	−2.5	(1)	−2.2	−1.9	−0.5	0.3	−0.9	(1)
Total unit costs	6.2	9.4	5.6	8.4	10.3	(1)	11.6	10.5	9.5	7.4	8.4	(1)
Unit labor costs	3.2	9.4	4.8	7.0	9.7	(1)	8.9	8.4	7.4	6.1	7.7	(1)
Unit nonlabor costs	14.7	9.5	7.9	12.3	11.8	(1)	16.8	16.8	15.4	11.1	10.4	(1)
Unit profits	30.3	15.7	77.9	−13.9	15.7	(1)	−8.6	0.3	11.8	23.3	10.7	(1)
Implicit price deflator	7.9	9.9	10.4	6.2	10.7	(1)	9.1	9.6	9.7	8.6	9.3	(1)
Manufacturing:												
Output per hour of all persons	−0.1	10.3	3.8	4.0	1.2	−11.0	−1.2	1.1	2.1	4.5	4.8	−0.7
Compensation per hour	12.7	10.5	11.8	10.8	9.3	7.4	11.8	12.3	12.5	11.4	10.5	9.8
Real compensation per hour	4.6	−2.2	−0.2	3.5	−2.4	−0.4	−1.0	−0.2	1.1	1.5	−0.2	0.2
Unit labor costs	12.8	0.1	7.5	6.5	8.0	20.7	13.2	11.0	10.2	6.6	5.5	10.5

[1] Not available.

LABOR-MANAGEMENT DATA

MAJOR COLLECTIVE BARGAINING DATA are obtained from contracts on file at the Bureau of Labor Statistics, direct contact with the parties, and from secondary sources. Additional detail is published in *Current Wage Developments*, a monthly periodical of the Bureau. Data on work stoppages are based on confidential responses to questionnaires mailed by the Bureau of Labor Statistics to parties involved in work stoppages. Stoppages initially come to the attention of the Bureau from reports of Federal and State mediation agencies, newspapers, and union and industry publications.

Definitions

Data on wage changes apply to private nonfarm industry agreements covering 1,000 workers or more. Data on wage and benefit changes *combined* apply only to those agreements covering 5,000 workers or more. **First-year wage settlements** refer to pay changes going into effect within the first 12 months after the effective date of the agreement. **Changes over the life of the agreement** refer to total agreed-upon settlements (exclusive of potential cost-of-living escalator adjustments) expressed at an average annual rate. **Wage-rate changes** are expressed as a percent of straight-time hourly earnings, while **wage and benefit changes** are expressed as a percent of total compensation.

Effective wage-rate adjustments in major bargaining units measure actual changes during the reference period, whether the result of a newly negotiated increase, a deferred increase negotiated in an earlier year, or a cost-of-living adjustment. Average adjustments are affected by workers receiving no adjustment, as well as by those receiving increases or decreases.

Work stoppages include all known strikes or lockouts involving 1,000 workers or more and lasting a full shift or longer. Data cover all workers idle one shift or more in establishments directly involved in a stoppage. They do not measure the indirect or secondary effect on other establishments whose employees are idle owing to material or service shortages.

32. Wage and benefit settlements in major collective bargaining units, 1977 to date

[In percent]

Measures and industry	Annual average					Quarterly average								
	1977	1978	1979	1980	1981	1979	1980				1981			
						IV	I	II	III	IV	I	II	III	IV
Wage and benefit settlements, all industries:														
First-year settlements	9.6	8.3	9.0	10.4	10.2	8.5	8.8	10.2	11.4	8.5	7.7	11.6	10.5	11.0
Annual rate over life of contract	6.2	6.3	6.6	7.1	8.3	6.0	6.7	7.4	7.2	6.1	7.2	10.8	8.1	5.8
Wage rate settlements, all industries:														
First-year settlements	7.8	7.6	7.4	9.5	9.8	6.3	8.2	9.1	10.5	8.3	7.1	11.8	10.6	9.0
Annual rate over life of contract	5.8	6.4	6.0	7.1	7.9	5.3	6.5	7.3	7.4	6.5	6.2	9.7	8.7	5.7
Manufacturing:														
First-year settlements	8.4	8.3	6.9	7.4	7.2	5.6	7.2	6.7	8.4	7.8	6.4	8.2	9.0	6.6
Annual rate over life of contract	5.5	6.6	5.4	5.4	6.1	4.2	5.7	5.1	5.6	5.8	5.5	6.7	7.5	5.4
Nonmanufacturing (excluding construction):														
First-year settlements	8.0	8.0	7.6	9.5	9.8	7.8	9.4	10.3	9.5	8.2	8.0	11.8	8.6	9.6
Annual rate over life of contract	5.9	6.5	6.2	6.6	7.3	7.4	7.6	8.5	5.9	6.8	7.3	9.1	7.2	5.6
Construction:														
First-year settlements	6.3	6.5	8.8	13.6	13.5	7.5	10.8	12.2	15.4	14.3	11.4	12.9	16.4	11.4
Annual rate over life of contract	6.3	6.2	8.3	11.5	11.3	7.8	9.1	10.4	13.0	12.0	10.3	11.1	12.4	11.7

33. Effective wage adjustments in major collective bargaining units, 1977 to date

[In percent]

Measures and industry	Average annual changes					Average quarterly changes								
	1977	1978	1979	1980	1981	1979	1980				1981			
						IV	I	II	III	IV	I	II	III	IV
Total effective wage rate adjustment, all industries	8.0	8.2	9.1	9.9	9.5	1.6	1.6	3.3	3.5	1.3	1.7	3.2	3.3	1.5
Change resulting from —														
Current settlement	3.0	2.0	3.0	3.6	2.5	.5	.4	1.0	1.7	.5	.4	1.1	.5	.4
Prior settlement	3.2	3.7	3.0	3.5	3.8	.4	.5	1.4	1.2	.3	.5	1.4	1.5	.4
Cost-of-living adjustment clause	1.7	2.4	3.1	2.8	3.2	.7	.7	.8	.7	.6	.7	.7	1.2	.6
Manufacturing	8.4	8.6	9.8	10.2	9.4	2.4	2.0	3.4	2.9	1.7	2.3	2.4	3.1	1.9
Nonmanufacturing	7.6	7.9	8.8	9.7	9.5	1.0	1.3	3.2	4.0	1.1	1.2	3.8	3.4	1.1

NOTE: Because of rounding and compounding, the sums of individual items may not equal totals.

34. Work stoppages involving 1,000 workers or more, 1947 to date

Month and year	Number of stoppages: Beginning in month or year	Number of stoppages: In effect during month or year	Workers involved: Beginning in month or year (thousands)	Workers involved: In effect during month or year (thousands)	Days idle: Number (thousands)	Days idle: Percent of estimated working time
1947	270	......	1,629	......	25,720	
1948	245	......	1,435	......	26,127	.22
1949	262	......	2,537	......	43,420	.38
1950	424	......	1,698	......	30,390	.26
1951	415	......	1,462	......	15,070	.12
1952	470	......	2,746	......	48,820	.38
1953	437	......	1,623	......	18,130	.14
1954	265	......	1,075	......	16,630	.13
1955	363	......	2,055	......	21,180	.16
1956	287	......	1,370	......	26,840	.20
1957	279	......	887	......	10,340	.07
1958	332	......	1,587	......	17,900	.13
1959	245	......	1,381	......	60,850	.43
1960	222	......	896	......	13,260	.09
1961	195	......	1,031	......	10,140	.07
1962	211	......	793	......	11,760	.08
1963	181	......	512	......	10,020	.07
1964	246	......	1,183	......	16,220	.11
1965	268	......	999	......	15,140	.10
1966	321	......	1,300	......	16,000	.10
1967	381	......	2,192	......	31,320	.18
1968	392	......	1,855	......	35,567	.20
1969	412	......	1,576	......	29,397	.16
1970	381	......	2,468	......	52,761	.29
1971	298	......	2,516	......	35,538	.19
1972	250	......	975	......	16,764	.09
1973	317	......	1,400	......	16,260	.08
1974	424	......	1,796	......	31,809	.16
1975	235	......	965	......	17,563	.09
1976	231	......	1,519	......	23,962	.12
1977	298	......	1,212	......	21,258	.10
1978	219	......	1,006	......	23,774	.11
1979	235	......	1,021	......	20,409	.09
1980	187	......	795	......	20,844	.09
1981	145	......	729	......	16,908	.07
1981: January	6	12	12.0	29.6	257.9	.01
February	7	10	10.7	20.9	118.5	.01
March	16	20	201.6	207.8	661.8	.04
1982 p: January	2	4	6.1	11.4	189.9	.01
February	2	6	2.5	13.9	236.9	.01
March	2	7	7.1	20.1	370.6	.02

NOTE: This table now includes only work stoppages involving 1,000 workers or more.

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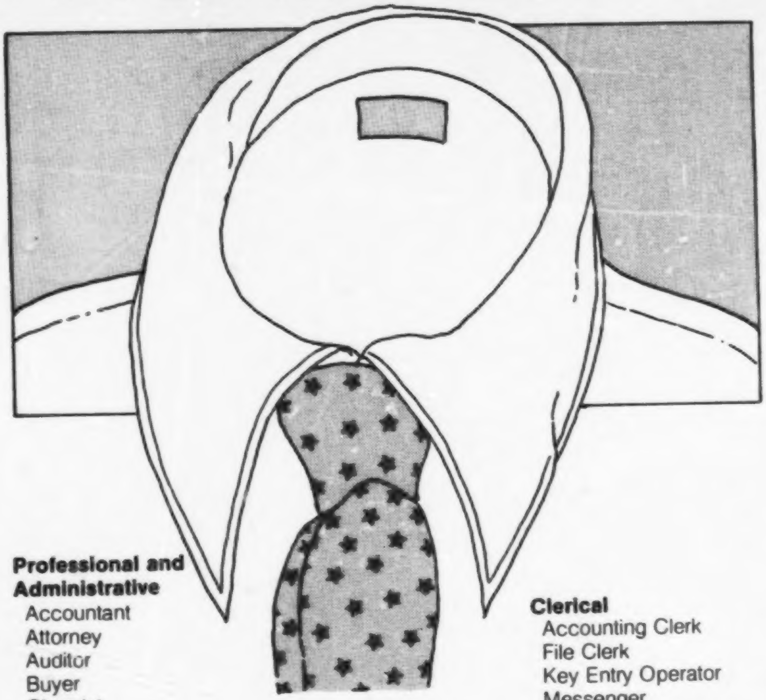

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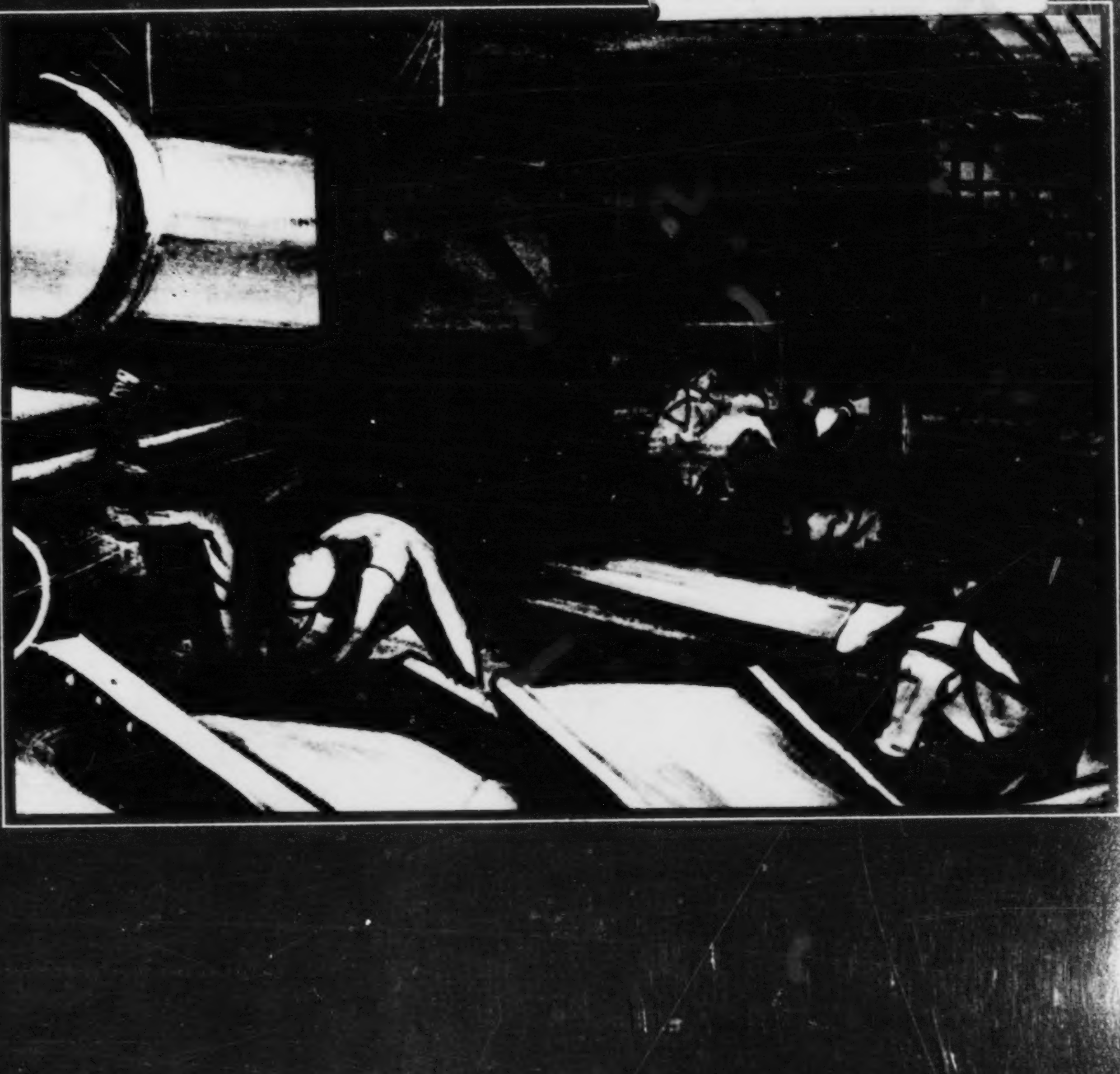

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Labor Month In Review

UP AND DOWN. Two recent reports of the Bureau of Labor Statistics indicate that the proportion of women participating in the labor force continues to rise while at the same time the participation of students appears to be slackening. Some excerpts:

Women up. Even with the slowdown in economic activity, 1.1 million more women were in the labor force in the fourth quarter of 1981 than a year earlier, and their participation rate advanced to 52.2 percent. Over the 1-year period, the number of women with jobs grew by 700,000 with most of this gain occurring in the early part of the year. As the year progressed and economic conditions deteriorated, the number of unemployed women rose by more than 400,000, causing their jobless rate to climb from 7.7 to 8.5 percent. However the rate for men rose even faster, as they were more concentrated in manufacturing jobs where layoffs have been especially severe. By December, the unemployment rate for men (9.1 percent) exceeded that for women (8.6 percent).

Although most women in the United States live in families, about 14.9 million, or 17 percent of all women 16 years old and over, were not living in a family during the third quarter of 1981. They were either living alone (12.5 million), or sharing living quarters with persons not related to them (2.4 million). More than half of those living alone were 60 years of age and over, with widows dominating. About 46 percent of women living alone were in the labor force. By contrast, women living with nonrelatives were much younger; nearly two-thirds were 20 to 34 years old. They were also much more likely to be working. About 76 percent were in the labor force during the third quarter.

The women who live with persons other than relatives were more than twice as likely as those living alone to be unemployed. More than 1 of every 10 were jobless compared with less than 1 of 20 of their counterparts living alone. About one-fifth of all jobless women not living in families had been unemployed for 15 weeks or more.

Students down. Labor force activity among students 16 to 24 years old edged down over the year ended in October 1981. This was the third year in a row in which labor force participation, which had risen substantially through the 1960's and most of the 1970's, fell.

The unemployment rate for students edged up from 13.7 to 14.4 percent between October 1980 and October 1981. Moreover, recent data on students 16 to 21 indicate further increases in unemployment and a continued slackening in labor force activity since the special survey of October 1981.

From October 1980 to October 1981, labor force participation rates among youth enrolled in school declined from 47.8 to 46.7 percent for men and from 47.0 to 45.7 percent for women. For youth no longer enrolled in school, labor force participation over the year showed little change. Since 1960, the participation rate for men 16 to 24 and no longer in school has drifted down from 95.0 to 91.7 percent. At the same time, the rate for women in this group has risen dramatically, from 50.2 to 73.0 percent, largely reflecting changes in marital and childbearing patterns, increases in demand for white-collar and service workers, and new legislation concerning work opportunities.

For both students and nonstudents, labor force participation patterns by race and Hispanic origin were similar in October 1981 to those that have prevailed for many years. Among students, whites had the highest rate (49.4 percent), followed by Hispanics (38.1 percent) and blacks (28.2 percent). Among youth not in school, the rates were considerably higher, but the order was the same.

A record 1.6 million youth who graduated from high school in 1981 were attending college in October 1981. Some 54 percent of all recent graduates were enrolled, compared with 49 percent a year earlier. The labor force participation rate of the new college students was 43.7 percent, substantially higher than in the early 1970's.

A large proportion of recent high school graduates who did not go on to college were in the labor force in October. At 84 percent, their labor force participation rate was higher than in the early 1970's, mostly because of the increase in the rate for women, which advanced from 69 percent in 1970 to 81 percent in 1981. In both years, almost 1 in 4 of the female graduates in the labor force were unemployed.

The number of recent high school dropouts declined over the year, reflecting the general decrease in the number of young teenagers in the population. Youth who dropped out of high school between October 1980 and October 1981 were much less likely to be in the labor force than their classmates who had graduated but had not enrolled in college. The unemployment rate for dropouts (36.4 percent)—a relatively small youth group—has always been volatile; over the year, it climbed sharply for women while remaining about the same for men.

Additional information may be found in *Employment and Perspective: Working Women, Fourth Quarter 1981* (BLS Report 657), and in the Department of Labor release USDL 82-175. An article on participation of students in the work force will appear in an upcoming issue of the *Review*. □

Measuring productivity in service industries

The growth of the service economy presents special challenges for productivity analysts; output is often difficult to quantify, and measurement of labor input requires great care

JEROME A. MARK

The increased importance of service industries over the last two decades and current concern over productivity growth have stimulated interest in productivity measures for this expanding sector of the economy.

The service sector, as defined here, encompasses the major industry groupings of trade, finance, insurance, communications, public utilities, transportation, and government, as well as business and personal services. It accounts for almost three-fourths of the Nation's employment and provides the greatest potential, as well as some of the greatest difficulties, for developing productivity measures.

Over the last decade, the Bureau of Labor Statistics has been expanding the number of service industries for which it publishes productivity measures, and at present provides measures for 16 industries, representing almost a third of the employment in the sector. The Bureau is continuing to develop additional measures, and hopes eventually to extend coverage to most of the service sector.

This article describes that effort, discusses some of the problems of measuring productivity, particularly labor productivity in service industries, and explains how the Bureau is working to resolve some of the problems.

Linking output to input

Productivity measures relate real physical output to real input. They range from single factor measures, such as output per unit of labor input or output per unit of capital input, to measures of output per unit of multifactor input. Such measures also reflect changes in technology, scale of production, educational levels of workers, managerial techniques, and many other factors in addition to the contributions of the particular inputs.

Although BLS is currently developing multifactor productivity measures, at present, the published productivity measures relate output to labor input. This is the most extensively developed and widely used productivity measure because of its relevence to economic analyses and because, as a practical matter, labor is the most easily measured input.

Problems of measuring output

In many ways, the problems of measuring output in the service industries are similar to those of measuring output in the goods-producing industries. That is, the output indicator must be quantifiable and independent of the input measures. If an output measure for an activity is based on an input measure, as is the case in some instances in the national accounts, obviously no change in productivity can be ascertained. In the case of general government, for example, output in the national

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income and product accounts is measured in terms of compensation of government employees. The deflated or constant-dollar measure is derived from changes in employment. Hence, changes in the output measure are closely related to changes in the input measure.

It is also important to distinguish between intermediate and final services. In productivity measurement, we attempt to ensure that the indicators represent output flowing from the industry being measured rather than intermediate steps in the service flow. In this sense, productivity measurement differs from work measurement, which generally refers to the analysis of the operation of an activity and the labor requirements at each intermediate stage. Productivity measurement refers only to the final service and its relationship to input.

For example, in the trucking industry, a count of the ton-miles of freight moved would be the appropriate indicator of the final output—that is, the result of all the activities of the industry. The intermediate steps, such as pickup and delivery, platform work, billing, and collecting, are considered to be subsumed in the final output.

In the case of an organization or an industry providing one type of service, output is merely a count of the units of this service, however defined. In the more usual case of an industry producing a number of heterogeneous services, the various units must be expressed in some common basis for aggregation. For example, the output of franchised new-car dealerships should be a combination of the number of cars sold and the repair activities of the dealers, with appropriate weighting.

To obtain a productivity measure that is an average of the changes of individual components, the appropriate weights for combining the various elements in the output measure are in terms of their factor input requirements. In a labor productivity measure, the weights are unit labor requirements.

Homogeneity among services, after considerations of quality and specifications, is indicated by similarity in unit labor requirements. In this way, the output measure for the development of labor productivity statistics differs from more traditional production measures based on total price or value-added price weighting.

When there are quality changes within the service, adjustments must be made in the output measure to account for the fact that the output is no longer the same homogeneous unit. However, the indicator of quality change for labor productivity measurement differs from the usual concept of quality change associated with consumer price measurements in that it reflects differences in producers' labor requirements or labor costs rather than consumer utility differences.

Ideally, then, the output measure should incorporate data on the number of services provided, differentiated by unit labor requirements, and in sufficient detail to adjust for quality changes. In practice, however, such data are not generally available for service industries (and, in many cases, for goods-producing industries as well). As a result, approximations based on alternative approaches must be used.

The principal alternative is to remove the change in price from the change in total value of the volume of services. This approach is tantamount to price weighting quantities of services provided. Insofar as price relationships among the various component services of a service industry are similar to the unit labor requirements or unit labor costs, this is a close approximation of the desired measure. And because it is easier to measure price change for a specified group of services than it is to measure the number of services provided directly, this is the approach most generally followed.

However, the adjustment requires data in sufficient detail to adequately represent the price trends of the components included in the price change. Otherwise, price movements of the covered areas will be implicitly imputed to the uncovered areas. But because the relationship among the price movements of similar services is much stronger than the relationship among quantity changes, this alternative still has greater viability than imputing quantity changes for uncovered services.

In practice, BLS uses the two approaches to develop output measures for service industries. In some instances, quantity data are available, particularly for utilities and transportation industries. In others, price deflation is employed, and for some, deflation at lower levels of aggregation is combined with labor input weighting at higher levels. For example, in developing the measure for gasoline service stations, gasoline sales, repair, and other services are deflated separately and summed, but in the case of retail food stores, sales by major department are deflated and combined with employee labor cost weights.

Measuring labor input

With regard to labor input measures, the principal problems are data gaps. Information is needed on hours worked by all persons—nonsupervisory workers, supervisory workers, and self-employed and unpaid family workers—in an individual industry. But although data on hours worked are collected by various government agencies as part of such ongoing programs as the Bureau's occupational safety and health surveys, they tend to be limited in scope, or otherwise inconsistent with the output data developed.

The principal source of data on employment and hours is the BLS Current Employment Survey of establishments. This payroll series provides good measures of the employment and hours of nonsupervisory workers. However, it is collected on an hours paid basis, rather than on an hours worked basis. To the extent that hours paid for but not worked are changing, this measure has limitations. To overcome this problem, the Bureau is measuring hours at work as a proportion of hours paid for a sample of establishments in the survey and will use these data to adjust the industry hours paid series.

In general, data on the hours of supervisory workers are poor. Although employment data on supervisory workers are available from the payroll survey, hours data are not. Other sources, such as the censuses of population, are used to estimate this component of the labor input measure.

Data on the number of self-employed, an important component of the input series measure for retail industries, come from the Internal Revenue Service (IRS). The IRS data lag current estimates by 3 years, but may be projected forward with special tabulations from the Current Population Survey (CPS).

These CPS tabulations break out the numbers and hours of self-employed and unpaid family workers at the 3-digit Standard Industrial Classification level. Although the sample size at this level is small and the statistical error is high, the data are the only continuous series of the number and hours for unpaid family workers and for the hours of the self-employed.

The measures derived from these data are unweighted hours; that is, the hours of various types of employees are treated as being equally productive. This would not be a problem if the proportions of workers at different levels of productivity were constant over time. However, to the extent that there are changes in the composition of the work force, such as age, sex, and occupational mix, it may be desirable to adjust the labor input measure for these changes which otherwise would be reflected in the productivity measure.

Data gaps hamper the making of these adjustments. Industry data on employment and hours by age and occupation are limited, although various sources, such as the CPS and BLS occupational employment surveys, provide some pieces. And while worker groups may be differentiated into productivity levels according to their wages or compensation, pay is a factor which may reflect other than productivity differences.[1]

Measures for service industries

At present, BLS publishes indexes of output per unit of labor input for industries in each major service activity—trade, communications, transportation, utilities, and business and personal services, a total of 16 separate measures. Data for these industries, presented in table 1, indicate a wide range of productivity growth since 1973, the year in which a productivity slowdown for the general business economy appeared to begin. In many cases, the growth rates exceeded those for industries in the goods-producing sector.

Table 1. Average annual rates of change in output per hour of all employees in selected service industries, 1955–73 and 1973–80

[In percent]

SIC Code	Industry	1955–73	1973–80
	Transportation:		
401	Railroad transportation, revenue traffic	4.2	2.2
4111;4131;414 (parts)	Bus carriers	−1.5	−0.4
4213 (parts)	Intercity trucking[1]	2.7	0.5
4511	Air transportation[1]	5.3	4.3
4612,13	Petroleum pipelines	7.9	0.0
	Communications:		
4811	Telephone communications	4.7	7.0
	Public utilities:		
491;492;493	Gas and electric utilities	4.9	0.7
491;493 (part)	Electric utilities	5.4	1.3
492;493 (part)	Gas utilities	3.9	−0.4
	Trade:		
54	Retail food stores	2.2	−1.2
5511	Franchised new car dealers	2.8	0.5
5541	Gasoline service stations	4.9	3.1
58	Eating and drinking places	1.1	−1.0
5912	Drug and proprietary stores	6.2	1.9
	Services:		
7011	Hotels, motels, and tourist courts	1.8	1.3
721	Laundry and cleaning services	1.7	−1.1

[1] Output per employee.

In addition, a measure for commercial banking is being developed, and work has begun on measures for the insurance and hospital industries. In a related area, productivity measures for Federal agencies which provide functions such as recordkeeping, insurance, libraries, building and grounds maintenance, and medical services have been published.

It is not possible within the confines of this article to discuss all of the productivity measures prepared by the Bureau, but reference to some of the more important and interesting ones in each of the major areas can illustrate the difficulties encountered in constructing such statistics.

Trade. The Bureau has published measures for retail trade industries since 1975 (with the data beginning in 1958). At present, statistics are published for five important industries—retail food stores, new car dealerships, gasoline service stations, eating and drinking places, and drugstores. Work is underway on a measure for apparel stores, including shoe stores, to be published separately. The effort to develop productivity measures in the wholesale area has not yet succeeded.

For most retail trade industries, data on gross sales in current dollars, deflated by the appropriate price indexes, are used to estimate real output. This method, as mentioned earlier, can yield good estimates of real output. However, such measures can reflect shifts among services with different values, but having the same labor requirements. Therefore, the overall industry productivity index can show movements without any change in component elements.

In retail industries, a large portion of the value of sales has been provided by the manufacturer and the wholesaler of the product sold. A net output measure would be desirable, because it would most closely correspond to the value added by the retailer. However, a gross or total sales measure will yield the same results as a net or value-added measure if the value added as a percent of sales (gross margin) does not change over time. Available data indicate that, among retail industries for which productivity data are published, gross margins have not changed significantly over time.

To incorporate labor input weights, the indexes for most of the retail trade industries are developed in two stages. First, deflated output measures based on sales volume are developed for detailed merchandise lines. These are aggregated to higher levels and then combined with labor costs weights. For example, in retail food stores, sales for 13 key merchandise lines are deflated using specially prepared price indexes based on CPI components. The merchandise lines are aggregated to five department lines—meat, produce, frozen food, dry groceries, and dairy and all others. These are then aggregated with labor cost weights from Department of Agriculture data to develop the overall output measure for groceries. The labor input data for retail trade productivity statistics are generally derived from the Bureau's establishment survey, supplemented by IRS and CPS data.

Transportation. BLS publishes productivity measures for five transportation industries—railroads, intercity trucking, intercity buses, air transportation, and petroleum pipelines. These measures cover 57 percent of transportation employment.

Conceptually, productivity measures for the transportation industries are easier to develop than those for other non-goods producing industries. This is because transportation industry output—the movement of goods or passengers or both from one point to another—is more easily quantified. Output units in transportation have two dimensions, amount and distance; they reflect not only how much has been transported, but also how far. As such, ton-miles, passenger-miles, barrel-miles, and so forth are the primary output indicators for these industries.

Although the basic information for developing good transportation productivity measures is available and is, of course, being used, there are some data gaps that place certain limitations on the BLS measures. For example, it is sometimes impossible to adjust the productivity measures adequately for changes in the average length of haul. The unit labor requirements associated with the movement of goods and passengers are usually greater for short hauls than for long hauls. Therefore, a shift from a long haul to a short haul trip or vice versa could be reflected as a change in productivity although only the mix of trips had changed.

For the two major freight-carrying industries, railroads and trucking, undifferentiated ton-mile information is reported for total freight operations. In trucking, the ton-mile data are also reported separately for three types of carriers—general, contract, and others. But output measures should reflect the *kinds* of commodities handled and the average distance they are moved. The preferred way to develop these measures would be to combine the tonnage and the average haul of each commodity by its respective labor requirements and aggregate the results for all commodities transported. Unfortunately, this cannot be done with available data.

However, supplementary information on tonnage for railroads is available from the ICC for about 200 commodity lines, ranging from agricultural and mining products to motor vehicles and scientific instruments. Until recently, similar information was also available for the trucking industry. BLS uses these data to adjust the overall measure of freight ton-miles for changes in the composition of goods carried.

Although this commodity adjustment is a significant improvement, refinements to the undifferentiated ton-miles cannot be developed to the extent desired. For example, separate labor requirements data are not available for weighting the individual commodity groups. The commodity index adjustments are therefore made in terms of unit revenue weights, the underlying assumption being that differences between labor requirements among commodities are similar to differences in terms of unit revenues. This does not seem unreasonable because labor costs constitute more than half of each industry's total operating costs, although the proportion could conceivably differ by commodity. For railroads, the adjusted freight ton-mile measure is combined with a measure of revenue passenger-miles to obtain the total industry output index.

For air transportation and trucking, employment is the only available measure of labor input. Thus, the productivity measures for these two industries should be interpreted with caution, for if changes occur in the average workweek, the trends in productivity would not show the true relationship between output and labor time expended on the output.

The transportation industries for which BLS publishes productivity measures all are regulated to some degree by the Federal Government. Recent efforts to reduce the paperwork burden, coupled with the effects of deregulation, have acted to eliminate some of the operating statistics previously published. As a result, some productivity measures have had to be extended on the basis of more limited information. The outlook for expanding the data base, at least in the near future, is not favorable. However, BLS is cooperating with other government agencies to ensure that adequate statistics for transportation industries remain available.

Communications. The BLS productivity measure for telephone communications covers about four-fifths of the employment in the communications sector. The output index is derived from revenues of all telephone companies reporting to the Federal Communications Commission. The revenues are stratified by major source—local, toll, or miscellaneous—and deflated by specially prepared price indexes for these different services. The labor hours data are based on the Bureau's establishment payroll survey.

At one time, BLS published a productivity measure, the numerator of which was derived from the number of local and long-distance telephone calls, aggregated on the basis of revenue weights. This measure was discontinued in the mid-1950's because of concern that the labor input measure was not consistent with the output measure. For example, private line services, such as leased telephone lines, radio and TV transmission, teletype, and so forth, were reflected in employee hours but not in the output measure as defined. The same was true for calls between stations transmitted through private switchboards and directory services.

A different type of productivity index for the industry was initiated in 1973, with data back to 1951. The numerator of this measure was derived from annual revenue data stratified by major services and deflated, until last year, by price indexes furnished by American Telephone and Telegraph Co. Beginning in 1982, the BLS producer price index for telephone communications will be used to deflate the revenue data, and productivity indexes published for the industry since 1972 will be revised in accordance with the new procedure.

The BLS deflated revenue measure of the output of the telephone communications industry is fairly comprehensive. It includes revenues from private line services, which have grown in importance over the years, as well as those arising from the maintenance of private switchboards by telephone carriers. It also accounts for TV, radio, and computer data transmission by telephone industry facilities, and for directory services. However, certain measurement problems remain unresolved, including the unsatisfactory treatment of differences in intensity of the use of telephone equipment by customers. Intensity of use differences occur when revenue does not vary in proportion to the number of calls made because of flat charges, as in the case of local telephone service or WATS lines. Implicitly, the BLS output measure assumes that the maximum permissible usage takes place under any flat charge system used in the industry.

Business and personal services. In the area of business and personal services, which includes not only business, personal, and repair services, but also education, social services, and political organizations, BLS currently publishes only two measures of productivity, one for hotels and motels, and the other for laundry and dry cleaning services. These measures cover 13 percent of the total employment in the sector.

Because physical quantity information is not available for these two industries, output measures are developed using price-deflated value techniques. The techniques are similar to those described earlier, in that both revenues and employee-hour weights are used to aggregate the output indicators into a total industry output index.

On the input side, the hours of all persons are used as the measure of labor time. As in the trade sector, partners, proprietors, and unpaid family workers make up a significant portion of the work force. Currently, this group accounts for about 15 percent of all persons employed in laundries and 20 percent of the workers in hotels and motels.

BLS efforts to expand coverage in the business and personal service area have been hampered by two major problems. First, because many business service categories are quite broad, it is impossible to account adequately for changes in the mix of their component services. For example, we cannot publish a productivity index for automotive repair shops because there are almost no data available on the types of repairs that are made. The second problem is that not enough services are covered by the Consumer Price Index and, consequently, the deflated value of the output of many uncovered areas would have to be imputed.

Finance. In the finance area, BLS is developing a banking measure in terms of the three major services commercial banks render their customers—deposits, loans, and trust services. While banks also provide non-fund-using services, such as safe deposit and customer payroll accounting, lack of adequate data preclude deriving a measure for them. However, because the proportion of employees engaged in such services is very small, the overall output measure is little affected by the omission.

There has been much controversy over the years as to the appropriate measure of the output of banking. Some analysts have advocated a "liquidity" approach, others, a "transactions" approach. In the former, the banks are viewed as holders of money, and their output is equivalent to the net interest they receive on the volume of deposits held. This interest is the income depositors are willing to forgo to maintain deposits rather than investing directly in assets less readily converted to cash, that is, the value to customers of the liquidity they enjoy from bank services. This approach can be extended to all types of savings accounts, on the principle that the forgone net interest is the value of the bank's services.

The other approach views banking output as a series of transactions; the volume of the bank's output is proportional to the volumes of the transactions handled. BLS has adopted this second approach for its productivity measure.

Accordingly, the final output of banks is defined as an array of depository, lending, and fiduciary services. Estimates of the number of transactions for each of the three service functions must be derived. Because no direct count of the number of transactions is available in many instances, estimates are made from data on the total value of transactions and surveys of average transaction amounts.

Deposit activity is measured in terms of the number of checks transacted and the number of time and savings deposits and withdrawals. (An electronic funds transfer is treated as a transaction on par with one involving payment by check.) The data for demand deposit activities are from Federal Reserve counts and official benchmark surveys. For time and savings deposit activity, the output measure is based on data published by the Federal Deposit Insurance Corporation and on the Functional Cost Analysis conducted annually by the Federal Reserve.

Lending services provided by banks are also measured in terms of units. As in the case of deposit and trust activity, BLS does not use banks' financial data to arrive at the component output measures. Use of such data would be highly misleading even if appropriate deflators could be found. For example, an increase in the aggregate deflated value of loans might simply reflect the making of a few large loans; similarly, a decrease might indicate the repayment of a few large loans, even as the number of small loans increased.

Twelve types of loan output are measured, for the most part using data generated by the Federal Reserve and the Department of Housing and Urban Development. Included in the loan output measure are commercial and residential mortgage loans; consumer loans; single-payment loans; credit card loans; and commercial and "other" loans. The number of loans can usually be derived by dividing the dollar value of total loans in a given category by the average face value of a loan. For the category of commercial loans, the actual number of loans extended has been available since the mid-1970's.

An experimental output measure for the trust department services of commercial banks is derived from the trend in the number of accounts. Trust accounts are stratified into five major categories, including benefit trusts, personal trusts, and estates.

After output estimates are developed for depository, loan, and fiduciary segments, they are aggregated to the industry level using employment weights.

SOME OF THE MAJOR PROBLEMS in developing labor productivity measures in the service activities and how BLS has tried to meet some of these problems have been highlighted above. Considerable work in this very important area has been conducted and the outlook for improvements in certain subareas is optimistic. For example, as price measures are improved and hours worked data become available, and as work in the area of government productivity measurement progresses, BLS will be able to provide a better picture of what is happening to productivity in more activities within the sector. Additional measures in communications, finance, insurance, and real estate, and business and personal services can and will be developed, and indexes for wholesale trade are very possible. However, there are severe conceptual as well as data problems in measuring productivity in such industries as education and social services and in the important field of medical services, and progress in these areas is expected to be much slower. □

FOOTNOTE

[1] In connection with work on multifactor productivity measurement, BLS is exploring the possibility of making adjustments for changes in work force composition.

Changing the treatment of shelter costs for homeowners in the CPI

In 1983, the treatment of housing in the official Consumer Price Index for All Urban Consumers will change to reflect only the cost of shelter services of owner-occupied housing

ROBERT GILLINGHAM AND WALTER LANE

In late 1981, Commissioner of Labor Statistics Janet L. Norwood announced plans to change the procedures used to compile the homeownership component of the Consumer Price Index (CPI). Although the particular procedures used in compiling the CPI might seem dry and technical and of little general interest, such is not the case with respect to the homeownership component. The treatment of owner-occupied housing in the CPI has been one of the most widely discussed issues in economic statistics in recent years. The interest in this component stems from its substantial weight in the CPI and the sensitivity of the overall index—our most widely publicized measure of inflation—to the particular procedures used.

Currently, the homeownership component is based on house prices, mortgage interest rates, property taxes and insurance, and maintenance costs. This treatment captures elements of both the service flow and asset investment aspects of housing expenditures. The Bureau first raised questions about this component 10 years ago and, since then, has encouraged public review of alternative approaches. For some time, the Bureau staff has supported a change in favor of a treatment which would focus solely on the cost of the shelter services of owner-occupied housing, thus abstracting from investment aspects. The Commissioner believes that the increased general understanding of the issues surrounding this component, along with the growing problems inherent in continuing the current procedure, make a change imperative. This paper summarizes the proposed modifications and the reasons why an immediate decision to make them was necessary,[1] describes the current treatment of homeownership to provide an understanding of the flaws in the current approach,[2] explains why the proposed rental equivalence approach is the best alternative for improving the index, and outlines the technical procedures which the Bureau is currently implementing to ensure an adequate rental equivalence index.

Why the CPI must be changed

As noted, the current approach to homeownership is based on, *inter alia*, house prices and mortgage interest rates. In announcing the changes for the CPI homeownership component, the Commissioner cited several serious difficulties in obtaining reliable data on these components to continue the current approach. First, important changes have occurred in financial markets which are not reflected in the CPI. Funds available for long-term mortgage commitments have declined sharply. New types of mortgage instruments involving variable rates, shorter financing terms, and other special arrangements have developed so that the standard,

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long-term, fixed rate mortgage used in the CPI is becoming increasingly unrepresentative of the mortgage market. In fact, some of the new instruments have characteristics, such as variable rates and principal amounts, which make it impossible to use them in computing the CPI which assumes a long-term mortgage at fixed interest rates. Furthermore, because of high interest rates and difficulties faced by home buyers in securing bank mortgages, many owners who wish to sell their homes are facilitating sales by providing financing to buyers at below bank rates. These financing arrangements are not reflected in the CPI. The house prices used in the CPI are obtained from the Federal Housing Administration (FHA) and pertain to sales financed with FHA-insured mortgages. This data base represents a small and specialized segment of the housing market and presents BLS with increasingly serious estimation problems.

In addition to problems of data adequacy, impetus to change the homeownership component stems from an important new use of the index. The Economic Recovery Tax Act of 1981 (Public Law 97–34) requires use of the CPI for All Urban Consumers (CPI-U) for escalation of income tax brackets and the personal exemption amount. The law requires announcement of the new tax brackets in December 1984 based on CPI-U data for the prior 2 years. This is a major new use of the index which will have a broad effect on total Federal Government revenues, and this new use underscores the importance of action to ensure that the CPI reflects the consumption cost experience of consumers to the fullest extent possible.

Another reason to immediately initiate the proposed change is the increasing public awareness of the issues surrounding the measurement of homeownership costs in the CPI. A growing number of concerned parties feel that this component is seriously flawed and that changes must be made in order to maintain public confidence in the index. The specific changes to be made are detailed in exhibit 1. The essence of the decision is to change the homeownership component of the CPI from its current form, which includes both investment and consumption aspects, to a flow of services approach, which focuses only on the consumption of shelter services, on the principle that the index should focus only on current consumption.

Current treatment

In its current form in the index, homeownership has five parts, or elements. Each has its own weight and procedure to estimate monthly price change. The appropriateness of these methods can only be judged in terms of underlying conceptual framework for CPI homeowner costs. Unfortunately, the current treatment of homeownership has no clear conceptual rationale, so the particular procedures used are largely definitional and cannot be justified by resorting to any broader conceptual framework. It is not surprising, then, that much of the debate over homeownership has focused on them.

Exhibit 1. Dates of change in the Consumer Price Index

Date	Action
January 1982	Publication of CPI for December 1981 • increased prominence for experimental rental equivalence measure (CPI-U-X1) in the text of CPI press release
1982	Work on enhancement of CPI-U-X1
February 1983	Publication of CPI for January 1983 • first publication of CPI-U with rental equivalence homeownership • last publication of CPI experimental measures
July 1983	Publication of CPI for June 1983 • last publication of overlap CPI-U with current homeownership methods
1984	Publication of rental equivalence homeownership with expanded rent sample and improved computation methods
February 1985	Publication of CPI for January 1985 • first publication of CPI for Urban Wage Earners and Clerical Workers (CPI-W) with rental equivalence homeownership
July 1985	Publication of CPI for June 1985 • last publication of overlap CPI-W with current homeownership method

Weights. The weights reflect consumption patterns reported in the 1972–73 Consumer Expenditure Survey, which forms the basis for the overall weighting scheme of the CPI. (The relative importance of the items as of December 1980 is given in table 1.) The weight for home purchase is the purchase price for homes bought in the survey year, less the sales price for homes sold, plus transactions costs for these purchases and sales. Thus, consideration is limited to those consumers who purchased or sold homes during the survey period. To reduce the sampling error, data from a longer period (1968–73), annualized and adjusted for the price increase which took place over the period, were used to compute this weight. Use of these procedures resulted in a home purchase weight which is quite large.

Like home purchase, the mortgage interest concept is limited to mortgages obtained in the survey period. The mortgages must be for the purchase of homes, and only mortgages initiated at the time of house purchase are included in the weight. The weight for "contracted mortgage interest cost" is the amount of interest that survey period borrowers promise to pay during the first half of the term of their mortgage loans. It is called contracted mortgage interest cost because it includes future payments. With long mortgages, homeowners will not, in general, hold their mortgages for the full term. The choice of half the term for the specification of this weight was based on procedures established during the 1964 CPI revision.

The weight derivations for the other homeownership elements follow more conventional CPI methods. They depend only on expenditures actually made in the survey year, and refer to expenses incurred by all survey year homeowners—not just home buyers.

Measuring house price changes. The estimate of the monthly change in house prices is one of the most difficult tasks entailed in the CPI. This estimate moves the weight for home purchase and, with a mortgage interest rate index, is also used in estimating the mortgage interest cost index. It is not feasible to follow, over time, the prices of a fixed sample of houses—a practice which would be analogous to that used to track price change on most consumer goods and services—because individual houses change hands only infrequently. So, a new selection of recently sold homes must be used each month. To obtain an estimate for the change in house prices from last month to this month, the average price of this month's set of homes must be compared—after adjustment for quality difference—to the average price for last month's set.

The primary difficulty in pursuing this approach is finding a source of data on recent house sales, with both price and quality information, that are (1) available promptly and (2) inclusive of the various types of houses and housing areas. In the current CPI, the data are for house sales on which financing is insured by the Federal Housing Administration. These data fall far short of the ideal. Processing delays often mean that several months elapse between the time a house sale occurs and the time it is used in the CPI. For some geographic areas, especially those in the Northeast, the number of FHA transactions is very small. In addition, the FHA mortgage ceiling virtually eliminates higher priced homes from consideration. The impact of the ceiling—and especially changes in the ceiling—may be quite substantial, possibly resulting in a downward bias in the house price indexes used in the CPI.[3]

The other important difficulty in estimating house price change is the development of good quality adjustment procedures, required before a valid comparison between two different samples can be made. Quality adjustment is currently accomplished by sorting the observations on FHA sales into 600 mutually exclusive cells. The cells were generated from the cross classification of the 40 CPI geographic areas, 5 age ranges, and 3 size groups. The estimate of change in house prices is computed from the cells. First, the average of the prices per square foot is obtained for each cell. Second, the change is computed for each cell from the average price per square foot of the previous month. Finally, the average of the change is taken over the cells with weights that reflect the base period importance of each cell.[4]

Mortgage interest and other cost changes. Changes in mortgage interest costs are determined from the combination of (1) an estimate of changes in mortgage interest rates and (2) the estimate of the changes in house prices. Thus, the mortgage interest cost element of the CPI shows the effect of changing interest rates, with other loan features held constant, and changing house values, with house quality held constant. Put another way, this element shows the change in the amount required to finance a given house in the face of changes in both the interest rate and the price of the house.

The rate change is estimated using quality control cells similar to those used for house prices. For conventional loans, the cells result from the cross classification of the 40 CPI geographic areas, 3 downpayment classes, and 2 classes to distinguish between mortgages on new and existing houses. The source data for conventional loans are provided by the Federal Home Loan Bank Board. They consist of all mortgages closed during the first 5 business days each month by a sample of savings and loans and other lenders. There is currently a 1-month lag before the data are used in the CPI. In addition, there are cells for FHA and VA ceiling rates; these have 13.5 percent of the mortgage weight.

Price changes for the other homeownership elements are estimated with the standard CPI technique of following the prices of a fixed set of selected items over time. The property taxes on a sample of homes are tracked from year to year, after removing the effect of capital changes and exemption changes which are not the result of new tax rules. Price change for property insurance is

Table 1. Relative importance of index components of the official (CPI-U) and experimental (CPI-U-X1) measures, December 1980

Component	Relative importance	
	CPI-U	CPI-U-X1
All items	100.000	100.00
Food and beverages	18.309	21.264
Housing	45.519	36.720
Shelter	31.650	20.613
Rent, residential	5.120	5.946
Other rental costs	.714	.830
Homeownership	25.816	13.837
Fuel and other utilities	6.550	7.604
Household furnishings and operation	7.319	8.503
Apparel and upkeep	4.654	5.639
Transportation	18.955	22.020
Medical care	4.717	3.476
Entertainment	3.647	4.237
Other goods and services	3.999	4.643

estimated by following the price of a specified amount of homeowners or fire and extended coverage insurance, with annual inflation adjustments to any dollar values used in the specifications. For maintenance and repair expenses, a specified set of commodities and services are priced in retail outlets by CPI field representatives.

The rental equivalence approach

The current treatment of homeownership in the CPI has some very ad hoc aspects: there is no recognition of the distinction between investment and consumption, nor is there any clearly identified underlying conceptual structure. This is not the case for the rental equivalence approach. The following summarizes the conceptual arguments for this approach and outlines the operational steps which will be taken to ensure that the approach is effectively implemented.[5]

Conceptual framework. The overall conceptual framework for the Consumer Price Index was presented by Robert Gillingham in 1974. To summarize, we assume that the consumer's welfare is determined by the flow of consumption services received, where the services can be (1) directly provided, (2) obtained coincidentally with the consumption of a nondurable good (in which case the distinction between a good and a service is unnecessary), or (3) obtained from the use of a durable good owned by the consumer. In each case, satisfaction is derived from the act of consumption; ownership of a source of consumption services—a durable good—produces no additional satisfaction. In other words, the purchase of a durable good is an "investment," designed to provide consumption services over a future time span.

Within this framework, we want the CPI to measure the cost over time of the market basket of services *consumed* in the base period. For the services provided by directly-purchased services and nondurable goods, this implies observing market prices and transaction levels in the base period, as well as the subsequent time path of market prices. However, for the services provided by durable goods owned by consumers, the implicit price of the services must be estimated, because market transactions do not take place each time the service is consumed.

Within this framework, the problem is basically one of estimation. This problem is not serious for many durable goods because aggregate service flows and aggregate purchase flows are closely related, and asset price movements are closely related to service price movements. Thus, standard techniques can be used. For housing, however, this pattern does not typically hold, and alternative procedures must be developed. To analyze this problem for housing, we will start by defining the user cost of housing in the simplest case—in a world of certainty without taxes, and with perfectly competitive markets—and proceed to outline the complications which arise when these assumptions are dropped.

In a world with perfect rental and resale markets and no uncertainty, the user cost of a house in a given period can be shown to be the following:

$$C_t = r_t P_t - A_t + Z_t \qquad (1)$$

where r is the (single) rate of interest in period t, P is the average price of the house in period t, A is equal to the change in the average price over the period, and Z represents all other cost components. In other words, the user cost is defined as the opportunity cost of holding the house, $r \cdot P + Z$, less the increase in the house's value. In equilibrium, the rental price of the house, R, will be equal to the user cost and, because we have assumed frictions away, the rent received by a landlord will equal the rent paid by a tenant. Thus, in a perfect world the following obtains

$$R_t^L = C_t = R_t^T \qquad (2)$$

where the superscripts L and T denote landlord and tenant.

Under the conditions we have assumed, measurement of the value of the flow of shelter services from a house becomes a trivial matter. It can be measured with information from either rental or resale and money markets and it does not matter whether the information refers to buyers' or sellers' prices. Problems arise, however, when we attempt to measure the cost of shelter for homeowners in a more complicated setting, in which the exact form of the user cost function is more difficult to define and the equalities above need not hold.

To lay out this problem more clearly, we will drop the assumption of perfect certainty, thereby allowing for a structure of differing asset yields. We will also relax the assumption of perfect markets to allow for the possibility that the rent received by a homeowner may be less than the rent paid by a tenant, the difference representing, for instance, the value of a management function. Although we no longer assume perfect rental markets, we do assume that there is some price at which each homeowner can rent shelter services equivalent to those provided by his own home, and some strictly positive price at which another consumer would be willing to rent his house. Under these conditions, the user cost measure can be redefined as

$$C_t = r_{et} E_t + r_{mt} M_t - A_t + Z_t \qquad (3)$$

where M and E are mortgage and equity amounts which sum to the average price of housing (P), r_m is the mortgage interest rate, and r_e is the opportunity cost of equity capital.[6]

The relationship between user cost, defined in this manner, and the alternative rent measures defined above is now ambiguous, and depends critically on the manner in which the opportunity cost of equity capital is defined. Certainly, the rent paid by a tenant must be greater than or equal to that received by a landlord, but depending on the manner in which one chooses to define and estimate the opportunity cost of equity capital, the relationship between each of the rent measures and user cost is uncertain.

The variables included in the redefined user cost function are all conceptually and operationally straightforward with one crucial exception—the opportunity cost of equity capital. Unfortunately, estimates of user cost are also sensitive to alternative definitions of this variable. In 1980, Gillingham presented several somewhat "natural" alternatives for defining the opportunity cost of equity capital.[7] In 1972, he had suggested that r_e be estimated as an internal rate of return defined by the identity

$$(4) \qquad R^L_t + A_t \equiv r_{et}E_t + r_{mt}M_t + Z_t$$

where R^L_t is an estimate of the market rental which an owner could receive for his house.[8] Alternatively, one might argue that the appropriate internal rate of return be defined by substituting R^T in equation (4). In either case, the resulting estimate of user cost, which we will call C_I, reduces to an implicit rent, and the following relationship holds:

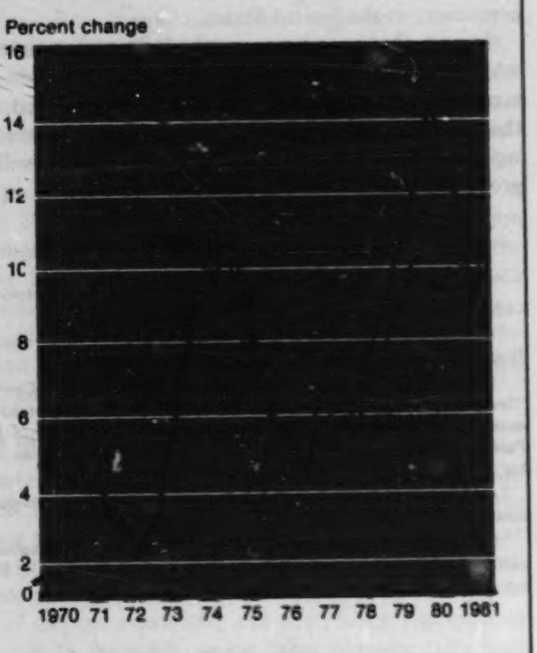
$$(5) \qquad R^L_t \leq C_{rt} \leq R^T_t$$

The suggestion to use an internal rate of return on housing to estimate user cost is based on the assumption that this rate best describes the alternative rate of return an owner/investor could receive on another investment with similar liquidity and risk characteristics.

That is, the household's user cost of owner-occupied housing or cost of *consuming* the flow of services from its housing unit must be at least as great as the income which the household could receive by renting the unit to someone else. This cost is independent of the capital gains achievable from holding housing assets, except insofar as such gains are reflected in rent levels. Each household determines its housing stock based on decisions regarding the expected rates of return on housing equity and other assets with varying characteristics. This determination is separate, however, from the decision as to the rate of consumption of housing services. Such factors as the rate of change in house prices determine the rate of return on equity, but *ex post* capital gains do not affect the user cost. In the same way, defining r_e other than as the internal rate of return has the effect of incorrectly including in C some element of the investment return on housing investments. This result implies that rental equivalence measures are a necessary input into the development of acceptable user cost measures.

Empirical implementation. The foregoing discussion emphasizes the importance of explicit or implicit rental market information in developing conceptually sound user cost measures. It has been demonstrated that estimated user cost functions are subject to extreme volatility and that direct use of rental market information is a far more promising approach.[9] The basic question then becomes the appropriate design of a rental equivalence estimation procedure.[10] Over the past several years, the Bureau has produced an experimental rental equivalence index (CPI-U-X1) which simply uses the rent index to move a rental equivalence weight derived from the 1972–73 Consumer Expenditure Survey. Relative importances for this index are shown in table 1 and the rela-

Chart 1. Changes in the Consumer Price Index for All Urban Consumers, official (CPI-U) and experimental rental equivalence (CPI-U-X1) measures, 1970-81



NOTE: Percent changes are calculated using 12 months of unadjusted data.

tive movements of this index and the official index are displayed in chart 1. Although CPI-U-X1 gives a rough idea of how a rental equivalence index would move, the Bureau believes several procedural improvements are required before an official rental equivalence index is introduced. Following are the steps currently underway to improve the method of calculating the rental equivalence measure now used in the CPI-U-X1. This work will be completed in the latter part of 1982 and will be ready for introduction into the CPI-U with data for January 1983. (See exhibit 1.)

Specifically, three limitations of the current rental equivalence measure will be addressed. First, the sample of rental units now used will be reweighted so that it will represent owner-occupied housing units instead of renter-occupied units. The current sample of rental units was selected, with a probability-based technique, from the renter-occupied units in selected neighborhoods in each CPI pricing area. The rent survey neighborhoods were selected using, among other stratification variables, the percent of the neighborhood that was owner-occupied. By taking advantage of this element of the design of the rent survey, new weights can be assigned to the housing units in the sample so that they will represent the owner-occupied housing units in their neighborhoods, CPI areas, and, ultimately, all urban places in the United States. The reweighted rent sample can then be viewed as representing—under the rental equivalence concept—homeowner costs for all urban consumers in the United States.

Second, the expenditure weight for rental equivalence, which for the experimental index was calculated by means of a short-cut method, will be recalculated using the complex statistical estimating procedure used for weights in the official CPI. This enhancement will improve the quality of the national CPI's rental equivalence weight, and will provide weights for computation of local area CPI using the rental equivalence approach.

Finally, the data processing system which produces the CPI each month will be expanded to accommodate the calculation of a CPI-U, with complete item and geographic detail, which employs the rental equivalence approach.

Subject to resource availability, longer range plans for improving the rental equivalence measure include an augmentation of the sample of rental units. This new sampling will be concentrated in areas where the housing is predominantly owner-occupied in order to increase the proportion of rental units that have characteristics similar to owner-occupied units. In addition, improvements in the statistical estimating techniques for rental equivalence will also be developed.

THE DECISION TO CHANGE to a flow-of-services approach in measuring shelter costs for homeowners implies a major conceptual change for this component of the CPI. We believe the current approach is severely lacking in conceptual rationale, and that the proposed changes will be a great improvement. Much of the controversy over the change, however, has centered around the empirical question of which index will increase more rapidly over the next several years. As shown in chart 1, the rental equivalence index increased less rapidly over the past decade. However, this period has been marked by substantial activity in housing markets and widely fluctuating mortgage interest rates. It would be extremely difficult to predict relative future movements and, thus, the decision to change the index should be based on conceptual and operational adequacy, a subject on which we do have information, rather than on predictions of future movements in the indexes, a subject on which our information is extremely uncertain. □

FOOTNOTES

[1] This section paraphrases Commissioner Norwood's statement of Oct. 27, 1981, announcing that the CPI would be changed.

[2] This section is based on Walter Lane's, "The Costs of Homeownership," *Seller/Servicer*, September–October 1979.

[3] For a detailed discussion of these effects, see John Greenlees, "Sample Truncation in FHA Data: Implications for Home Purchase Indexes," Working Paper No. 113 and "Alternative Indexes of Home Purchase Prices, 1973–1978," Working Paper No. 114 (Bureau of Labor Statistics, 1981).

[4] Additional procedures exist for dealing with cells with inadequate sample sizes.

[5] For a detailed discussion, see Robert Gillingham, "Estimating the user cost of owner-occupied housing," *Monthly Labor Review*, February 1980, pp. 31–35.

[6] Robert Gillingham, "A Conceptual Framework for the Revised Consumer Price Index," *Proceedings*, Business and Economics Statistics Section, American Statistical Association, 1974, pp. 246–52.

[7] Gillingham, "Estimating the user cost."

[8] Robert Gillingham, "Measurement in the Consumer Price Index of the Cost of Shelter for Homeowners," Bureau of Labor Statistics, June 1972.

[9] Robert Gillingham, "Measuring the Cost of Shelter for Homeowners: Theoretical and Empirical Considerations," Working Paper No. 122 (Bureau of Labor Statistics, 1981).

[10] *Ibid.* Gillingham produces experimental rental equivalence indexes using a very different set of procedures unsuited for use in the CPI. The results, however, give no evidence that a reasonable rental equivalence measure would be excessively difficult to produce.

Labor turnover in manufacturing: the survey in retrospect

Discontinued Federal-State series shows level of hires, quits, and other job changes has remained relatively stable except for cyclical variations; analytical limitations include coverage of industries that have become less representative of the economy

CAROL M. UTTER

With the compilation of data for December 1981, the Bureau of Labor Statistics has ended its survey of labor turnover, predominantly in manufacturing. The monthly survey, a key economic indicator, was discontinued because of severe budgetary cutbacks.

The labor turnover survey was initiated in 1926 by the Metropolitan Life Insurance Co. to provide personnel managers with a national benchmark of turnover rates in manufacturing plants. In 1929, the company turned the project over to BLS for further development, and BLS had been collecting data monthly since 1930. In the first 10 years, the Bureau expanded the original sample of 175 large establishments, which employed 25 percent of all manufacturing workers. In the meantime, a number of State employment security agencies affiliated with the U.S. Employment Service of the Department of Labor were collecting labor turnover information for use in local job market analysis and as a guide for the operations of the State employment services. Cooperative arrangements between these agencies and the Bureau of Labor Statistics for the joint collection of labor turnover data began with an agreement with Connecticut in 1954.

By 1964, the cooperative program had been extended to cover all 50 States and the District of Columbia, and the total sample comprised 40,000 reporting establishments in manufacturing and mining. By the late 1960's, these agencies published about 8,000 labor turnover series of States and Standard Metropolitan Statistical Areas, while national rates were published for 221 industries. For many industries, separate rates were published for men and women between 1958 and 1968.

In 1969, the survey was expanded to include the collection of information on job openings. During the next 4 years, information on labor turnover and job openings was collected for all manufacturing and mining industries as well as for nonmanufacturing industries in about 20 selected standard metropolitan areas. The job openings portion of the survey was discontinued at the end of 1973 and with it the collection of turnover data for most nonmanufacturing industries.[1] Monthly turnover information continued to be collected for all mining and manufacturing industries, entailing 260 national series and nearly 11,000 State and area series.

Uses of the data

These statistics have been used primarily for economic and labor market analysis and for research. In the private sector, employers have used the data on quits as a yardstick against which to measure the performance of their plants, with low quit rates considered an indication of efficient operations and good labor management relations. In the public sector, labor turnover rates were also widely used by State employment services to plan and appraise their operations. For example, the State employment security agencies compared the number of

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employees placed through their services with the total number of new hires reported by employers within the labor market served by a particular local employment service office. Thus, the number of job placements by each local office could be measured relative to the potential for placement in the local job market.

Over the years, the major use of the labor turnover rates was as an economic indicator. The layoff rate signaled changes in the economy several months before business turning points, particularly the starts of downturns. The Bureau of Economic Analysis included the layoff rate as one of the 12 components of its composite Index of Economic Leading Indicators. (See table 1.)

Analysts have also found the quit rate to be a particularly useful representation of the decision of individual employees regarding their perceptions of the availability of other job opportunities.

From 1950 through 1979, accessions (new hires, recalls, and transfers) ranged decennially between 4.5 percent and 4.1 percent, while separations (mainly quits and layoffs) ran about 4.3 percent. The average rate of new hires for each decade stood at 2.9 percent per month, while the average rate of quits was about 2 percent. For 1980 and 1981, turnover slowed as business conditions worsened. (See table 2.)

In general, one notes little evidence of increased job hopping or any particular change in employers' use of layoffs to adjust their work force to slackening business conditions. Of course, the manufacturing sector has not grown in employment during the postwar period and its share of the Nation's nonfarm jobs dropped from 34 percent in 1950 to 22 percent in 1981. Therefore, accessions have not exceeded separations as would have been the situation if labor turnover data for the total economy or the fast growing service sectors were included.

The foregoing is intended merely as a brief description of the behavior of the series. Many detailed analyses of the series have been published, including the *Monthly Labor Review* article, "Quits in manufacturing: a study of their causes."[2]

Table 1. Layoff rate in relation to the business cycle, November 1948 to July 1981

Cyclical phase	Layoff low	Months leading	Layoff rate [2]
Contraction [1]			
Nov. 1948	Dec. 1947	11	1.0
July 1953	Nov. 1952	8	.8
Aug. 1957	Nov. 1955	21	1.3
Apr. 1960	May 1959	11	1.7
Dec. 1969	Apr. 1969	8	1.1
Nov. 1973	Oct. 1973	1	.8
Jan. 1980	Mar. 1979	10	.9
July 1981	July 1981	0	1.0
Expansion [1]	Layoff peak	Months leading	Layoff rate [2]
Oct. 1949	May 1949	5	3.4
May 1954	Jan. 1954	4	2.9
Apr. 1958	Mar. 1958	1	3.5
Feb. 1961	Feb. 1961	0	3.0
Nov. 1970	Oct. 1970	1	2.2
Mar. 1975	Feb. 1975	1	3.0
July 1980	May 1980	2	3.2

[1] Beginning date as designated by the National Bureau of Economic Research.
[2] Seasonally adjusted.

Table 2. Average monthly labor turnover rates in manufacturing, 1930-81

Period	Total accessions	New hires	Total separations	Quits	Layoffs
1930-39	4.8	—	4.7	1.2	3.4
1940-49	6.9	—	6.6	4.1	1.7
1950-59	4.5	2.9	4.4	2.0	1.8
1960-69	4.3	2.9	4.3	1.9	1.7
1970-79	4.1	2.9	4.3	2.0	1.3
1980-81	3.4	2.1	3.8	1.4	1.8

Limitations of the series

One of the major shortcomings of the terminated program has been its limited scope. The industry coverage—limited to manufacturing, mining, and telephone communications—has become less representative of overall economic behavior. In the last 30 years, while the number of full- and part-time workers on nonagricultural payrolls has doubled from 45 million to more than 90 million, only 1 out of every 9 jobs added went to manufacturing industries. Thus, the usefulness of the statistics in measuring the job mobility of the entire work force has diminished. The lack of data by occupation has also been considered a problem by many users and limited the usefulness of the series to aid in guiding development of occupational training programs.

There has also been an increasing concern over the low level of labor turnover recorded in the series.

In the mid-1970's, the Employment and Training Administration (ETA) began to investigate alternate sources of labor turnover information relating to all industries. Funded by ETA, several State employment security agencies derived labor turnover from administrative records maintained for the unemployment insurance system.[3]

The significantly higher new-hire rates derived from this source than those produced by the BLS survey for manufacturing industries pointed to problems in the design of the labor turnover sample. It was essentially a "size cutoff" sample directed at establishments with 50 or more employees. The new-hire rates of the few small establishments in the BLS sample were 2 or 3 times higher than corresponding rates of larger establishments. In addition, many of the larger establishments in the sample had cooperated in the program for a long time, were well established, and appeared to have less turnover than large establishments not in the sample. There was also a regional bias in the sample, with some of the fast growing States, particularly California, being underrepresented. The Bureau had been aware of these problems for some time, but funds had not been available to make the necessary improvements in the sample design and in the estimating methodology.

However, several studies have shown that the degree of bias in the survey results was considerably smaller for total separations. On this basis, the quit and layoff data retained validity as an economic indicator.

Alternate sources

Although the labor turnover survey was the only source for current statistics by detailed industry categories for the manufacturing sector, there are a number of other sources that provide information which users may substitute for the BLS survey. The labor turnover rates derived through the operations of State unemployment insurance systems have the potential of providing quarterly rates of total separations, total accessions, and new hires by industry for previous quarters. These turnover rates are computed by comparing the social security numbers of employees working for a given employer in a given quarter, as reported on the employer's quarterly unemployment insurance tax report, with the social security numbers reported by the same employer in prior quarters. Unfortunately, this methodology cannot distinguish between the types of separations, such as quits and layoffs.

At present, 12 States do not have unemployment insurance systems which require regular reporting of quarterly wages for each employee identified by social security numbers, a requisite for using this methodology. Only 21 States are currently producing labor turnover rates with this methodology, and seven more are in the developmental stage of producing the rates.

As a one-time project, the methodology was applied to a special tabulation of a 1-percent sample of quarterly social security records made available by the Social Security Administration. This study provided, for the first time, information about the volume of accessions, new hires, and separations in all industries and all States for the second quarter of 1974.[4] Because of changes in the filing requirements for employer reports for social security taxes, this source is not available for years after 1976.

The best alternate source for current information on layoffs is the ETA's *Unemployment Insurance Weekly Claims Report*. Initial claims derived from that source will be used by the Bureau of Economic Analysis in place of the layoff rate in manufacturing as one of the 12 components in calculating the Index of Leading Economic Indicators. The Current Population Survey is another source of statistics on labor turnover. Information on unemployed persons on layoff is collected each month, and data are published in *Employment and Earnings* by various characteristics, such as age, sex, race, and duration of unemployment. Unpublished data are available by other characteristics, including industry of last job, although the industry detail is limited. From time to time, the survey is also used to collect data on job tenure and mobility.

The Office of Personnel Management calculates labor turnover rates for Federal employees from its Central Personnel Data file. These data are published monthly for all Federal agencies. Separate rates are available for total accessions, total separations, new hires, transfers, quits, and all other separations.

There are several private organizations that collect and disseminate labor turnover information. The most important of these sources is the Bureau of National Affairs. Since 1974, this organization has been collecting labor turnover information from about 600 large companies in all industries. The data are collected quarterly and are published in a bulletin shortly thereafter.[5] The definitions and estimating methodology used by this organization are comparable to those that have been used by BLS. The limited sample size does not allow the production of any industry detail. The Administrative Management Society has been collecting annual data on separations of office employees approximately every other year since 1969. The results of this survey, derived from about 2,000 reporting companies in a wide spectrum of industries, are published in the Society's *Management World* journal.[6] The separations data are restricted to office employees only and do not include temporary layoffs and certain leaves of absence.

Historical data on the BLS national labor turnover series will be maintained in the BLS data base and will be provided to users who request all or part of the file. The data can be provided as listings or on tape. The Bureau does not maintain a data base for any of the State and area series, but some of the State agencies which had cooperated in the survey may be able to provide these data to interested users. ☐

FOOTNOTES

[1] Paul A. Armknecht, "Job vacancies in manufacturing, 1969–73," *Monthly Labor Review*, August 1974, pp. 27–33.

[2] Paul A. Armknecht and John F. Early, "Quits in manufacturing: a study of their causes," *Monthly Labor Review*, November 1972, pp. 31–37. For a partial listing of the major studies using the series, see James L. Price, *The Study of Turnover* (The Iowa State University Press, 1977), 160 pp.

[3] Philip Hardiman and Marge Sugarman, "Employment Service Potential: The Dimensions of Labor Turnover", report prepared by the Employment Development Department, State of California, Sept. 1, 1979.

[4] Malcolm Cohen and Arthur Schwartz, "U.S. labor turnover: analysis of a new measure," *Monthly Labor Review*, November 1980, pp. 9–13.

[5] Mary Green Miner, "Job absence and turnover: a new source of data," *Monthly Labor Review*, October 1977, pp. 24–31.

[6] Edward G. Thomas, "1978 AMS Office Turnover Survey," *Management World*, September 1979, pp. 19–21.

Occupational winners and losers: who they were during 1972–80

Job gains occurred in most occupational groupings in which Americans were employed during the 1970's, but close to half of the overall employment increase took place in just 20 of the 235 occupations; and, several job groups lost thousands of workers

CAROL BOYD LEON

Most occupations gained workers in the 1970's. An employment increase of 15.6 million persons during 1972 to 1980 was dispersed among three-fourths of the 235 or so occupational categories in which most persons were employed. However, almost half of this job growth can be attributed to just 20 occupations—including secretaries, cashiers, registered nurses, and cooks. Among occupations declining in size were delivery workers, cleaners and servants in private households, and farmers. (See exhibit 1.)

This article looks at employment changes among the biggest occupational winners and losers of the 1970's. Two sets of criteria were used to choose the winners. An occupation must be one of the top 20 in terms of the number of workers added to the annual average employment level between 1972 and 1980—these increases ranged from more than 200,000 to nearly 1 million; alternately, the job group must have been one of the 20 which grew by 75 percent or more. The majority of occupations which met these tests were in either professional or clerical fields. Four job groups—computer specialists, computer operators, health technologists and technicians, and bank tellers—met both criteria. For all winners, job expansion by industry and by sex is examined.

The 10 biggest losers of 1972–80—that is, occupations which declined by 60,000 workers or more—were generally other than white-collar jobs. (Percentage decrease in employment was not used as a criterion for job losers because only occupations with extremely small numbers of workers in them declined by a large proportion and their absolute loss of workers was small.) Various technological and sociological changes help account for many of the employment decreases, as will be pointed out later.

The Current Population Survey, which is the article's major data source, provides employment information for about 435 detailed occupations. However, this discussion is limited to those which posted a 1980 annual average employment level of 50,000 workers or more. To determine growth during the 1970's, annual averages for 1972 and 1980 are used; the year 1972 was chosen as the base year because earlier data are not available for all occupations on a comparable definitional basis.[1]

Where has the growth occurred?

About half of the 15.6 million increase in employment between 1972 and 1980 took place among two white-collar groups—professional and technical workers rose by 4.2 million and clerical workers registered a gain of 3.9 million. Next highest were managers and administrators with an increase of 2.9 million, service workers (excluding private household workers) with 2.4 million, and craft and kindred workers with 1.7 million.

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Exhibit 1. Occupations ranked by the size of their absolute employment changes, 1972–80

Largest increases	Largest decreases
Secretaries	Delivery and route workers
Cashiers	Cleaners and servants
Registered nurses	Farm owners and tenant farmers
Cooks	Unpaid family farmworkers
Truckdrivers	Garage workers and gas station attendants
Accountants	Sewers and stitchers
Engineers	Child-care workers
Computer and peripheral machine operators	Textile operatives
Bookkeepers	Telephone operators
Computer specialists	Stenographers

Only small increases were posted among salesworkers, operatives, and nonfarm laborers, while there were declines of about 400,000 each among private household and farmworkers.

Growth rates follow a similar pattern. These measure the increase in employment relative to the initial (1972) employment level of the occupation. As shown below, white-collar groups—in particular, professionals, managers and administrators, and clerical workers—experienced the fastest growth between 1972 and 1980, followed by service workers (excluding private household):

Occupation	*Employment change, in percent*
Total	19.1
White-collar workers	30.0
Professional and technical workers	36.3
Managers and administrators, except farm	35.9
Salesworkers	15.3
Clerical and kindred workers	27.1
Blue-collar workers	7.8
Craft and kindred workers	15.9
Operatives, except transport	0.1
Transport equipment operatives	8.1
Nonfarm laborers	6.9
Service workers	18.2
Private household workers	−27.6
Other service workers	25.1
Farmworkers	−11.9

The only blue-collar occupational group which even came near the average growth rate was craft and kindred jobs. Generally speaking, as the service-producing sector expanded, so did office and service jobs, while slow growth in manufacturing and other goods-producing industries limited the increase in the employment of production workers.

Women accounted for about 65 percent of the employment rise over the period, an amount disproportionate to their 38-percent share of total employment in 1972. Many of the specific occupational winners—including the top five mentioned earlier—were "female-dominated." Women also made up a relatively large share of the job gains in all major occupational groups which experienced growth. More specifically, women accounted for at least half of the increases in employment in each of the major groups except craft and kindred jobs, where 1 of 5 additional workers was female. And even among craftworkers, women composed much of the employment advance compared with their portion of all craft jobs, as they accounted for fewer than 1 of 25 craftworkers in 1972. In two occupational groups, women made up 100 percent of the (limited) job gains, as the number of men employed as nonfarm laborers remained about the same and the number working as operatives except transport declined. Women made up a small part of the drop in farmworkers but virtually all of the decrease among private household workers.

Surge among white-collar groups

The proportion of workers employed in white-collar occupations reached 50 percent for the first time in 1976 and exceeded 52 percent by 1980. The continual climb in the proportion of these jobs can be attributed to three of its four major occupational groups—professional and technical workers, managers and administrators, and clerical workers.

Professional workers. The most growth took place among professional workers; seven specific occupations with increases of 200,000 or more fall under this heading. (See table 1.) The biggest employment gain was among registered nurses, whose job count was boosted by the growing demand for health services throughout the 1970's. (However, demand for services does not necessarily imply a simple one-to-one relationship to job growth in the health or any other industry. Other factors, such as relative wages received by persons in the occupation, the supply of workers with appropriate skills, changes in productivity and technology, and the degree to which other types of workers can satisfy the additional demand may all contribute to determining the magnitude of the employment change.) The health industry boom—caused by the greater availability of medical insurance, a larger and older population, and more public awareness of quality health care, among other factors—led to the job gains for nurses, as well as for dieticians, therapists, health technicians, administrators, and health aides.[2] The number of physicians increased too, but their rate of growth was slower than that of other health workers. The employment advance among registered nurses, which totaled 500,000 during 1972–80, occurred mainly among those in hospitals (350,000) and in medical offices (125,000). Although the number of male nurses more than doubled—they totaled 45,000 by 1980—95 percent of the job gains occurred among women.

The category of health technologists and technicians was among the biggest gainers—both in the size of the job gain and the growth rate of the employed—although they posted an employment increase of only half that of registered nurses. (See tables 1 and 2.) As the demand for skilled persons to operate highly sophisticated diagnostic and therapeutic equipment grew, the employment level of health technologists and technicians advanced by approximately 255,000. More than half of this gain was among hospital workers, particularly those employed as clinical laboratory and radiologic technicians. As one might suspect, substantial increases also occurred among health technicians working in medical offices and other such facilities. A much smaller, but still noteworthy, gain took place in local government, which employed very few health technologists and technicians in the early 1970's compared with 13,000 by 1980. Women accounted for about two-thirds of the total increase among health technologists and technicians, in line with their representation in that occupation.

In another health-related occupation, therapists posted an 85-percent increase (almost 100,000), as the health industry as a whole grew rapidly. The exceptionally fast growth rate among therapists can be partly traced to stronger interest in, and funding for, rehabilitation programs. The representation of women among therapists advanced from about 60 to 75 percent from 1972 to 1980, as the vast majority of new therapists were women.

Table 1. Occupations with the largest absolute increases in employment between 1972 and 1980

[Numbers in thousands]

Occupation	Employed		Employment increases		Rank by size of increase
	1972	1980	Number	Percent	
Total employed	81,702	97,270	15,568	19.1	—
Professional and technical workers:					
Accountants	714	1,047	333	46.6	6
Computer specialists	273	584	311	113.9	10
Engineering and science technicians	828	1,095	267	32.2	12
Engineers	1,102	1,433	331	30.0	7
Health technologists and technicians	315	571	256	81.3	14
Lawyers	303	522	219	72.3	19
Registered nurses	801	1,302	501	62.5	3
Salesworkers:					
Real estate agents and brokers	349	582	233	66.8	17
Sales representatives, wholesale trade	696	915	219	31.5	18
Clerical workers:					
Bank tellers	288	531	243	84.4	16
Bookkeepers	1,584	1,904	320	20.2	9
Cashiers	998	1,554	556	55.7	2
Computer and peripheral machine operators	196	522	326	166.3	8
Secretaries	2,949	3,876	927	31.4	1
Craftworkers:					
Heavy equipment mechanics	714	963	249	34.9	15
Transportation equipment operatives:					
Truckdrivers	1,441	1,844	403	28.0	5
Nonfarm laborers:					
Stockhandlers	723	941	218	30.2	20
Service workers:					
Building interior cleaners excluding janitors and sextons	668	932	264	39.5	13
Cooks	866	1,331	465	53.7	4
Waiters	1,124	1,416	292	26.0	11

NOTE: Data are annual averages.

While still a relatively small health occupation, the number of dieticians grew swiftly, as their employment total rose from less than 35,000 to 60,000. As about 9 of 10 dieticians are women, virtually all of the job gains were registered among women. Like the other health workers, both therapists and dieticians found most job opportunities in hospitals, nursing homes, and other medical facilities.

The professional group which posted the next largest increase after nurses—about 335,000—was accountants. As business and individuals became more aware of the need for financial management, demand for accountants and accounting firms expanded; in fact, the rate of growth of accountants—a group which includes income tax advisers and others with accounting skills—was about twice that of total employment. About 30 percent of the job gains took place among those in professional services industries, especially the accounting, auditing, and bookkeeping services industry (although accountants working for hospitals and educational services made up part of the increase). An additional 20 percent of the advance occurred among manufacturing industries, with most of that rise being registered in firms which produce durable goods. The remaining 50 percent of the increase was spread among numerous industries, including public administration at all three levels of government, banking and finance, wholesale trade, and insurance and real estate. Although most accountants are men, the female share of the industry rose by 15 percentage points, to about 36 percent, as two-thirds of the additional accountants were women.

Engineers had a substantial employment rise, as their job count moved ahead by 330,000. Close to half of the job growth for engineers was in manufacturing. Next came professional services, and noticeable growth also occurred in business services, public utilities, and public administration (State and local). Industrial, and electrical and electronic engineers experienced the largest job gains, followed by mechanical engineers. These were also the fields in which employment of female engineers expanded the most. Although women made up only 15 percent of the total employment advance of engineers, their 50,000 increase was exceptional, considering there were fewer than 10,000 female engineers in 1972.

Related to the job gains among engineers was a rise of 265,000 among engineering and science technicians. These gains were spread throughout the economy but, like that of engineers, much of their employment increase was in manufacturing. Especially rapid growth in the production and use of electrical and electronic equipment and computer equipment accounted for a sustantial number of new engineering jobs in those manufacturing industries and in the field of telecommunications. Although engineering and science technician jobs traditionally have been filled by men, women accounted for 45 percent of the 1972–80 growth, thereby doubling their representation in the occupational group from 9 to 18 percent.

Well known for its growth is the computer field, as advances in computer technology and usage have generated literally hundreds of thousands of jobs during both the 1960's and 1970's. Among just the professional job categories, computer specialists—mainly programmers and analysts—increased from about 12,000 in 1960[3] to 275,000 in 1972 and to nearly 585,000 by 1980. The number of persons employed as computer programmers came close to doubling during the 1972–80 period, while computer systems analysts were not far from tripling their 1972 level. Both of these occupations were among the 20 fastest-growing, and systems analysts were at the top in terms of percentage growth. Interestingly, it is difficult to pinpoint those industry groups in which most of the employment increase among computer specialists took place, because computers influenced nearly every major industry. As technological advances have made better computer equipment available at more reasonable prices, industries with firms which could not previously afford computers—such as some business services—and industries which grew only slightly during the 1970's—such as several durable goods manufacturing industries—incorporated computers into their operations.[4] Other large increases in the employment of computer specialists occurred in transportation and public utilities, especially telecommunications; finance, insurance, and real estate; nondurable goods manufacturing; public administration; and professional services, particularly educational services. (Employment advances in another computer-related occupation, computer operator, will be discussed later in this article.)

The female share of computer specialist jobs rose from 17 percent in 1972 to 26 percent in 1980, as 1 of 3 additional jobholders was a woman. Women continued to be more likely to be programmers than systems analysts—although female representation among both groups of workers increased substantially.

While lawyers make up one of the top 20 occupations only in terms of the size of their employment increase, both the absolute size of their gain—220,000—and their rate of growth—more than 70 percent—were notable. The demand for lawyers grew rapidly as businesses and individuals called upon them to untangle and interpret laws which are increasing in number and in complexity. About two-thirds of the rise in the employment of lawyers, which includes law clerks and many paralegal workers, took place among the group to which the majority belong—that is, those in private practice, either with law firms or alone. Proportionately speaking, a larger increase was registered among government lawyers, whose number more than doubled between 1972 and 1980 (from 40,000 to 90,000). Nearly a quarter of the job gains for lawyers were in public administration, with increases occurring at Federal, State, and, especially, local levels. Most of the remaining rise in employment—about one-tenth of the total increase of lawyers—was among those employed as house counsel by private firms, and a small increase was noted among law teachers.

Although the practice of law traditionally has been a "man's job"—women accounted for only 4 percent of all lawyers in 1972—1 of 4 lawyers added to the job count during 1972–80 was a woman. By 1980, the fe-

Table 2. Occupations with the largest percentage increase in employment between 1972 and 1980

[Numbers in thousands]

Occupation	Employed		Employment increase		Rank by size of increase
	1972	1980	Number	Percent	
Total employed	81,702	97,270	15,568	19.1	–
Professional and technical workers:					
Authors	30	70	40	133.3	4
Biological scientists	36	64	28	77.8	19
Computer programmers	186	341	155	83.3	14
Computer systems analysts	74	201	127	171.6	1
Designers	110	193	83	75.5	20
Dieticians	33	59	26	78.8	17
Economists	68	138	70	102.9	7
Health technologists and technicians	315	571	256	81.3	15
Psychologists	50	106	56	112.0	5
Research workers	86	175	89	103.5	6
Therapists	115	213	98	85.2	10
Managers and administrators, except farm:					
Health administrators	118	210	92	78[illegible]	18
Clerical workers:					
Bank tellers	288	531	243	84.4	12
Computer and peripheral equipment operators	196	522	326	166.3	2
Teachers' aids except school monitors	206	383	177	85.9	9
Craftworkers:					
Data processing machine repairers	45	83	38	84.4	12
Operatives, except transport:					
Insulation workers	30	59	29	96.7	8
Nonfarm laborers:					
Warehouse laborers, not elsewhere classified	150	272	122	81.3	15
Service workers:					
Health aides, except nursing	157	290	133	84.7	11
Welfare service aides	34	87	53	155.9	3

NOTE: Data are annual averages.

male proportion of employed lawyers was 13 percent, and this share is expected to continue rising.

Two of the three professional occupations which more than doubled in size fall under the social sciences heading—psychologists and economists. Psychologists are heavily concentrated in just a few industries; accordingly, their 55,000 increase was accounted for almost exclusively by job gains in professional services. Hospitals and medical offices provided opportunities for slightly more than half of the additional psychologists, while other services industries, including educational ones, absorbed most of the remainder. More than half of the increases took place among women, bringing their share of the employment total for psychologists to just over 50 percent.

The industrial distribution of economists is much more diverse, and so their 70,000 rise was spread among many types of businesses. About 30 percent of the advance took place in manufacturing firms, while banks and particularly business services—such as securities and investment companies, economic research firms, and management consulting firms—made up another 30 percent. About 2 of 5 economists added between 1972 and 1980 were women, making their proportion 25 percent.

The third group of professionals which more than doubled in size was composed of authors, including magazine free-lancers, speech writers, and television writers. About three-fourths of all authors in 1980 were self-employed and, accordingly, most of the increase of 40,000 was among self-employed workers. Men and women shared equally in the group's employment gain, and the proportion of women in this occupation was about 43 percent in both 1972 and 1980.

Other fast-growing professional occupations include biological scientists, designers, and research workers. The occupational group referred to as life and physical scientists as a whole grew at about twice the national rate for all workers, but biological scientists, who make up about one-fifth of the overall scientist group, increased at the even faster rate of close to 80 percent. Nevertheless, biological scientists increased by fewer than 30,000, with most of the gain occurring among those working in hospitals and medical offices, government (particularly at the State level), and education. Women made up half of the employment increase, as their representation in this occupation rose about 13 percentage points, to 38 percent.

The majority of designers in 1972 worked for manufacturing firms, particularly in the development of durable goods. However, an increase of 80,000 in the number of designers was most strongly felt in professional and business services. Both sexes shared in the 75-percent increase in the employment of designers. Men continued to predominate in this occupation, although women increased their proportion 10 percentage points, to 30 percent.

Employment of research workers who are not included in one of the other professional occupations rose substantially in every major industry group in which researchers can be found. A doubling in the number of research workers, to 175,000, was especially evident in professional service industries, such as educational institutions and law offices. Women accounted for almost half of the overall advance and, by 1980, made up about a third of all researchers.

Managers and adminstrators. In contrast to the 1960's, which had slow growth in managerial and administrative jobs, the 1970's saw rapid advances in the employment of these workers. Jobs for managers and administrators increased nearly as quickly as those for professional workers, the fastest-growing occupational group. However, the 2.9-million increase in the number of managers was substantially less than that posted for professionals or clerical workers. Moreover, no single managerial occupation qualified in the top 20 in terms of the size of the increase, although bank officials and financial managers—with an increase of about 215,000—was in 21st place. The duties performed by different persons working in managerial and administrative positions can be quite varied, and actually fewer than half of these workers are classified according to a specific occupation under the managerial heading. That is, most managers are grouped together under the indefinite title, "managers and administrators, not elsewhere classified." The number of such workers increased by more than a third, or 1.7 million.

One adminstrative group with a relatively fast rate of growth was health administrators; their number increased by close to 80 percent, as more than 90,000 such employees—about half men and half women—were added to the job count. In line with the faster growth of health industry workers in medical facilities other than hospitals, only one-third of the increase among health administrators was attributable to hospital hirings. In both 1972 and 1980, almost half of all health adminstrators were women.

Salesworkers. The growth among salesworkers was slower than the national average, as their number rose by only about 800,000, or 15 percent, during 1972–80. The recessions of 1974–75 and 1980 had a dampening effect on this group, but, as will be seen in the discussion of cashiers in the clerical occupations, much of the actual increase in retail trade employment is reflected at the cash register rather than on the sales floor. Also, there has been a substantial rise in the number of persons who are salesworkers in their secondary job. The number of these multiple jobholders grew by about

250,000, or 75 percent, from 1972 to 1980.

Real estate agents and brokers—with an increase of almost 235,000—were 1 of only 2 salesworker categories listed among the Nation's top gainers. The growth among real estate workers can be partly traced to the tremendous rise in the investment potential of homeownership during most of the 1970's and to a growing economy's need for additional residential and commercial buildings. Moreover, saleswork can provide an opportunity for part-time employment, as about one-fifth of all real estate agents work less than 35 hours per week.[5] By 1980, half were women, as they accounted for 7 of 10 additional agents; hence, this occupation is becoming more female-dominated.

A large absolute increase also was posted among sales representatives in wholesale trade. However, their rate of growth was only about 12 percentage points higher than the national average, and their 220,000 increase occurred primarily as a result of sizable advances within a few industries—most notably the wholesale machinery equipment and supplies industry in which the employment of salesworkers grew by 70,000. The female proportion of this occupation, while still low at only about 10 percent, doubled during the period.

Clerical workers. Clericals—the largest occupational group of the 12 major job groups—took second place after professionals in terms of the 1972–80 employment advance. Like professional workers, clerical occupations included 4 of the 10 top gainers; among these were the two largest (absolute) gainers, secretaries and cashiers. Clerical workers, in particular, were affected by developments in computers and office machines, as employment decreased among stenographers and keypunch operators, for example, while increasing among computer operators.

Secretaries, who make up one-fifth of all clerical workers, registered an increase of more than 925,000, making them the leading gainer among all occupational groups. As secretaries are needed in every industry, their employment grew in all sectors of the economy, especially among fast-growing industries such as business services, welfare and religious organizations, and local government, where their employment advanced by more than 50 percent. Legal secretaries experienced exceptional growth, increasing by about 70 percent.

Only 1 of 100 secretaries is a man, and virtually all of the field's increase was among women. The traditionally female composition of the secretarial work force—as well as that of cashiers—showed no indication of changes in the 1970's.

Cashiers, whose numbers grew by more than 550,000, are strongly concentrated in the retail trade industry. Although the employment of salesworkers in retail trade was virtually unchanged, the shift to self-service drugstores, clothing stores, discount operations, and catalog stores increased the demand for cashiers. The proliferation of fast-food eating places, which often require several cashiers, led to more than a doubling of the number of cashiers working in restaurants, as well as increases in part-time job opportunities. In 1976, 4 of 10 cashiers were working part time.[6] Women made up 87 percent of all cashiers in both the early 1970's and the beginning of the 1980's.

Computer and peripheral machine operators increased by 325,000 and bookkeepers by 320,000. However, whereas the latter grew at about the same rate as that for the Nation as a whole, computer operators were the second fastest-growing occupation, following only computer systems analysts. As technological improvements have decreased the need for keypunch operators, computer operators became the largest computer occupation, accounting for nearly 40 percent of all computer personnel.[7] As was the case for programmers and systems analysts, the demand for computer operators increased in every major industry.

The need for bookkeeping services has grown in line with the overall expansion of the economy, as all industries include firms which require the services of one bookkeeper or more. Although 1 of 3 works in wholesale or retail trade, their employment grew more rapidly in other industries. Professional services, most notably medical offices, experienced a particularly fast rate of growth for bookkeepers. More than 90 percent of all bookkeepers in 1980 were women; this proportion had been slightly lower in 1972.

Another clerical occupation with a sizable increase in jobholders was that of bank tellers—85 percent or 245,000. As the suburbs expanded and branch banking proliferated, the demand for tellers increased. Apparently, the appearance of automatic teller machines served to lengthen banking hours without eliminating job opportunities for bank tellers. As has been seen, the proportion of women in several traditionally female occupations has grown, as more women have joined the labor force; this occupation is no exception. The proportion of female bookkeepers rose by 5 percentage points, to nearly 93 percent, by the start of the 1980's.

Teachers' aides (excluding school monitors) were a very small group in 1960 but grew extremely fast during both the 1960's and 1970's; their number increased by about 85 percent, or 175,000, from 1972 to 1980. These workers—who serve as teachers' assistants and thereby assume some functions formerly performed by teachers, for example, grading papers and exams, supervising study halls, and helping out in kindergartens—are almost always women. The female proportion in this rapidly growing field was approximately 94 percent in 1980, up a few points from the early 1970's.

Service workers stride ahead

While service worker jobs can be found in all major industry groups, most—nearly 90 percent—are in the service-producing sector of the economy. And as employment in this sector bounded forward, so did the number of service workers (excluding private household). The fastest-growing nonwhite-collar occupational category, it included five job groups which registered relatively large employment increases, either numerically or percentage-wise.

The occupation which ranks fourth among those with the largest numerical increase in employment was that of cooks, whose job count rose by 465,000, or close to 55 percent. Related to this increase was an almost 300,000, or 25 percent, advance among waiters (including waitresses). As more women joined the labor force, turning single-earner families into multi-earner ones, the number of restaurants and fast-food places expanded and were frequented more often. The extremely large rise in the employment of cooks, including grill cooks, pizza makers, and fast-order cooks, can also be partially accounted for by the use of several cooks simultaneously in one eating establishment. In addition, part of the increase in their employment—about 55,000—was because of more job opportunities in hospitals and other medical facilities and in schools.

About one-third of all cooks work part time—about the same proportion as for all service workers—while closer to 45 percent of waiters are part-timers.[8] Most waiters and cooks are women, but men made up an increasing proportion of the latter during the 1970's. The representation of women among cooks dropped about 9 percentage points, to 53 percent, while the female proportion of waiters remained around 90 percent.

Another group of service workers which posted a large increase was building interior cleaners (excluding janitors and sextons). Rising about 265,000 from 1972 to 1980, they experienced a growth rate about twice the national average. The number of such workers rose substantially in many industries, such as professional and business services—including building cleaning services—and in manufacturing and retail trade. The proportion of women in this occupation barely changed over the 9-year period, staying near 55 percent.

One of the fastest-growing occupations—which nevertheless totaled fewer than 90,000 in 1980—was that of welfare service aides. Their more than 150 percent increase made this the third largest gainer in the 1970's in terms of rate of growth. In 1960, prior to the widespread establishment of programs in social welfare, there were fewer than 1,000 welfare service aides. Community service workers, family service aides, and other welfare service aides work mainly in welfare and religious organizations but can also be found in medical facilities, such as nursing homes for the aged, and in schools. Current Population Survey data for 1980 show that 9 of 10 of these workers were women.

A larger service occupation, and one which also grew rapidly during the 1970's, was that of health aides (excluding nursing aides, orderlies, and attendants). Employment in this category—which includes medical assistants, pharmacists' helpers, and numerous others—was part of the overall growth of health-related occupations. Half of the nearly 135,000 rise in health aides was among those working in medical facilities other than hospitals, while a third was because of increased hospital employment. The number of women in this occupation doubled between 1972 and 1980, bringing their representation among health aides up 5 percentage points, to almost 85 percent.

Slow blue-collar growth

Blue-collar jobs, while still a major portion of the labor market with nearly a one-third share of total employment, accounted for only one-seventh of the overall increase in jobholders since 1972. The sluggish growth of blue-collar employment during the 1960's slowed even further in the 1970's as technological advances reduced the need for some types of blue-collar workers, while the job growth which took place in industries within the service-producing sector had little impact on the opportunities for workers in many blue-collar occupations. Even the rapid expansion of certain durable goods manufacturing industries—such as machinery and electric equipment—had only a slight overall effect on blue-collar employment.

Craft and kindred workers—those in skilled trades—grew at a slower pace than the overall economy but nevertheless made up more than three-fourths of the blue-collar advance, as laborers increased even more slowly and operatives employment was virtually unchanged. However, there were six specific blue-collar occupations which grew enough to qualify as big gainers, either in terms of absolute or percentage increases.

Craft and kindred workers. Much of the news concerning craftworkers in the 1970's focused on the entrance of women into the skilled trades; and, they did make important gains in this area. The number of female craftworkers doubled between 1972 and 1980, rising by about 365,000.[9] This resulted in women's representation among total craftworkers rising to only 6 percent, compared with 3.6 percent in 1972. So while 1 of 5 additional craftworkers over the period were women, and men's employment in the skilled trades rose less than 10 percent, by 1980 this occupation was still predominately male.

Heavy equipment mechanics were the only craft occupation which posted a large employment gain. Much of it took place in manufacturing, although especially rapid growth was characteristic of mechanics in repair services, wholesale trade, and mining. The rate of growth for heavy equipment mechanics as a whole was 35 percent, about 15 points above the national average. Despite the increases already noted for women in this field, the occupation was 98 percent male in 1980.

Data processing machine repairers—also called computer service technicians—experienced essentially the same sharp growth trend as other workers in the computer field, with a percentage gain that placed it as the 10th fastest-growing occupation during the period. While still not a large occupational group, data processing machine repairers increased by nearly 85 percent, as the need for installation, service, and repair of computer equipment expanded as a result of more widespread computer use. These workers were employed mainly in durable goods manufacturing, wholesale trade, and business and repair services, and the growth rate for computer technicians was virtually the same in each of these industries. Like most other craft occupations, this one is more than 90 percent men, but women did hold more jobs as computer repairers in 1980 than they had in 1972.

Operatives except transport. Nontransport operatives made up a no-growth occupational group during the 1970's and only one specific occupation under this heading—insulation workers—experienced a fast rate of growth. Moreover, only a few other nontransport operative occupations grew at a rate even somewhat above the national average; these included mine operatives, welders and flame cutters, and laundry and dry cleaning operatives. The overall standstill among operatives, following only slow growth during the 1960's, was the result of several technological and societal changes. Among these were the shift of consumer demand away from the output of goods-producing industries, in which most operatives work, and towards service-producing industries; technological advances which made production more efficient and thereby reduced the need for as many operatives to produce the same amount of goods; changes in consumer demand for some types of work, such as dressmakers; and an increase in imports of certain goods that may have limited the jobs available, such as for textile workers. The proportion of female operatives (excluding transport) edged up to 40 percent in 1980. In more than a third of the specific operative occupations, the majority of workers were women.

The almost 100-percent growth among insulation workers, bringing their number in 1980 to slightly fewer than 60,000, was the result of the need for insulation in new homes and offices and the demand for more of it among energy-conscious owners of older homes. Almost all insulation workers are men, and the majority are employed by insulation contractors.

Transport equipment operatives. Although this group as a whole experienced slow growth—about 8 percent, or 260,000, since the early 1970's—the jobs under this heading tell a mixed story: three occupations grew at rates equal to or exceeding the national average, two were unchanged, and the remaining one decreased. The fastest growing of the three gainers was busdrivers, whose employment rose about 40 percent, or 100,000.

However, in terms of the actual size of the increase, truckdrivers grew most. Their advance of 400,000 placed them fifth in the ranking of all occupations by size of their employment growth. About 40 percent of all truckdrivers work for transportation companies (including their own), and 20 percent work in wholesale and retail trade. These industries accounted for three-fourths of the job gains, with employment growing more among truckdrivers in the trade industries. Despite a number of articles and even movies about female truckdrivers, 98 percent were men in 1980. However, there were five times as many women holding these jobs in 1980 as in 1972, and their employment level rose to more than 40,000.

Nonfarm laborers. The number of nonfarm laborers, like transport equipment operatives, creeped upward during 1972–80, following a decade of little or no growth. The substitution of machines for laborers, as well as the trend toward employing more highly skilled workers, depressed the hiring of laborers. Although 4 of the 9 specific laborer occupations posted employment declines, stockhandlers increased by more than 200,000 and warehouse laborers were among the fastest growing occupations.

The level of employment among stockhandlers rose by almost 220,000, with virtually all of the growth taking place in retail trade establishments (other than eating and drinking places), their biggest employer. Nearly a fourth of all stockhandlers in 1980 were women—up from 17 percent 8 years earlier—as an additional 100,000 women joined the field. More than 1 of 3 stockhandlers works part time,[10] which helps account for the large number of young persons—both male and female—holding these jobs.

Warehouse laborers (excluding those already counted as stockhandlers) rose by more than 120,000, as several major industry groups increased their hiring of these laborers substantially. Half of all warehouse laborers work in wholesale or retail trade establishments, and many others work in factories or in the transportation industry. Only about 15,000 of the employment increase can be attributed to women. Yet this represents a notable change from the early 1970's when only a few thousand women were employed in this occupation.

Yes, there were losers, too

Despite the magnitude of the employment increase during the 1970s, about 1 of 4 specific occupational groups did not post an employment advance. The declines—spread among about 50 occupations—totaled more than 2 million, ranging from 1,000 workers to more than 300,000. More than half of the 30 occupations which dropped by at least 10,000 workers during 1972–80 were blue-collar jobs, especially those of operatives. There were only five white-collar losers, four of which were in the clerical grouping. And, the same pattern occurred among the 10 biggest losers—that is, occupations whose level of employment dropped by 50,000 or more. Again, the blue-collar category posted the most losers. (See table 3.)

Occupational employment can fall in much the same way it can be boosted by changes in consumer tastes, technology, labor supply, and other factors. For example, a preference for longer hair resulted in less consumer demand for barbers, while the use of dictation machines reduced the business community's need for stenographers.

Delivery and route workers posted the biggest occupational loss—almost 310,000, or a third of the 1972 employment total. These workers, who are employed in wholesale or retail trade, in manufacturing, and to some extent by transportation and service firms, may deliver to homes or stores. The largest percentage declines were posted among those working for factories which produce nondurable goods and those employed in both wholesale and retail trade. A large drop—more than 200,000—occurred from 1973 to 1974, as many businesses were perhaps influenced by the gasoline shortage and resulting high gas prices to reduce delivery services. Employment in this occupation appears to have stabilized during the decade's second half. But despite the occupation's overall employment decline, the number of women who are delivery and route workers almost doubled during 1972–80, though the female proportion was still only 7 percent by 1980.

Table 3. Employment in occupations with declines of 60,000 or more between 1972 and 1980

[Numbers in thousands]

Occupation	Employed		Employment decrease		Rank by size of decrease
	1972	1980	Number	Percent	
Clerical workers:					
Telephone operators . .	392	316	−76	−19.4	9
Stenographers	125	64	−61	−48.8	10
Craftworkers:					
Garage workers and gas station attendants . .	502	337	−165	−32.9	5
Operatives except transport:					
Sewers and stitchers . .	936	788	−148	−15.8	6
Textile operatives	424	323	−101	−23.8	8
Transport equipment operatives:					
Delivery and route workers	892	584	−308	−34.5	1
Private household workers:					
Child-care workers . . .	543	431	−112	−20.6	7
Cleaners and servants .	713	491	−222	−31.1	2
Farmworkers:					
Farm owners and tenant farmers	1,658	1,447	−211	−12.0	3
Farm laborers, unpaid family workers	455	284	−171	−37.6	4

Note: Data are annual averages.

The number of private household workers has been dropping for four decades, as it fell from about 2.4 million in 1940 to 1.4 million by 1972 and 1.0 million by 1980. The two largest specific occupations within the private household workers category—cleaners and servants, and child-care workers—are among the biggest losers of the most recent decade.

Cleaners and servants totaled less than a half million in 1980, following a nearly one-third decline of 220,000 since 1972. This decrease was partially offset by a rise in employment within commercial cleaning businesses. Also, the supply of the private household workers—a group generally paid low wages—declined, perhaps more than the demand for them, as employment opportunities in other fields increased and as public assistance became more available.[11] Just over half of the cleaners and servants in 1980 were black and other minority women; however, nearly 90 percent of the employment decline among workers in this occupation took place among minority women, as older workers retired and younger, better-educated blacks entered other types of occupations. The representation of total women in this field—about 97 percent—was steady over the decade.

Child-care workers in private households, including both young part-time babysitters and full-time experienced adults, also posted a sizable employment decline. Their number dropped by about 110,000, or 20 percent of the 1972 total. During the same period, employment of child-care workers outside the child's own home—such as in day care centers or in the homes of women who care for several children—increased by 75,000, as many working parents turned to these alternatives. Moreover, much of the decrease in private household child-care workers occurred in the early 1970's, with employment in this occupation remaining relatively flat during the decade's latter half. The 1976 change in the income tax law permitting a tax credit to families with certain child-care expenses—in contrast to their early classification as an itemized deduction only—may have helped stem the downward trend of this occupation. About 9 of 10 child-care workers are white women, and most of the 1972–80 decline was among them.

Agricultural employment has dropped dramatically since the early 1900's, when the agricultural count totaled more than 12 million—or a third of all workers—

to the 1980 employment level of 3.3 million, representing just over 3 percent of all employees. Accordingly, farmworkers, who account for 4 of 5 agricultural employees, posted sizable decreases, too. Between 1972 and 1980, the ranks of farmworkers were diminished by 365,000 as farms became more mechanized and the trend towards fewer farms continued. However, it should be noted that the rate of decline among farmworkers slowed considerably during the 1970's and practically all of the 1972–80 decline took place among farmers—that is, farmowners and tenant farmers—and unpaid family workers who are farm laborers; these two groups made up two-thirds of all farmworkers in 1972. Hence, over the same period, the number of wage- or salary-earning farm laborers changed little.

Both owners and renters of small farms and unpaid laborers posted their largest losses before 1978, as their employment level held fairly steady for the balance of the decade. Interestingly, as the number of farmowners and renters declined—by about 210,000—the number of women in this occupation rose by 50,000. Still, about 90 percent of all farmers in 1980 were men.

Approximately 2 of 3 unpaid farm laborers are women, generally the farmer's wife, but his daughter or other female relative also would be included. These unpaid family members must work 15 hours or more per week on the family farm to be counted as employed farm laborers. The 170,000 drop in the number of unpaid workers is partly a response to the reduced number of family farms; the number of farms fell by half a million during the 1970's.[12] Moreover, some of the decrease can be attributed to women moving into paid jobs in the nonagricultural sector, either replacing or supplementing their hours spent on farmwork. If these unpaid farmworkers spend more hours at their off-farm job—which often happens during slack farming seasons—they are classified accordingly. Hence, the decline among farm laborers is caused by more moonlighting among some farmers' relatives and a complete cessation of farmwork among others.

A one-third decline in the number of garage workers and gas station attendants took place between 1972 and 1980. A large factor in this drop was undoubtedly the gasoline shortage of 1973, with the resulting cutbacks in the number and hours of gas stations; but probably of even greater importance was the introduction of self-service pumps. In fact, half of the overall employment drop occurred between 1978 and 1980. Garage workers and gas station attendants, many of whom are relatively young, include a substantial proportion of part-timers—about 30 percent in 1976.[13]

Two of the occupations which posted large job losses—textile operatives and sewers and stitchers—were in many ways related, as some textile firms produce the materials which are then used by sewers. A 150,000 decline among sewers and stitchers and a 100,000 drop among textile operatives—including, for example, spinners, knitters, and weavers—occurred as more efficient machinery, the use of synthetic fibers, and competition from imports have combined to reduce the demand for these workers. As about 95 percent of all sewers and stitchers are women, virtually all of the decrease took place among women. Although women represent about 3 of 5 textile operatives, about half of the reduction among these operatives was accounted for by men.

The employment of telephone operators declined by about 75,000 during 1972–80, as several factors combined to reverse their earlier upward trend. Most of the drop—about 60,000—occurred among telephone company operators, whose job total was affected by changing consumer habits, such as less use of directory assistance caused by the imposition of charges in some areas, and more direct dialing of long-distance calls. In addition, improved switching equipment reduced the need for so many operators. Private branch exchange switchboard operators, who work mainly for large companies, also experienced some decline in demand as firms adopted the operatorless Central Exchange (CENTREX) telephoning system. All of the job loss took place among women, as the number of men employed as telephone operators rose during the 1970's.

In terms of absolute size of the employment decline, those construction laborers who are employed as carpenters' helpers would qualify as the Nation's 10th largest occupational loser. Because much of their 65,000 drop undoubtedly is cyclical, rather than secular, and because the number of carpenters actually rose during the decade, a better choice of occupations for the list of those with big losses probably is stenographers.

The employment of stenographers fell rapidly during the 1970's, as their job count in 1980—at less than 65,000—was only half of its 1972 level. As mentioned earlier, the overall demand for stenographers was greatly diminished, both in the 1960's and 1970's, as a result of the increased use of dictation machines. Virtually every industry which employed stenographers in the early 1970's had drastically reduced the number of these jobs by 1980. For instance, the estimated number of stenographers working in telecommunications fell from 21,000 to 1,000; in manufacturing, their employment dropped from almost 20,000 to less than 5,000. The relative declines among public administration workers were not as large, as skilled shorthand reporters found job opportunities within the court systems. It is likely that many persons who had been classified as stenographers in the early 1970's were working as secretaries, dictaphone typists, or in other clerical fields by 1980. Employment of both male and female stenographers was reduced by about half, resulting in virtually no change in the 90 percent female share of theses jobs.

Some of the specific occupational changes of the 1970's were similar to those of the previous decade—for example, strong growth was maintained among computer specialists and cashiers, and declines continued among unpaid farm laborers. However, the employment changes for some occupations in the 1970's were in contrast to changes in the 1960's. For instance, the big winners of the 1960's included billing clerks and library attendants, which were both slower than average gainers during the 1970's; but a substantial loss was posted by machinists in the 1960's, whose number had shown strong growth during the more recent decade. How much the occupational employment trends of the 1970's continue through the 1980's remains to be seen.□

NOTE: The data are based on 1970 Decennial Census population counts, adjusted for the aging of the population, deaths, and net migration. The Bureau of Labor Statistics has subsequently converted current CPS estimates to reflect the 1980 census, which enumerated 4.7 million more people than had been estimated in updating the 1970 figure. Because this difference was so much larger than previous censuses, historical CPS data series also are being revised, including broad occupational employment categories. Unlike data for the major labor force series, the full range of revised data for detailed occupational categories was not available at this writing; indeed, revisions of some of the detailed series may not be undertaken. However, even if revised data were available, their validity might be questionable at the level of detail in this analysis. (The size and scope of the revisions of major labor force data as a result of the 1980 census will be discussed in an article in the July *Review.*)

FOOTNOTES

[1] The Current Population Survey is a monthly survey of about 60,000 households around the Nation conducted by the Bureau of the Census for the Bureau of Labor Statistics. For all persons ages 16 and over, the following questions are asked in order to classify workers by occupation: (1) "What kind of work was . . . doing? and (2) What were . . .'s most important activities or duties?" For a listing of the job titles which made up each detailed occupation during 1972–80 see *Classified Index of Industries and Occupations,* 1970 Census of Population, U.S. Department of Commerce, September 1971. Beginning in 1983, the Current Population Survey will use the Standard Occupational Classification on which the 1980 Census of Population was based. For information detailing occupational changes between 1960 and 1970 based on the censuses for those years, see Constance Bogh DiCesare, "Changes in the occupational structure of U.S. jobs," *Monthly Labor Review,* March 1975, pp. 24–34.

Data on occupational employment are also developed by the Bureau based on the Occupational Employment Statistics (OES) surveys. The OES surveys cover wage and salary workers on the payrolls of nonagricultural establishments, except private households. Data are collected from a sample of employers who report occupational employment totals in their establishments based on specific occupational definitions on the survey questionnaire. The OES surveys are conducted on a 3-year cycle, with about one-third of the economy covered each year. To develop occupational employment estimates for a specific year, occupational staffing patterns of industries are developed from the OES survey data. These patterns are then applied to annual averages of total employment by industry from the Bureau's Current Employment Statistics Survey. The resulting data are summed across industries and added to Current Population Survey (CPS) employment data for workers not covered by the OES surveys—agriculture, private household, self-employed, and unpaid family workers—to develop estimates of total employment by occupation.

This procedure was used for the first time in 1980 to develop occupational employment estimates for 1978. These estimates were also used as the base of occupational projections to 1990 (see Max Carey, "Occupational employment growth through 1990," *Monthly Labor Review,* August 1981, pp. 43–55).

For many comparable occupations, significant differences exist between occupational employment estimates in the CPS and those based on OES survey data. These differences not only reflect sampling and nonsampling errors of each survey, but also conceptual differences. For example, the CPS is a count of individuals and therefore workers with two jobs or more are counted once in their primary occupation. On the other hand, the OES surveys count jobs, and workers on the payrolls of two employers or more (establishments) are counted in the occupation held in each establishment. More complete details on differences in occupational employment data derived from the CPS and the OES surveys are available in an unpublished paper *Comparison of Occupational Employment in the 1978 Census-based and OES Survey-based Matrices,* OES Technical Paper-1. Available from the BLS Division of Occupational Outlook.

[2] For more information on the growth of the health industry, see Edward S. Sekscenski, "The health services industry: a decade of expansion," *Monthly Labor Review,* May 1981, pp. 9–16.

[3] The data source for the number of computer specialists in 1960 (12,142) is the 1960 Census of Population. See DiCesare, "Changes in the occupational structure."

[4] For more information on the growth and outlook of the computer industry and its related occupations, see H. Phillip Howard and Debra Rothstein, "Up, Up, Up, and Away: Trends in Computer Occupations," *Occupational Outlook Quarterly,* Summer 1981, pp. 3–11. Also see "Small business computers: the need for them is increasing," *Office,* July 1979, pp. 77–79.

[5] Data presented in this report on the part-time status of workers by detailed occupational group refer to 1976 and can be found in "Who's Working Part Time These Days?" *Occupational Outlook Quarterly,* Summer 1979, pp. 14–17.

[6] Ibid.

[7] For more on the changing distribution of computer jobs, see Howard and Rothstein, "Up, Up, Up, and Away."

[8] "Who's Working Part Time?"

[9] Some of the specific craft occupations in which the number of women at least tripled were: carpenters, among whom the number of female jobholders increased from 5,000 to 18,000; other construction craftworkers, with an increase from about 15,000 to almost 50,000; machinists, from 2,000 to 18,000; heavy equipment mechanics, from 5,000 to 15,000; and telephone installers and repairers, from 6,000 to 27,000.

[10] "Who's Working Part Time?"

[11] See Allyson Sherman Grossman, "Women in domestic work: yesterday and today," *Monthly Labor Review,* August 1980, pp. 17–22.

[12] For more information on farmworkers, see Patricia A. Daly, "Agricultural employment: has the decline ended?" *Monthly Labor Review,* November 1981, pp. 11–17.

[13] "Who's Working Part Time?"

Blacks in the 1970's: Did they scale the job ladder?

More blacks obtained white-collar jobs but fewer penetrated higher-salaried positions; mobility in higher-paid blue-collar jobs was somewhat more impressive

DIANE NILSEN WESTCOTT

The proportion of workers holding white-collar jobs has increased steadily over the past few decades as employment grew quite rapidly in the professional and clerical fields. Accompanying this movement were substantial declines among private household workers and farmworkers. Each of these trends has had an impact on the employment patterns of black workers.[1] Blacks made some advances in the more highly skilled occupational groups. For example, in 1960, 11 percent of black workers were in professional and technical and craft worker positions; by 1980, their proportion had almost doubled to 21 percent.

Throughout the 1960's, blacks advanced both socially and economically, making notable strides in a number of areas including educational attainment, voting rights, equal housing opportunities, and earnings, as well as in employment.[2] These advancements came about during a period of favorable economic conditions; however, it was also a time of social change which saw the passage of the Civil Rights Act of 1964 and the establishment of the Equal Employment Opportunity Commission. During the 1970–80 period, however, job opportunities and occupational mobility slowed considerably as the Nation underwent three recessions. With each contraction came periods of sustained and progressively higher levels of unemployment, accompanied by severe inflationary pressures which failed to subside over the course of the decade. Movement up the occupational scale for blacks progressed more slowly during the 1970's, as the number of black professional and craft workers increased only about half as fast as during the 1960's. Clearly, economic disruptions affected the occupational advancement not only of blacks, but of all workers as well.

Between 1972[3] and 1980, the number of employed blacks increased by 1.3 million, or 17 percent. Their proportion of the Nation's employed work force—9.4 percent—did not change, as the white employment level rose by 18 percent. The largest employment gains for blacks occurred in the white-collar occupations, where the four major subcategories—professional and technical, managerial and administrative, sales, and clerical—increased very sharply. (See table 1.) While their advancement in these occupational categories was proportionately greater than for whites, it was not sufficient to alter materially the overall black-white proportions of the previous decade, and blacks continued to represent a disproportionately small number of white-collar workers.

This article examines the occupational shifts of black workers between 1972 and 1980, using Current Population Survey data on employment by detailed occupation, race, and sex. To further assess the extent of occupational mobility among blacks during this period, occupational data by area of residence and usual weekly earnings are also analyzed.

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Table 1. Employment change by occupation and race, 1972 and 1980, annual averages

[Numbers in thousands]

Occupation	Black employment change, 1972–1980		White employment change, 1972–1980	
	Number	Percent	Number	Percent
Total employment	1,344	17.3	13,306	18.2
White-collar workers	1,165	55.3	10,022	27.4
Professional and technical	364	55.4	3,592	33.8
Managers and administrators	168	69.1	2,639	34.2
Sales	88	51.9	698	13.5
Clerical	580	52.7	3,094	23.8
Blue-collar workers	215	6.8	1,700	7.0
Craft and kindred workers	217	32.3	1,427	14.2
Operatives, except transport	73	5.8	−209	−2.3
Transport equipment operatives	41	9.0	204	7.5
Nonfarm laborers	−116	−14.7	337	10.0
Service workers	21	1.0	1,826	21.2
Private household workers	−238	−41.8	−159	−18.6
Other service workers	259	15.9	1,985	25.6
Farmworkers	−74	−31.9	−302	−10.8
Farm managers	−23	−51.1	−187	−11.4
Farm laborers	−51	−27.3	−116	−9.9

Black-white employment changes

Between 1972 and 1980, employment in the professional and technical occupations expanded rapidly, and both blacks and whites increased their participation in these fields accordingly. The number of black men in professional positions grew at a slightly faster pace than that of white males during the decade. Still, in 1980, 16 percent of all white men were employed as professional workers, twice the black male proportion. This 2-to-1 ratio is only slightly lower than that which prevailed in 1972. (See table 2.)

Relative to their white counterparts, black women strengthened their foothold as professional workers.[4] Black women professionals, who had accounted for nearly 11 percent of all employed black women in 1972, made up 14 percent of the total in 1980, a proportion approaching that for white women.

Jobs for managers and administrators also increased during the decade. Black men and women shared more than proportionately in the gains but were still much less likely to be employed in these fields than their white counterparts. For example, in 1980, 15 percent of all white men were engaged as managers or administrators, compared with fewer than 6 percent of black men.

Employment in clerical occupations rose rapidly between 1972 and 1980. Among women—who make up four-fifths of all clerical workers—the increase was proportionately much greater for blacks than for whites. Black men also increased their participation in this field, while white men experienced a decline. There was a similar occurrence in sales, where both black men and women increased their representation, while white participation declined.

Blue-collar jobs grew at a relatively slow pace during the 1970's. Overall, the proportion of black men who were blue-collar workers was down somewhat from 1972. This stemmed from reduced participation in the relatively undesirable operative and nonfarm laborer jobs, as their representation in the skilled craft and kindred trades actually rose. By 1980, the largest proportion of black men in any single occupational group was in skilled craftwork; this has long been true for white men. Despite this improvement, there were still relatively high concentrations of black men in the less skilled job categories. For example, they were still twice as likely to be in laborer jobs as their white counterparts.

After the craft trades, service work employed more black men than any other occupation. One-sixth of all employed black men were engaged in service work (excluding private household) in 1980—not much different than in 1972. Blacks continued to be more than twice as likely to have service jobs as white men.

The most substantial movement among black women during the 1970's occurred in private household work, as their proportion fell from 16 to 7 percent. One-fourth of employed black women had jobs in other service occupations in 1980—a small decline from 1972. Only clerical work was more prevalent among black women, accounting for 29 percent of those employed. Like private household workers, farmworkers registered an employment drop between 1972 and 1980; black men left this occupation more quickly than white men.

Clearly, the movement out of the lower paying nonfarm-labor, service, and farm jobs and into mid- and

Table 2. Percent distribution of employed persons by occupation, race, and sex, 1972 and 1980

Occupation	Black men		White men		Black Women		White Women	
	1972	1980	1972	1980	1972	1980	1972	1980
Total employed	4,347	4,704	45,769	5,033	3,406	4,394	27,305	30,043
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Professional and technical	6.4	8.2	14.3	16.1	10.6	13.8	14.9	17.0
Managers and administrators	4.0	5.6	14.0	15.3	2.1	3.4	4.8	7.4
Sales	1.7	2.5	6.6	6.4	2.5	2.8	7.8	7.3
Clerical	7.6	8.4	6.8	6.2	22.7	29.3	36.2	36.0
Craft and kindred workers	14.8	17.6	21.2	21.5	.9	1.4	1.3	1.9
Operatives, except transport	17.4	15.5	12.1	10.7	14.8	13.8	12.5	9.4
Transport equipment operatives	10.3	9.9	5.7	5.4	.4	.7	.4	.7
Nonfarm laborers	17.4	13.0	6.8	6.5	.9	1.4	.9	1.2
Farm and farm managers	1.0	.4	3.4	2.6	—	—	.4	.4
Farm laborers and foremen	3.5	2.4	1.7	1.5	1.1	.5	1.5	1.3
Private household workers	.3	.1	—	—	16.4	7.4	3.0	1.9
Other service workers	15.8	16.4	7.3	7.9	27.6	25.4	16.2	16.0

upper-level jobs in the white-collar occupations and craft trades was sustained during the 1970's, although the changes were not as dramatic as those which occurred in the previous decade. But while blacks moved into higher skilled (and more highly paying) occupations in greater numbers and, correspondingly, diminished their proportions in the less desirable job groups, they still accounted for a disproportionately large share of private household workers, nonfarm laborers, and transport equipment operatives, while constituting a disproportionately small share among most white-collar jobs—clerical workers being the exception.

Specific job changes

It is important to know the specific job markets in which blacks have actually made headway relative to their white counterparts. Are blacks increasingly more likely to become physicians or accountants or are they still, as in the past, finding teaching and technicians jobs their primary source of entry into the professional occupations? If the jobs blacks hold are found in the lesser skilled and lower paying professional positions, then the conclusion that there has been significant occupational upgrading may not be justified. Detailed occupational data permit a finer analysis of the areas of the job market in which blacks are overrepresented and those in which their entry seems to have been restricted. An examination of occupational participation rates[5] during the 1970's is a useful yardstick of progress in this area.

Overall, black occupational advancement in the 1970's is not particularly impressive when the detailed occupational data are examined. In most cases, black workers were concentrated in the same jobs in which they were employed in 1972. In other words, although a higher proportion of blacks could be found among the professional and technical occupations in 1980 than in 1972, they were concentrated in jobs at the lower end of the professional pay scale, such as nursing, technical trades, and vocational and educational counseling. And even though their numbers have expanded in some of the more desirable and better paid jobs, there are few examples where black men and women have been able to significantly increase their representation in a particular job.

Black men. Despite a substantial increase in the proportion of black men in the professional and technical occupations, their proportion of all employed men in this category rose only slightly over the 1972–80 period, from 4.0 to 4.4 percent. By way of comparison, black men accounted for 8.4 percent of employed men in 1980, a small drop from the 8.6 percent in 1972. The 1980 recession undoubtedly had an impact on the employment of black men. In the previous year, 1979, black men had accounted for 8.6 percent of employment, the same as in 1972. (See table 3.)

In 1980, black males in the professional and technical occupations accounted for 8 percent or more of all men employed as health technicians, nurses, social and recreational workers, vocational and educational counselors, and personnel and labor relations workers. In every case, these were the same professions in which they were concentrated in 1972.

The proportions of black men in certain higher-status professional occupations—such as accountants, computer specialists, engineers, and lawyers—showed some increases over the period, but were still disproportionately low. The proportion employed as physicians, at 2.1 percent, did not increase at all between 1972 and 1980.

The overall black occupational participation rates for managers and administrators rose slightly—but to only 3.2 percent—with bank officials and financial managers showing a healthy increase. Nevertheless, blacks in 1980, as well as 1972, were most likely to be employed as managers of restaurants, cafeterias, and bars, and as school administrators. Black employment in school administration actually declined during the 1972–80 period, while those working as food establishment managers showed a rise.

Overall, employment growth in sales was rather sluggish during the 1970's, yet black men were able to increase their proportion of those employed from 2.4 to 3.5 percent. However, gains occurred in occupations in which blacks have traditionally been concentrated—retail salesclerks and insurance agents.

Some of the largest occupational gains among black men during the decade occurred in the clerical occupations, in particular as banktellers, bookkeepers, estimators and investigators, office machine operators, statistical clerks, and secretaries—jobs that had shown substantial growth during the 1970's. For example, the participation rate of black men who were estimators and investigators rose from 3 to 6 percent and the rate for office machine operators increased from 10 to 14 percent. Areas in which black men had been highly concentrated in 1972 (15 percent or more)—file clerks, mailhandlers, messengers and office boys, and postal clerks—showed little growth or declined by 1980, although they still accounted for a significant proportion of black male employment.

To capsulize, black men were able to realize greater participation in a substantial number of white-collar occupations over the decade. One significant exception was the better paying professional and technical jobs, in which they advanced, but not significantly. Despite some progress in the professional ranks, they were concentrated in the same occupations as they were almost a decade earlier.

Blue-collar occupations expanded much less rapidly than white-collar jobs over the decade. The occupational participation rate of black men held steady for both transport equipment and other operatives, declined among laborers, but rose in the craft trades. However, even with the rise from 6 to 7 percent, the craft trades remained the only major blue-collar category in which black men accounted for less than their proportion of overall employment.

Black men increased their share in a number of the more highly skilled job categories including electricians, painters, plumbers, metal and printing craftsmen, and excavating and grading road machine operators. However, the two largest job concentrations of black men continued to be as cement and concrete finishers and crane operators.

The overall participation of black men in operative and transport equipment operative positions held steady between 1972 and 1980, with blacks continuing to represent a disproportionately large number of employed persons in these occupations. They made up about 20 percent or more of all men employed as clothing ironers and pressers, furnacemen, laundry and drycleaning operatives, sawyers, textile operatives, busdrivers, forklift

Table 3. Employed blacks as a percent of all employed men and women in selected detailed occupations, 1972 and 1980, annual averages

Occupation	Black men		Black women	
	1972	1980	1972	1980
Total	8.6	8.4	11.0	10.6
Professional and technical	4.0	4.4	8.0	8.8
Accountants	2.1	3.6	5.2	7.4
Computer specialists	3.5	4.1	6.5	9.3
Engineers	1.4	2.2	(1)	(1)
Personnel and labor relations	6.1	7.9	12.5	10.8
Physicians, dentists, and related practioners	2.1	2.1	(1)	5.0
Nurses, dietitians, therapists	8.6	13.2	6.1	8.2
Health technologists and technicians	12.4	8.4	7.8	9.2
Lawyers and judges	1.3	3.1	(1)	7.1
Religious workers	10.0	5.7	(1)	(1)
Social and recreation workers	13.8	16.4	17.4	17.4
Teachers, college and university	3.6	3.3	5.4	5.3
Teachers, except college and university	7.0	5.5	9.0	10.2
Engineering and science technicians	3.5	5.6	(1)	6.7
Vocational and educational counselors	8.0	15.2	13.4	17.8
Writers, artists, and entertainers	4.2	4.1	2.8	3.6
Managers and administrators	2.6	3.2	5.0	5.2
Bank officials and financial managers	(1)	2.6	(1)	4.6
Restaurant, cafeteria, and bar managers	4.8	5.7	10.6	7.9
School administrators, elementary and secondary	6.7	6.0	6.9	12.2
Sales	2.4	3.5	3.8	4.4
Insurance agents, brokers, and underwriters	2.3	4.3	7.8	8.2
Sales clerks, retail trade	4.2	7.0	4.1	5.0
Clerical	9.5	10.9	7.2	8.9
Bank tellers	(1)	10.3	4.0	5.9
Bookkeepers	3.7	6.7	2.4	3.4
Cashiers	7.5	8.7	6.5	8.6
Counter clerks, except food	4.7	5.4	6.2	8.6
Estimators and investigators	2.5	6.0	7.3	11.7
File clerks	22.0	25.6	16.0	18.2
Library attendants and assistants	(1)	(1)	8.7	8.5
Mail carriers, post office	13.1	11.6	(1)	(1)
Mail handlers, except post office	25.0	22.1	12.5	17.9
Messengers and office helpers	16.4	16.9	(1)	(1)
Office machine operators	9.8	14.0	11.9	15.1
Postal clerks	16.0	14.8	26.7	32.7
Receptionists	(1)	(1)	6.4	6.4
Secretaries	(1)	12.1	4.4	5.5
Shipping and receiving clerks	13.0	13.1	13.4	8.3
Statistical clerks	8.0	11.8	7.1	11.3
Stock clerks and storekeepers	12.2	10.5	10.3	11.0
Teachers aides	(1)	(1)	21.2	17.3
Telephone operators	(1)	(1)	(1)	14.8
Typists	(1)	(1)	10.9	13.2
Craft and kindred workers	6.2	7.0	8.0	8.1
Carpenters	5.1	4.4	(1)	(1)
Brickmasons and stonemasons	13.6	14.6	(1)	(1)
Bulldozer operators	13.6	11.7	(1)	(1)
Cement and concrete finishers	30.3	31.0	(1)	(1)
Electricians	2.8	4.1	(1)	(1)
Excavating, grading, and road machinery operators	6.6	8.2	(1)	(1)
Painters, construction and maintenance	9.3	10.5	(1)	(1)
Plumbers and pipe fitters	5.1	8.5	(1)	(1)
Machinists and jobsetters	5.6	6.3	(1)	(1)
Metal craftsmen, except mechanical, machinery, and jobsetters	4.9	6.2	(1)	(1)
Mechanics, automotive	7.4	7.7	(1)	(1)
Mechanics, except automotive	4.5	6.1	(1)	8.9
Printing craftsmen	4.5	7.3	8.5	8.6
Cranesmen, derrickmen, hoistmen	15.5	16.3	(1)	(1)
Operatives, except transport	11.9	11.7	12.7	14.6
Assemblers	13.3	11.2	11.8	11.9
Checkers, examiners, and inspectors (manufacturing)	7.6	9.6	9.3	10.8
Clothing ironers and pressers	28.9	(1)	38.4	40.4
Furnacemen, smeltermen, and pourers	23.9	25.4	(1)	(1)
Garage workers and gas station attendants	7.3	7.9	(1)	(1)
Laundry and drycleaning operators	24.0	21.9	28.7	23.3
Meatcutters and butchers	9.4	8.5	19.4	18.6
Packers and wrappers	12.6	20.4	13.4	15.4
Painters, manufacturing articles	14.5	10.7	(1)	(1)
Precision machine operators	6.9	6.7	10.3	18.2
Punch and stamping press	10.5	11.0	11.6	9.1
Sawyers	19.1	17.4	(1)	(1)
Sewers and stitchers	(1)	14.3	11.3	13.8
Textile operatives	18.9	22.1	12.4	20.7
Welders and flamecutters	9.4	9.8	(1)	(1)
Transport equipment operatives	14.5	14.7	9.0	11.2
Busdrivers	21.7	24.0	7.0	13.1
Deliverypersons and routepersons	10.0	9.2	(1)	5.1
Forklift and tow motor operators	21.7	18.8	(1)	(1)
Taxicab drivers and chauffeurs	22.5	24.0	(1)	(1)
Truck drivers	13.9	13.5	(1)	7.3
Laborers, except farm	19.2	15.5	12.0	12.2
Construction laborers	24.7	15.4	(1)	(1)
Freight and material handlers	21.7	17.5	17.8	19.7
Garbage collectors	33.3	32.8	(1)	(1)
Gardeners and groundskeepers	16.5	14.1	(1)	(1)
Stockhandlers	8.8	10.4	10.7	10.0
Vehicle washers and equipment cleaners	21.9	19.4	(1)	(1)
Farm and farm managers	2.6	1.6	3.0	(1)
Farmers (owners and tenants)	2.6	1.6	3.0	(1)
Farm laborers and foremen	16.1	12.7	8.1	7.0
Farm laborers, wage workers	19.3	14.3	23.5	15.7
Service workers, except private household	16.8	15.7	17.3	15.9
Cleaning service workers	25.4	22.8	35.3	30.2
Food service workers	12.8	11.5	11.2	10.1
Health service workers	24.5	32.1	23.7	21.0
Personal service workers	13.9	15.0	11.2	12.6
Protective service workers	9.2	9.8	16.9	17.4
Private household workers	(1)	(1)	39.8	31.9
Child care	(1)	(1)	8.0	7.0
Maids and servants	(1)	(1)	71.1	52.5

[1] Data not shown where numerator is less than 4,000 or denominator is less than 35,000

operatives, and taxicab drivers. For the most part, participation of black men in these occupations increased or was about the same between 1972 and 1980, because white men were moving out of these jobs.

In the nonfarm laborer and service worker occupations—which also have relatively large numbers of black men—there were declines in the proportion engaged in these jobs. The number of laborers dropped substantially during the 1970's, but the employment of black men in these occupations fell even more rapidly.

Black women. Despite the fact that they made up a smaller percentage of employed women in 1980 than in 1972—because of the huge influx of white women into the labor force—black women were able to increase their proportions in most of the professional and technical job categories. (See table 3.) And a definite occupational shift occurred over the period. In 1972, black women had participation rates of 12 percent or more in three occupations—social and recreation work, vocational and educational counseling, and personnel and labor relations work. By 1980, although they were still highly visible in these three areas, their concentration in other professional occupations had broadened considerably. The most notable change occurred in the fast-growing computer field, where black women increased their participation by 2.8 percentage points to 9.3 percent. Other noteworthy gains were among accountants, nurses, dieticians and therapists, engineering and science technicians, and vocational and educational counselors. Still, in contrast to developments in the 1960's, growth in the professional and technical occupations among black women continued to be relatively slow.

Limited gains among black women were realized in most managerial and administrative positions and sales occupations. The rate of employment participation among school administrators, insurance agents, and bank officials increased, while there was a declining rate among restaurant managers.

Black women made some progress moving out of salesclerk positions, although their participation rate actually increased during the 1970's as white women left this occupation in even greater numbers. In 1972, 75 percent of all black women in sales were retail clerks, but by 1980, this proportion had fallen to 68 percent. Black women accounted for about 5 percent of employed women in this field.

Employment gains of black women in the fast growing clerical field were widespread as their overall participation rate moved from 7 to 9 percent over the 8-year period—still somewhat below the percentage of all employed women who were black. Gains were strong for black women as estimators and investigators, mailhandlers, postal clerks, statistical clerks, and telephone operators. The largest numbers of black women were employed as cashiers, typists, and secretaries.

Although blue-collar occupations are generally male dominated, black women made a number of inroads into some job fields. It should be noted that the occupational participation rates of black women in the better paying craft trades are difficult to measure, as the actual numbers engaged in these jobs were very low. While some increases in specific crafts were registered, the overall proportion of black women in the craft trades remained about the same over the period, at 8.1 percent.

The largest concentration of black women in blue-collar jobs was in the operative category, a group in which black women have been traditionally overrepresented relative to their employment total. In 1980, black women had participation rates of 18 percent or more in six occupational categories; this compares with three such categories in 1972. Among transport equipment operatives, black women advanced rather strongly as busdrivers, reaching 13 percent in 1980. They also registered strong growth in two occupations in which they had shown little representation in the past—delivery persons and truckdrivers.

The participation rate of black women in occupations at the lower end of the earnings ladder was unchanged for laborers and declined among household workers during the 1970's. Furthermore, the drop in the rate among black women engaged in private household services, from 40 to 32 percent, is particularly important, given the large concentration of women in this occupation and the fact that black women are moving out at a faster rate than white women.

Residential location

To better understand the growth of blacks in certain occupations and their decline in others, it is helpful to examine their residential location. In 1980, approximately 55 percent of all blacks lived in central cities, with the other 45 percent divided almost equally between suburban and nonmetropolitan areas. In contrast, only 24 percent of all whites lived in central cities, with the bulk residing in suburban rings (42 percent). This concentration of blacks in the central city becomes particularly important when one realizes that it is the suburban rather than city blacks who were the recipients of most of the occupational upgrading during the 1970's.

Overall, the occupational distribution of black men and women residing in the suburbs was similar to that of their counterparts living in central cities in 1973.[6] However, by 1980, this was no longer the case. (See table 4.) While virtually all occupational changes among residents of both cities and suburbs were in the same direction, blacks in the suburbs fared better than those in the central cities or nonmetropolitan areas during the 1970's. This is evident from the rather impressive in-

Table 4. Occupational distribution of employed blacks, by sex and area of residence, 1973 and 1980
[In percent]

Occupation	Central cities				Suburbs				Nonmetropolitan areas			
	Men		Women		Men		Women		Men		Women	
	1973	1980	1973	1980	1973	1980	1973	1980	1973	1980	1973	1980
Total employed (in thousands)	2,899	2,915	2,373	2,835	1,061	1,499	801	1,390	1,178	1,236	831	1,037
White-collar workers	26.2	30.2	46.2	54.5	27.8	36.2	48.6	58.1	10.5	14.7	23.0	31.4
Professional and technical	8.5	9.8	12.2	15.0	12.0	16.2	14.7	17.6	4.2	6.3	8.8	10.8
Managers and administrators	5.6	6.7	2.7	3.6	6.8	8.7	3.0	4.5	2.8	4.1	2.7	2.7
Sales	2.5	3.1	2.5	3.0	2.2	3.1	2.7	4.0	1.1	1.2	2.1	2.1
Clerical	9.6	10.7	28.8	32.8	7.2	8.1	28.1	32.1	2.5	3.1	9.4	15.9
Blue-collar workers	56.6	51.3	16.6	15.1	53.4	47.3	17.0	15.0	64.0	62.5	28.1	28.7
Craft and kindred	15.5	16.9	1.1	1.5	15.1	17.2	1.2	1.2	13.5	17.5	1.1	1.5
Operatives, except transport	17.3	14.3	13.9	11.6	15.8	12.8	14.2	11.7	24.2	18.5	25.3	24.9
Transport equipment operatives	9.7	9.3	.4	.6	8.5	7.7	.7	.7	8.5	9.1	.4	.7
Nonfarm laborers	14.1	10.8	1.1	1.3	14.0	9.6	1.0	1.4	17.8	17.4	1.3	1.6
Service workers	17.0	18.5	37.2	30.4	16.3	13.7	34.2	26.3	10.9	12.9	44.0	37.9
Private household	.2	—	11.0	5.1	—	.1	11.2	5.2	.1	.2	28.1	11.6
Farm workers	—	—	—	—	2.5	2.8	1.1	.7	14.4	10.0	4.9	2.1
Farmers and managers	—	—	—	—	.8	.3	.2	—	4.2	2.5	.4	.3
Farm laborers	—	—	—	—	1.7	2.5	.9	.7	10.2	7.6	4.5	1.7

NOTE: Data include persons of black and other minority races.

creases in the proportion holding white-collar jobs, particularly professional and technical and managerial positions. For example, black suburban men had a 91-percent rise in employment in the professional fields, compared with a 16-percent increase among city residents. Likewise, black suburban women had a 158-percent increase in the managerial ranks, compared with 63 percent among their city counterparts. (These increases may be partially explained by the migration of successful white-collar blacks from the cities to the suburbs.)

In 1973, black workers in blue-collar occupations were predominant in central cities and suburban areas. However, by 1980, while both areas had made the shift to a predominance of white-collar jobs, the changes were more pervasive in the suburbs. Cities and suburbs alike experienced a drop in the percentage of men holding semi-skilled and unskilled blue-collar jobs. Metropolitan women also contributed to this growth in white-collar jobs, as they left the service occupations in great numbers.

Nonmetropolitan area blacks also moved into white-collar jobs during this period, though not to as great an extent as blacks living in the cities and suburbs. The proportion of blacks in blue-collar jobs remained unchanged between 1973 and 1980, while blacks moved out of service and farm jobs. In general, the occupational distribution of nonmetropolitan workers is very much different from that of their metropolitan counterparts in that a much larger proportion are engaged in blue-collar work and comparatively few are in white-collar occupations.

That blacks are moving into the professional, clerical and craft occupations is readily apparent, but nowhere more so than for those who live in the suburbs.[7] And that blacks are still disproportionately concentrated in the less skilled and service jobs is also evident, particularly for those residing in the city and nonmetropolitan areas. In part, central city, suburban, and nonmetropolitan employment differences reflect the strong growth of white-collar occupations in the metropolitan areas and the predominance of blue-collar jobs available in the nonmetropolitan areas. Black occupational advancement is somewhat related to residential location, in that most workers have jobs in the geographic area in which they live.[8] However, individual levels of educational attainment, skill, and ability are the predominant factors in determining one's occupational classification.

Earnings

Because the white-collar professions are considered among the most powerful and prestigious occupations in American society, it is easy to assume that the growing proportions of workers in these jobs are a sign of achievement. While white-collar jobs are often associated with higher pay status and most blue-collar and service jobs are equated with lower paying positions, movement of workers from blue-collar to white-collar jobs should not be construed as an improvement in one's relative economic position. Earnings differentials by occupation are more complex than the relationship noted above. There is a broad range of earnings within each major occupational category. (See chart 1.) In a number of instances, blue-collar trades have higher earnings than white-collar jobs, particularly those in the skilled craft occupations.

Median weekly earnings for all workers were $265 in 1980. Managers and administrators had the highest weekly earnings, $380, followed by professional and technical workers, $341; craft and kindred workers, $328; transport equipment operatives, $286; and sales workers, $279. Those occupations with earnings below the overall median were farmers and farm managers, $243; operatives, $225; nonfarm laborers, $220; clerical and kindred workers, $215; service workers, except private household, $184; farm laborers and foremen, $167; and private household workers, $94. Exhibit 1 shows specific occupations which are above or below the median level for four key occupational groups. The highest-paid professional and technical jobs—engineers, lawyers, physicians, and scientists—are all categories in which blacks were underrepresented in both 1972 and 1980. By contrast, health technologists, social and recreational workers, nurses, and teachers were among the lowest-paid professional positions and the ones in which blacks continued to be concentrated.

Black workers in management and sales professions were concentrated in jobs that paid below the median for the overall occupation. Only in the clerical field were black workers well dispersed and advancing in some of the better paying positions, such as postal clerks, stock clerks, and shipping and receiving clerks.

Blacks in the craft trades were able to advance in a number of the higher paid positions, including plumbers and electricians, though they were still underrepresented in the latter. In contrast to the professional and managerial fields, blacks in craft jobs were more widely dispersed and not relegated to the lower paid positions.

Between 1973[9] and 1980, black full-time workers increased their earnings by 68 percent, compared with 65 percent for whites. Blacks posted larger gains than whites in the blue-collar occupations, while white workers outpaced blacks in white-collar jobs. Even though blacks were entering the white-collar professions in increasing numbers, they were generally concentrated in the lower paying jobs of those particular occupations. In addition, their pay increases were smaller relative to those of whites in the white-collar occupations. Consequently, the earnings of black workers relative to whites in white-collar jobs, which had averaged 91 percent in 1973, dropped to 86 percent in 1980. However, blacks were able to advance in occupational standing in the blue-collar professions, as they increased their earnings relative to whites in a number of the higher paying jobs. (See table 5.) For example, in 1973, black transport equipment operatives made 73 percent of the earnings of their white counterparts; by 1980, this percentage had risen to 85 percent—evidence of their penetration into some of the better paid positions.

Differences in earnings by race were more discernable among men than among women. In 1980, black males made about 80 percent of the earnings of white men in both the white-collar and blue-collar occupations. How-

Chart 1. Percent distribution of full-time weekly earnings by occupation, 1980, annual average

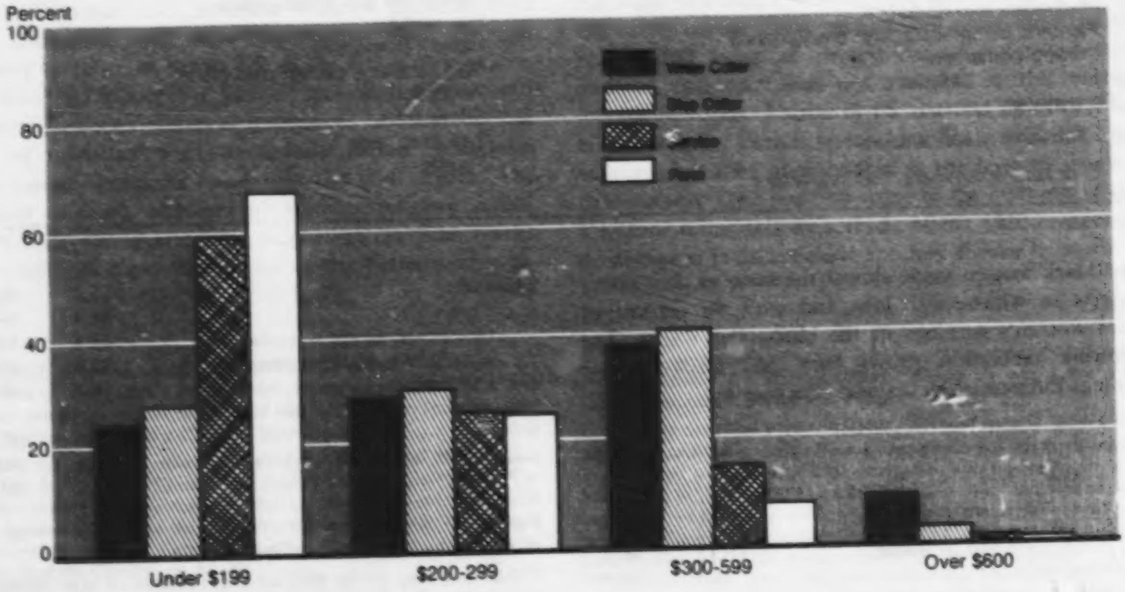

Exhibit 1. Occupations above and below the median weekly earnings of full-time wage and salary workers in selected occupational groups, 1980

Professional and technical workers

Above median

- Accountants
- Computer specialists
- Engineers
- Lawyers and judges
- Life and physical scientists
- Personnel and labor relations workers
- Physicians, dentists, and related practitioners
- Vocational and educational counselors

Below median

- Engineering and science technicians
- Health technologists and technicians
- Nurses, dietitians, and therapists
- Social and recreation workers
- Teachers, except college and university

Craft and kindred workers

Above median

- Brickmasons and stonemasons
- Cement and concrete finishers
- Cranemen, hoistmen, and derrickmen
- Electricians
- Machinists and jobsetters
- Plumbers and pipefitters

Below median

- Bulldozer operators
- Carpenters
- Excavating, grading, and road machine operators
- Mechanics and repairers
- Painters, construction and maintenance
- Printing craftsmen

Operatives

Above median

- Checkers, examiners, and inspectors
- Furnacemen, smeltermen, and pourers
- Meatcutters and butchers
- Painters, manufactured articles
- Precision machine operators
- Punch and stamping press operators
- Welders and flamecutters

Below median

- Assemblers
- Clothing ironers and pressers
- Garage workers and gas station attendants
- Laundry and dry cleaning operators
- Packers and wrappers
- Sawyers
- Sewers and stitchers
- Textile operatives

Clerical and kindred workers

Above median

- Mail carriers, post office
- Office machine operators
- Postal clerks
- Shipping and receiving clerks
- Statistical clerks
- Stock clerks and storekeepers
- Telephone operators

Below median

- Bank tellers
- Bookkeepers
- Cashiers
- Counter clerks
- Estimators and investigators
- File clerks
- Library attendants
- Mail handlers, except post office
- Receptionists
- Secretaries
- Teachers' aids
- Typists

ever, black women made almost the same as their counterparts in white-collar jobs and over 90 percent of white women's earnings in the blue-collar trades. The following tabulation shows the 1980 black-to-white earnings differential by sex and occupation:

	Male	*Female*
Total	75.1	92.2
White-collar	79.2	98.7
Professional and technical	85.5	97.6
Managerial	76.7	105.9
Sales	69.2	99.4
Clerical	80.7	98.5
Blue-collar	81.4	93.9
Craft	86.9	99.5
Operatives, except transport	86.8	94.3
Transport equipment operatives	82.6	97.2
Laborers	86.2	100.6
Service	86.6	102.7
Private household workers	73.5	140.7
Other	86.6	103.9
Farm	78.3	81.4

Black women, while still at the bottom of the earnings hierarchy, have narrowed the earnings gap between themselves and white women in most occupational cate-

Table 5. Earnings data by race and occupation for May 1973 and second quarter 1980

Occupation	Percent increase in earnings, 1973–1980		Black/white earnings ratio	
	Black	White	1973	1980
Total	68.2	65.4	79.6	81.0
White-collar workers	53.2	63.6	91.3	85.5
Professional and technical	58.3	57.5	89.7	90.2
Managers and administrators	42.4	58.2	87.9	79.1
Sales	76.9	64.0	71.3	77.0
Clerical	47.5	63.6	107.8	97.2
Blue-collar workers	77.2	69.9	77.9	81.2
Craft and kindred workers	61.7	66.5	84.8	82.3
Operatives, except transport	77.4	70.4	85.2	88.7
Transport equipment operatives	89.9	63.6	73.3	85.1
Nonfarm laborers	58.0	56.6	83.2	83.9
Service workers	74.0	65.1	88.1	92.8
Private household workers	123.5	157.6	154.5	133.1
Other service workers	67.0	64.3	92.0	93.3
Farmworkers	73.7	67.3	75.2	78.1

NOTE: May 1973 data are for black and other races; second quarter 1980 data are for blacks only.

gories, much more so than black men have succeeded in doing with respect to white men. This is because women are more concentrated in lesser skilled, lower paying jobs which traditionally have been easier for blacks to enter.[10]

Overview

Black occupational status improved somewhat during the 1970's, as proportionately more blacks moved into white-collar jobs, although few penetrated the higher-salaried professional and managerial positions. In fact, the black-to-white earnings differential was unchanged for professional and technical workers between 1973 and 1980, and, even more importantly, black earnings relative to those of whites fell in the fast growing clerical field. Black mobility in the blue-collar, service, and farm occupations was more impressive, as blacks moved out of unskilled work—especially private household and laborer positions—and into the craft trades. The growth of black employment in the expanding skilled craft area was particularly important, in that blacks were able to move into some of the better-paid positions, and, for the most part, were able to increase their earnings relative to their white counterparts in the blue-collar occupations.

Overall, shifts by blacks into the higher-salaried occupations were rather limited; this was most apparent for those who resided in the central city areas. The majority of blacks lived in central cities, which have high concentrations of office and other business district-type activities. Yet, by 1980, central city blacks had made little progress in increasing their proportion in white-collar occupations. Most of the occupational upgrading occurred among the smaller number of blacks who resided in suburban areas. Furthermore, the progress that did occur among blacks living in the city was mostly accounted for by women, whereas, in the suburbs, black men and women shared equally in the gains. This indicates that black women in both areas competed successfully for jobs in those occupations in which women are heavily recruited. Clearly, black workers, especially black men and city dwellers, need to gain more access to the higher-skilled, better-paying jobs in the rapidly growing white-collar fields, if their earnings are to increase. □

NOTE: The statistics are based on the 1970 Decennial Census population counts, adjusted for the aging of the population, deaths, and net migration. The Bureau of Labor Statistics has subsequently converted Current Population Survey estimates to reflect the 1980 census, which enumerated 4.7 million more people than had been estimated in updating the 1970 figure. Because this difference was so much larger than previous censuses, historical CPS data series are also being revised, including broad occupational employment categories. However, the full range of revised data for detailed occupational categories was not available at this writing; indeed, revisions of some of the detailed series may not be undertaken. Even if revised data were available, their validity might be questionable at the level of detail in this analysis. (The size and scope of the revisions of major labor force data as a result of the 1980 census will be discussed in an article in the July *Review*.)

FOOTNOTES

[1] Unless otherwise stated, the term "black" in this article refers exclusively to the "black only" population and not to the "black and other" category which is made up of blacks, American Indians, Alaskan Natives, and Asian and Pacific Islanders.

[2] See Sylvia Small, *Black Americans, A Decade of Occupational Change*, Bulletin 1760 (Bureau of Labor Statistics, revised 1972). For a short history of occupational change among blacks, see "The Social and Economic Status of the Black Population in the U.S.: An Historical View, 1790–1978," *Current Population Reports*, Series P-23, No. 80 (Bureau of the Census), pp. 61–63.

[3] The year 1972 was chosen for comparison with 1980, rather than 1970, because occupational data before that time are not strictly comparable with data for later years due to classification changes.

[4] For a recent analysis of the employment situation of black women, see Phyllis A. Wallace, *Black Women in the Labor Force* (Cambridge, Mass., MIT Press, 1980).

[5] For the purposes of this analysis, an occupational participation rate is defined as the ratio of black men employed in a given occupational group to all men in that occupation and black women to all women. It is appropriate to examine data for men and women separately, as occupational differences between the sexes are so pronounced. Though this statistic is not unique, the term "occupational participation rate" was made popular by Stuart Garfinckle back in 1974 in his article, "Occupations of women and black workers, 1962–1974," *Monthly Labor Review*, Nov. 1975, pp. 25–35.

[6] Data by area of residence are not available for 1972. Also, the

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term "blacks" in this section refers to persons classified as blacks and other minorities, as area of residence data by occupation are not presently available for the "black only" category.

[7] For a detailed account on the growth of white-collar jobs by area and how it relates to black employment, see Brian J. O'Connell, *Blacks in White-Collar Jobs* (New Jersey, Allanheld, Osmum and Co., pub., 1979). Also see Thomas M. Stanback, Jr. and Richard Knight, *Suburbanization and the City* (Cambridge, Mass., Ballinger Publishing Co., 1974).

[8] See Diane N. Westcott, "Employment and commuting patterns: a residential analysis," *Monthly Labor Review*, July 1979, pp. 3–9.

[9] Earnings data used in this article are collected through the Current Population Survey. For purposes of comparability, it was necessary to compare May 1973 data with that for the second quarter 1980, as earnings data were not available on an annual average basis prior to 1979. Also, data for black and other races were the only race data available in 1973; by 1980, however, earnings data were tabulated for blacks only, excluding other minorities. Hence, the data are not strictly comparable but do provide very close estimations of earnings changes during this period for blacks.

[10] The earnings gains of black women have been attributed to a reduction in racial discrimination among the female sex. For an explanation of these and other findings on black male/female earnings, see Ronald N. Oaxaca, "The Persistence of Male-Female Earnings Differentials," and others in F. Thomas Juster, ed., *The Distribution of Economic Well-Being* (Cambridge, Mass., Ballinger Publishing Co., 1977).

Dividends for two

Under the social security system of Old-Age, Survivors, and Disability Insurance the two-worker family "receives more insurance protection for its 'investment' than does the one-worker family with an equal income. If one worker in such a family retires before the other, then benefits will be paid to that worker. On the other hand, in the one-worker family, no benefits are payable to the nonworker unless the worker retires. Also, child survivor benefits are payable in the event of the death of either spouse in a two-worker family, but only on the death of one spouse (the worker) in the one-worker family. Further, prior to retirement, both spouses in the two-worker family have disability insurance, whereas in the one-worker family only the working spouse does."

—ROBERT J. MYERS
"Incremental Change in Social Security Needed to Result
in Equal and Fair Treatment of Men and Women,"
in Richard Burkhauser and Karen Holden, eds.,
The Changing Roles of Women and Men in American Society (Proceedings of
a conference sponsored by the Institute for Research on Poverty and the
Women's Studies Research Center, University of Wisconsin, held April 11–12,
1980) (New York, Academic Press, 1982), p. 239.

Labor Department's first program to assist black workers

The philosophy of equal employment opportunity began with the Department's Division of Negro Economics, created to mobilize black workers for the war effort; however, the project was ahead of its time, and efforts to make it permanent were not successful

HENRY P. GUZDA

Sixty years ago, the Division of Negro Economics, one of the great, yet virtually ignored experiments in the history of the Department of Labor, ceased operation. Long before equal employment opportunity became a priority, this division promoted the concepts of that philosophy. The largest demographic shift of blacks in this Nation occurred between 1915 and 1920, and the division assisted many of these migrants in obtaining employment and in finding suitable housing, advised them on business and financial matters, encouraged racial harmony in the workplace, and even devoted attention to the issues of female workers.

Born amidst the feverish demand for workers during the first world war, the Division of Negro Economics was dismantled as part of an alleged return to prewar "normalcy." But, prejudice played a significant role in the division's demise. Despite its generally conservative approach to racial issues, the division made enemies during a period which historians agree was not conducive for promoting black aspirations. Subsequently, officials of the Labor Department did not accomplish all they set out to do. They did, however, plant the seed, and although slow in developing, the dreams of the 1920's finally started to bloom in the 1960's and 1970's. A pioneer in the civil rights movement succinctly evaluated this noble experiment stating: "This division, though handicapped by the turmoil of transition general in the federal government and by the past Congress, has made an excellent beginning [in fostering economic and social justice]."[1]

The Department of Labor's novel and progressive program to assist black Americans, juxtaposed against that of most other cabinet-level agencies in the administration of Woodrow Wilson, was the result of the enlightened leadership of Secretary of Labor William B. Wilson and his Assistant Secretary, Louis Post. Post, in particular, had a great interest in the civil rights movement as a cofounder of the National Negro Conference of 1909 (the forerunner of the National Association for the Advancement of Colored People—NAACP). An admirer commented on Post's devotion to justice stating, "He dared in a trying time, to defy the forces of madness, hatred and greed."[2]

South to North exodus

Beginning in 1915, blacks began moving from the South to the industrialized North. When the First World War erupted, in 1914, in Europe, cutting off the flow of immigration to the United States, industrialists looked for a cheap, preferably nonunion, source of labor to replace the Hungarians, Poles, Italians, Czechs, and other foreign nationals who, heretofore, had represented the bulk of the unskilled work force. Blacks, seeking to escape the economic poverty and repression of the South, answered the call.

The extent and composition of the migration fostered concern among varied interests. Southern employers, especially farmers, feared that the depletion of their tradi-

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tional labor supply would imperil their economy. Northern trade unionists felt that the additional number of workers in the labor market would play into the hands of those employers who wanted to destroy organized labor. J. H. Walker, president of the Chicago Federation of Labor, for example, claimed that certain employers in Illinois financed agents to recruit black workers, transporting them free of charge to the North to work for submarginal wages and to act as a reserve corps of strikebreakers.[3]

To assess the migration problem, the Labor Department contracted with Dr. James Dillard, a leading civil rights leader of the period, to conduct a study. Dillard found that blacks did not saturate the northern labor force. He also reported that as the southern economy changed from labor-intensive cotton crops to mixed farming with fewer demands, blacks left the South to take advantage of economic opportunities in the North as well as to escape repression.

A few weeks after the report's release, Lathrop Brown, special assistant to Interior Secretary Franklin Lane, addressed the migration issue. He brashly claimed that the stringent prohibition laws prevalent in the South, and the lack thereof in the North, was the reason behind black migration. Assistant Secretary Louis Post complained to Interior Secretary Lane that Brown's specious remarks would only serve to embarrass the Administration, that Labor Department studies proved that the inducement of higher wages, not prohibition, was the cause for the migration.[4]

Calls for black adviser answered

Incidents such as these demonstrated to advocates of social justice that they had friends in the Department of Labor. As a result, many concerns inquired about the possibility of a black labor adviser in the Department to deal with the problems of black wage earners. Even private citizens saw the Labor Department, or its function, as an appropriate guide rail to assist black economic advancement. As early as 1913, Thomas Swann, a private citizen, suggested to President Wilson that he establish an advisory body of blacks to help the wage earning members of their race. In 1917, a New York City minister, Richard Bolden, requested that the President appoint a black man or woman to represent the labor interests of black Americans.[5]

Not until America's entry into the world war, in 1917, however, did either Secretary Wilson or Assistant Secretary Post think it opportunistic to appoint a black adviser. Racial issues were "delicate and difficult," and neither official wanted to embroil the young Department—created in 1913—in a major controversy. But, because the Department was responsible for allocation of the Nation's labor force for the war effort, the two officials thought it more than just to attend to the labor concerns of approximately 12 percent of America's working population. As a result, Wilson, Post, and the representatives of seven major civil rights organizations, including the NAACP and National Urban League, worked out a basic agreement to establish a "Division of Negro Economics" in the Department of Labor. The purpose of this division was to mobilize the black work force in the United States, and also to work for the general advancement of black wage earners.[6]

While the chief of the Division of Negro Economics and a small staff would be part of the secretary's office, the majority of personnel, including 15 state representatives and 134 examiners, stenographers, and secretaries, would be incorporated within the existing framework of the U.S. Employment Service. Assistant Secretary Post and his superior feared that the creation of an independent black division would cause criticism from some blacks who would view it as a "jim crow bureau," and from segregationists who would oppose any black-oriented program encouraging interracial harmony. The arrangement worked to the division's advantage, because it could make use of the already established employment procurement functions and facilities of the Employment Service.[7]

The infrastructure of the division included integrated local advisory committees. These committees, composed of volunteer white and black community members, monitored social, cultural, and employment conditions at the job sites. The committees worked under the guidance of State representatives from the Division of Negro Economics to ameliorate racial problems. These advisory committees completed a linkage of Federal-State-local cooperation, and the flexibility of this network achieved some remarkable results.

Before the program could be implemented, Secretary Wilson and Assistant Secretary Post faced the task of picking a division chief. Many candidates offered their services or had someone promote them, but Giles Jackson ran the most aggressive campaign for the job. A black politician from Richmond, Va., he sought and gained endorsements from both of Virginia's U.S. Senators, the American Federation of Labor, and the White House. Wilson almost offered him the job when Louis Post interceded.[8]

Jackson was *persona non grata* with most of the black community, and they let Assistant Secretary Post know their displeasure. *The Washington Bee*, a black newspaper, sent an editorial to Post saying that Jackson was not fit to be a dog catcher, let alone the representative for the black working class. W.E.B. Dubois begged Post to reconsider, calling Jackson "one of the most disreputable characters the Negro race has produced." Even Post himself had doubts about Jackson's character and competency.[9]

On May 1, 1918, Secretary Wilson chose another candidate, George E. Haynes, professor of Sociology and Economics at Fisk University in Tennessee, to head the Division of Negro Economics. A recognized scholar and authority on the black migration phenomenon, a cofounder of the National Urban League, and the first black American to receive a Ph.D. from Columbia University, Haynes was most qualified.[10] He announced that although his primary responsibility was to mobilize the black work force for the war effort, achieving cooperation of the races and opening the doors of opportunity to blacks was equally important.

State programs established

Although planned and programmed at the Federal level, the Division of Negro Economics was basically State and local oriented. It was on that level that interaction between the races was most intimate. Haynes wanted to make sure that the transmission of the Labor Department's program to the people it intended to help was clear and direct. Therefore, he personally assisted in founding the State branches.

Haynes bearded the lion in its own den, establishing the first State division in the South, where opposition to race-related programs was the strongest. To stir up an aura of good feelings, a massive public relations rally was held to "kick-off" each State's program. At the first rally in Raleigh, N.C., Haynes told the large audience, speckled with white and black faces, that blacks wanted to help win the war and share the bounties of the Nation.

With flourishes of rhetoric that paled some of the propaganda statements of George Creel's Division of Information (an agency designed to sell America's involvement in World War I), Haynes' related acts of patriotism performed by blacks, stating they were among the first American soldiers to sacrifice their lives in the trenches of France. He added that on the homefront blacks had accomplished different feats of patriotism, citing as an example the black riveter in a Baltimore, Md., shipyard who drove a record 4,875 studs in 1 day into a vessel under construction. Many black Americans, claimed Haynes, demonstrated their patriotism every day and in doing so destroyed many of the prevalent myths about racial inferiorities.

The rally was a success. Immediately afterwards, the first local advisory committee was formed. It consisted of 30 influential residents, white and black, including the Governor of North Carolina. In 6 months, the spirit of good will generated at the rally helped in the establishment of more than 25 advisory committees throughout the State. The best indication of the rally's influence was in a letter to Assistant Secretary Post from North Carolina's Governor Bickett who called it, "the most helpful and patriotic conference I attended."[11]

Following close on the heels of the North Carolina experiment, Haynes proceeded to establish offices in other States. In Virginia, the second State targeted by Haynes, a different approach to stimulation of good working conditions took place. Virginia's Division of Negro Economics representative, T.C. Erwin, assisted the U.S. Housing Bureau in planning and building 254 modern residential units for blacks near Richmond. Erwin, like Haynes, believed that better living conditions would make healthy, contented, and stable workers. Erwin also assisted in organizing a cooperative savings and loan institution to pay off the mortgages on the units, and a governing council to impose rules and regulations on the community.

Racial issues were not always so pleasantly natured. In Norfolk, the division ameliorated a potentially riotous situation. This busy port city suffered from a shortage of stevedores to load and unload cargo from merchant ships. The local Chamber of Commerce wanted the city council to pass "work or fight laws," mandating that able bodied men work at war-related jobs or face conscription into the Armed Forces. Blacks viewed the laws as alternative forms of slavery, directed at them disproportionately when compared to whites. Erwin persuaded the city council to delay action; he held a job fair and in 2 days recruited more workers than there were jobs to fill. These newly hired blacks received wages equal to their white counterparts, which would not have been the case under work or fight laws, and the praise of the local press for demonstrating their patriotism.[12]

As the division moved deeper into the South, the problems facing it became more difficult and serious. For example, in Mobile, Ala., some employers were exploiting black workers to the degree of slavery, and neither the local advisory committee nor the State's Division of Negro Economics representative could get them to stop. Haynes tried to meet with the local Chamber of Commerce, hoping to persuade the business group to pressure their colleagues to act humanely, but they refused to see him. This brought a visit from Assistant Secretary Post who told the chamber that many of the employers in question held government contracts and could forfeit them if the problems were not remedied. A high ranking official of Tuskeegee University in Alabama wrote Haynes: "Mr. Post's visit here did a lot of good in the matter of putting a stop to some of the injustices practiced against colored labor. I do not mean to state that these [employers]. . . have come over to the Lord's side . . . . but they have desisted from some of the more flagrant abuses practiced."[13]

In the North, the Division also demonstrated a versatility. The basic format of organizational activities, a rally, the founding of a State branch, and the founding of local advisory committees, was the same, but with a few twists. Residential restrictions against blacks created a severe housing shortage, and some employers, not with altruism in mind, operated boardinghouses to keep black workers near the job sites. Local advisory committees monitored the conditions of these houses and reported violations to the State's Division of Negro Economics representative. At times, employers cooperated and corrected the situation; too often it took threats of debarment from government contracts.[14]

Throughout the North, the division made great strides towards benefiting black wage earners, while stimulating stability for the production of war materiel. In Chicago, the division, often working out of the offices of the National Urban League or the Young Men's and Women's Christian Associations, provided employment offices that informed blacks of job opportunities or residential openings. The local representative encouraged strong community roots by helping blacks invest in cooperative stores and savings institutions. In New York, State representative Jesse Thomas helped break the color barriers in the city retail trade by convincing Gimbel's department store to hire blacks. And, in Detroit, Mich., the division successfully encouraged the promotion of some workers into supervisory positions. Also in Detroit, the American Car Foundry praised the division telling representative William Jennifer, "your labors . . . will be crowned with the success it deserves."[15]

Problems of black women exposed

According to a Division of Negro Economics special report on black women, the great labor shortage during the war, especially in northern industries, gave black women the opportunity to enter industrial pursuits never opened to them before. The study of working conditions of black women exposed many problems that would not become topics of scrutiny for another 25 years. In addition to the conditions of employment, wages, hours, and standards, the report also touched on discrimination against black women and how such practices could be prevented. It even recommended that black women be promoted into supervisory positions as rewards for competent performances, an almost unheard of proposal 1 year before women had the right to vote.

The special study was as revealing as it was clairvoyant. It disclosed that black women suffered occupational discrimination *vis a vis* white women, the same as black men did in relation to their white counterparts. The report claimed this reached ludicrous proportions in perpetuating racial discrimination and stereotyping. Blacks were precluded from skilled jobs because employers thought them inferior to whites. This, said Helen B. Irvin, coauthor of the report, was totally false. She found, among many cases, a cigar maker who employed fair-complexioned black women in skilled positions "in order that they may be regarded by patrons as Cuban, South American or Spanish."[16]

The unabashed forms of discrimination were not confined to the private sector. Irvin found black women in the Federal Government working at the least desirable jobs, with the specter of unemployment hanging over their heads when the soldiers returned from the war. She labeled this a guise for blatant discrimination, stating, "Others were frankly told that such position as remained available were intended for white workers, and that they had been used merely because no others could be obtained . . . ."[17]

Concluding on a more positive note, the report predicted that the Federal Government would be the primary means of breaking the bonds of segregation and discrimination. Irvin predicted that black female workers would be rewarded in the future with promotions and job security in the Federal Government, and that it was not too far in the future that this would come to pass. Unfortunately, the time span was considerably longer than even she expected.

Fight for survival

As the war began to wane, it affected industrial production in tandem, and the Division of Negro Economics again demonstrated flexibility in handling new situations. The transition from a war to a peacetime economy, if precedents held true, meant the laying off of most black workers. The projections of unemployed blacks, packed into ever growing slums and facing daily diets of poverty and dispair, appeared imminent.

The division wanted to deter this grim prophecy. The local advisory committee in Pittsburgh, Pa., negotiated an agreement with the Carnegie Steel Co., for the retention of one-third of the black workers it employed during the peak of wartime production. This agreement set a precedent, as several other steel companies in the valleys washed by the Allegheny and Monongehela rivers instituted similar plans. Unfortunately, some steel companies, as well as other industries, retained black workers only to thwart the growing trend towards industrial unionism—some employers used the black workers as strikebreakers and union busters, particularly during the brutal and violent steel and meatpacking strikes of 1919. But despite this, Haynes still thought that the worker retention plans "show to a small degree some of the practical work accomplished by this division within a short period of time."[18]

The welcomed winds of peace bore ill tidings for the Division of Negro Economics. Promises of social and economic justice, if not social acceptance, looked bright and meaningful before the armistice. But, once the peace was consummated, submerged racial antagonisms crept towards the surface. Indicative of the changing atmosphere was a series of race riots which swept across the Nation, crippling Detroit, Washington, Chicago, and other cities.

The first signs of trouble for the division came from Florida. In April 1919, Governor Sidney Catts requested that the Department of Labor abolish the Florida Division of Negro Economics, and at the same time replace the head of the U.S. Employment Service (who was white) with a personal friend he described as "a real Florida cracker." Catts accused the Division's "carpet-bag negro federal officers" of inciting riots by promulgating the amalgamation of the races. "I am looking upon this question as a white man," he said, " . . . I could look upon it from no other viewpoint . . . . "[19]

Assistant Secretary Post found Catts' remarks specious at best. The State representative had been a mechanic, teacher, and businessman in Florida for a number of years and was respected by many influential white persons of the State. Secretary Wilson, temporarily suspended the division's program until he could investigate Catts' charges, but later reinstated it.

The Florida dispute was only a harbinger of future problems. A few weeks later, the *New York Tribune*, quoted an unnamed U.S. Senator who complained that irritation over the use of black labor conciliators in the South had reached a high point from the Atlantic Coast to Texas. "If Secretary Wilson, and more particularly Assistant Secretary Post," said the unnamed source, "do not pull in their horns very promptly, it will topple the cornerstone of the Democratic South.[20]

Tensions increased and criticism became uglier. At the convention of the southern-based National Lumber Manufacturers Association, in 1919, the association's president, John Kirby, expressed displeasure over the division. Referring to the Labor Department's request for a conference to iron out difficulties, Kirby told the audience, "I shall be glad to confer with Mr. Wilson or Mr. Post, but when it comes to sitting in counsel with Dr. Haynes, a negro, you will have to excuse me. In the South we tell negroes what to do; we do not take counsel with them." A reporter covering the convention wrote, "his audience broke into a storm of cheers when the speaker dramatically told of refusing to sit with a negro."[21]

Battle lost

Criticism and condemnation only convinced officials of the Labor Department that the division should become permanent. "I desire for the Division of Negro Economics to be continued," Secretary Wilson wrote to Louis Post. Apparently, Wilson also informed Haynes of this, for Haynes, in a confidential letter to his New York representative, wrote, "the Secretary wants to make it [the division] permanent." In fact, Secretary Wilson, as early as 1918, submitted a bill to the Congress to accomplish this task, but it died in committee. As an alternative, the Secretary proposed funds for the division in the appropriations request before the Congress.[22]

In the Congress, the division's friends and foes met to decide its fate. An optimistic Haynes said, "on every side, everyone who has looked into it commends the work as valuable and necessary, but no one can tell what Congress will do."[23] When the bill came before the labor committee, an unnamed legislator raised a parliamentary point of order over funding, claiming that the Secretary of Labor, by creating a public agency, usurped powers mandated to the Congress, and that the issue of appropriations was moot. The conferees upheld this point.

The issue of usurpation of powers was a ploy. Section 4 of the organic act creating a Department of Labor allowed the Secretary to appoint special advisers and utilize them in a cooperative effort with other branches of government. Solicitor of Labor John Abercrombie cited similar cooperative efforts, including those in the U.S. Public Health Service and the War Risk Insurance Bureau of the Treasury Department. Apparently none of this impressed the committee, and the division faced extinction with the beginning of fiscal year 1920.[24]

Civil rights leaders fulminated with anger. Mary White Ovington of the NAACP accused the Congress of unabashed racism; Eugene K. Jones of the Urban League expressed shock and sorrow over the Congress' shallow excuses; and T. J. Woofter of the Phelps Stokes Foundation called the action "sheer political chicanery."[25]

But the division was not yet dead, only critically wounded. Haynes and Assistant Secretary Post drafted new legislation for the next session of the Congress (in 1921), and Secretary Wilson transferred funds from other appropriations to maintain a skeleton Division of Negro Economics. Haynes' services were shared with the Inter-Church World Movement which, in turn, paid part of his salary. The U.S. Conciliation Service absorbed some of the division's personnel, but programs and activities were drastically suppressed. Local advisory committees, without central direction, began to disperse, decay, and finally disappear.

One last gasp of hope remained. The Congress could legislate the division into existence, and some heavy lobby pressure by civil rights groups resulted in hearings on a bill. Haynes testified as the official Labor Department representative, arguing that such a Federal agency would help improve race relations in the Nation and coordinate local efforts to achieve racial harmony and equal opportunity. Such a program, said Haynes, could only be administered at the Federal level.

Haynes' appeals fell on deaf ears. Senator Francis Warren of Wyoming expressed the general feeling about the bill's chances, stating: "You are exactly equal under the law. You are exactly equal, of course, under those appropriations. But as far as we are concerned, there should not be division between different classes of workmen, one against the other . . . we have to look at it with the idea of preserving equality. The same rule applies to both."[26] Haynes retorted, "the fact is Senator, that heretofore the inequality has rested the other way when it has come to matters of industrial opportunity and employment."

No clever repartee, however, could change the outcome. In 1921, a new Administration took over, and with it came a new chief of the Labor Department, James J. Davis, who showed little interest in fighting for the Division of Negro Economics' continuance. The division limped along for another year before succumbing to neglect and disuse. Even though its death was neither a cause nor an effect for the growth of slums and poverty or the escalation of unemployment rates among blacks, it is conceivable that its continued operations might have at least improved conditions. Unfortunately, the program was too advanced for the time in which it existed. ☐

FOOTNOTES

[1] T.J. Woofter, "The Negro and Industrial Peace," *The Survey*, Dec. 18, 1920, p. 421.

[2] Clark Wilhelm, "William B. Wilson: The First Secretary of Labor," (Ph.D. diss., Johns Hopkins University, 1967) p. 180; Henry Mussey, "Louis Post, American," *Nation*, June 12, 1920, p. 793.

[3] Samuel Gompers to William B. Wilson, Jan. 19, 1971 and J. H. Walker, Illinois Federation of Labor, to Wilson, Mar. 16, 1917, file 13/65; Southern States Phosphate Co. to Louis Post, May 25, 1917 and Theodore Bilbo to William B. Wilson, June 6, 1917, file 16/433, National Archives Record Group (NARG) 174; Ray Stannard Baker, "The Negro goes North," *Worlds Work*, July 1917, p. 315.

[4] Louis Post to Presidential Assistant J.P. Tumulty, Dec. 12, 1916, Woodrow Wilson Papers, Series #4, 1913–17, Library of Congress Manuscript Division (LCMD).

[5] Thomas Swann to President Woodrow Wilson, Mar. 31, 1913, file 16/38, NARG 174; Richard Bolden to Wilson, July 9, 1917, NAACP Papers, Box 319, LCMD.

[6] Minutes of the NAACP Board of Directors, May 13, 1918, NAACP Papers, Box A-1, LCMD; Louis Post to W.B. Wilson, Feb. 15, 1918, file 8/102 and Louis Post to George Haynes, Apr. 24, 1918, file 8/102-B, NARG 174.

[7] Criticisms that the Division of Negro Economics was a segregated branch of the U.S. Employment Service were based on ironic twists of fate. The immediate personnel of the division were black because its chief believed that they could better relate to black problems. The offices which housed the division branches did not have segregated facilities. In fact, the first recorded case of what now is called "reverse discrimination" may have occurred when Jesse Thomas, the division's representative in New York, told the USES director he did not want the loan of a white secretary, saying, "although I have no objections professionally, I prefer a 'colored' girl." See Jesse Thomas to Annette Erdman, U.S. Employment Service, Mar. 25, 1919, National Urban League Papers, SRO Box B-4, LCMD; Department of Labor Press Release, Information and Education Service, Nov. 25, 1918, file 8/102-C, NARG 174.

[8] W.E.B. DuBois to Louis Post, Apr. 16, 1918 and Post to DuBois, Apr. 18, 1918, file 8/102-B; *Washington Bee*, Apr. 1918, file 8/102-B; Emmett Scott, War Department to Dr. James Dillard, Mar. 23, 1918, file 8/102-A, NARG 174.

[9] Giles B. Jackson to J.P. Tumulty, July 13, 1917, Woodrow Wilson Papers, Series #4, 1914–1918; Giles B. Jackson to Samuel Gompers, July 31, 1917, Mar. 2, 1918, file 8/102-A; Gompers to Jackson, Jan. 14, 1918, file 8/102-A, NARG 174.

[10] John Shillady of the NAACP to Secretary Wilson, Mar. 25, 1918, Grahm Taylor to Louis Post, Mar. 30, 1918, Emmett Scott to Secretary of War, Newton Baker, Apr. 26, 1918, file 8/102-A, NARG 174.

[11] U.S. Department of Labor, Division of Negro Economics, *Negro At Work During the World War and Reconstruction* (Washington, Government Printing Office, 1921), Post to Wilson (quotes Bickett) July 2, 1918, file 8/102-A; Department of Labor Press Release, *Statement of George E. Haynes*, file 20/40-A, NARG 174.

[12] U.S. Department of Labor, *Negro at Work*, pp. 119–23.

[13] Melvin Chisum of the Tuskeegee Institute to George Haynes, Oct. 5, 1918, file 8/102-A (taken from Robert Rusa Moton papers, General Correspondence File, Tuskeegee Archives).

[14] Charles Hall to George Haynes, (undated), file 8/102-C, NARG 174; U.S. Department of Labor, *Negro at Work*, pp. 112–15.

[15] Officials of the American Car Foundry to E.B. Williams, Michigan representative of Negro Economics, 1919, Carter Woodson Papers, file 170, Box 14, LCMD.

[16] U.S. Department of Labor, *Negro at Work*, pp. 127–28.

[17] U.S. Department of Labor, *Negro at Work*, pp. 127–28.

[18] U.S. Department of Labor, *Negro at Work*, p. 118.

[19] Sidney Catts to Secretary Wilson, Apr. 7, 1919, Apr. 22, 1919, and Wilson to Catts, Apr. 15, 1919, file 8/102-E, NARG 174.

[20] *New York Tribune*, Apr. 21, 1919.

[21] *Washington Post*, Apr. 3, 1919; *Pittsburgh Courrier*, Apr. 12, 1919, *New Orleans Vindicator*, Apr. 12, 1919.

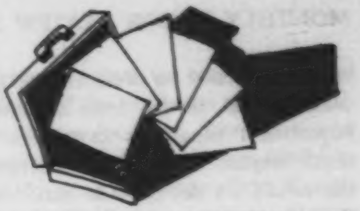
[22] *Report of the Division of Negro Economics to the Secretary of Labor: 1919*, file 8/102-E; *Report of the Conference on Inter-Racial Affairs*, Feb. 19, 1919, file 16/726; Haynes to Post, May 10, 1919, file 8/102, NARG 174.

[23] Haynes to Jesse Thomas, Feb. 28, 1919, May 12, 1919, National Urban League Papers, SRO Box B-4, LCMD.

[24] U.S. Department of Labor, *Negro at Work*, pp. 135–36; U.S. Congress, Senate Subcommittee on Appropriations, *Hearings on H.R. 15543, Appropriations—Civil Sundry Bill*, Jan. 28th to Feb. 2nd, 1921 (65th Cong., 2nd Sess., 1921), pp. 98–100.

[25] T.J. Woofter to George Foster Peabody, (undated), NAACP Papers, Box C-319, Mary White Ovington, Aug. 19, 1919, NAACP Papers, Box C-319, LCMD.

[26] U.S. Congress, *Hearings on H.R. 15543*, pp. 98–100.



Conference Papers

The following excerpts are adapted from papers presented at the Thirty-Fourth Annual Meeting of the Industrial Relations Research Association, December 1981, in Washington, D.C.

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Human capital and multinationals: evidence from Brazil and Mexico

RICHARD U. MILLER AND MAHMOOD A. ZAIDI

Although the theoretical and empirical literature dealing with economic growth is by now quite extensive, one cannot say the same for the issue of human capital and development. In the first place, much of the research has been carried out in the industrialized countries.[1] Moreover, those studies that deal with less developed countries have focused almost solely on returns to general training or education without touching those questions associated with on-the-job specific training.[2]

This void in the human capital literature is particularly important from the standpoint of less developed nations, given their reliance on economic development via industrialization and the preeminent role in this process assigned to foreign capital. For example, it is not clear to what extent investment in general education actually pays off in higher earnings for those workers either aspiring to or gaining access to the modern sectors of a developing country. Related questions also involve the emergence of credentialism as a consequence of general education investments; the incidence of specific training in modern-sector firms and its payoffs, the way in which training investments are funded and who bears the costs in such firms; and so on. Without adequate evaluation, educational policy may not only be ineffectual but may, in fact, produce negative consequences.[3]

Broadly speaking, two competing hypotheses may be considered. The first is that the presence of multinational corporations in a host country stimulates investment in human capital. This could result either from on-the-job and other training (and other human services) provided by the multinational corporation to its employees, or from an increased incentive for the domestic population to engage in schooling and "off-the-job" training. Such incentive is presumably the result of the presence of modern-sector jobs provided by the multinational corporation. Alternatively, it may be argued that multinationals contribute only marginally to the development of human capital in less developed countries because they tend to import capital intensive technologies which imply the need for relatively few skilled employees who may themselves be foreign nationals.

To evaluate these hypotheses, we expanded the standard human capital model proposed by Jacob Mincer,[4] and tested its applicability to particular multinational corporations in developing countries. (For a discussion of the model, see the full paper.)

An alternative to the education-productivity-earnings relationship of the human capital model is the screening hypothesis, or theory of credentialism, which asserts that employers prefer better educated workers for reasons other than increased productivity. Therefore, they will treat educational qualifications merely as a screening device when hiring new workers.[5] It is argued that the employer's main concerns are with trainability and with administrative expedience. Hence, as educational levels rise in a society, so too will the educational hiring standards. If this hypothesis is confirmed, the implications are enormous, particularly for a developing country. First, cohorts of older workers may become increasingly disadvantaged vis-à-vis younger workers and society may thus become more stratified. Second, returns to education may be more highly correlated with starting wage than with long-term earnings. Third, the incidence of credentialism may be highest among those firms with the strongest internal labor markets, that is, modern-sector multinational firms, thereby con-

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tributing further to occupational and economic stratifications. And, finally, from a general social standpoint, educational expansion in general is unlikely to have much impact on earnings differentials. The results of our model do not provide hard evidence for or against the screening hypothesis, but we were able to draw certain conclusions from ancillary data on our sample of workers.

The incidence and costs of on-the-job training are generally considered to be more difficult areas of human capital theory to deal with conceptually and empirically. As one observer points out, "From the earliest formulations of the human-capital model by Schultz, Becker and Mincer, it was on-the-job training and not formal schooling that was taken to be the paradigm case of self-investment."[6] Yet the difficulties in measuring returns to such investment grew as it became clear that it was possible to identify a number of forms of on-the-job training, for example, general versus specific training, or training which occurred under supervision versus that acquired simply by doing. Training might, in fact, be acquired off the job but while still employed by the firm and this, too, might be general or specific. Thus, simply to speak of general versus specific training or even off-the-job versus on-the-job training is methodologically inadequate. However, our model has obvious shortcomings concerning the identification and measurement of who bears the training investment costs and who reaps the returns. Therefore, alternative information was analyzed to answer these questions.

The data for this analysis were collected in Mexico City in 1975–76 and in Sao Paulo, Brazil in 1977, and consist of a 10-percent random sample of employees at one plant or location for two American multinational firms in each country. In order to standardize the data as much as possible, the main sample is composed of workers from the same auto manufacturing and retail trade firms in Mexico and in Brazil. In addition, supplementary data were also gathered in Brazil from two other U.S. multinational corporations and from a large Brazilian utility company. The total sample consists of 1,137 workers.

The findings

According to ordinary least squares results from our regression model, the current wage was, almost without exception, not significantly associated with such variables as previous training, current training, and years of work experience prior to current employment in the firms in Brazil, but prior work experience was significant in the Mexican branches. However, education and tenure were significantly related in both countries.

The above findings lend themselves to several conclusions. For example, prior experience and training do not seem to pay off directly in higher earnings in the Brazilian firms as one might expect if they were a form of specific investment in human capital that workers have paid for. Rather, they enhance the credentials of the job applicant, helping him or her to gain access to the modern sector, or they represent investments that workers did not pay for. Education, however, clearly both enhances credentials, and provides a direct payoff. In the Mexican firms, prior work experience, education, and tenure all are beneficial to the employee.

The fact that our tenure and experience variables were significant raises questions for which the answers can be only speculative. However, if one assumes that as work experience increases, so too will skills, knowledge, and productivity, our findings may indicate returns to learning by doing. Because this assumption seems plausible, the tenure and experience results, along with the significant coefficients on education, appear to support the hypothesis that multinational corporations do reward individuals for investments in human capital.

Regarding the credentialism hypothesis, our interviews and data suggest that such screening occurs in both Mexico and Brazil. In the auto assembly plants, managers freely admitted that 80 percent of the work required no previous experience or skill, and another 16 percent could be classified at best as semi-skilled. Yet these same firms hired no one without at least the completion of primary education. For example, the mean years of education at the date of hiring at the Mexican auto plant had increased from 4.8 years during the 1940–50 period to 6.9 years during 1970–80 with no corresponding increase in job requirements. In both Mexico and Brazil, this educational criterion would effectively shut out 65 to 70 percent of the urban job seekers and nearly all the urban migrants.

To analyze the incidence and costs of on-the-job training in our main sample of firms, we differentiated between the auto companies and the retail trade organizations. In the former case, formal on-the-job training is almost nonexistent. The basic approach is learning while doing. Perhaps 4 percent of the workers get formal training and another 16 percent are permitted, *on their own time,* to practice other jobs and prepare themselves for promotion.[7] The retail trade firms were much more inclined to engage in formal on-the-job training, averaging better than 3 months of such training among the workers surveyed.

Those modern-sector firms that employ primarily blue-collar workers show a marked reluctance to bear the costs of formal training.[8] One must conclude that such employers place a high value on the forgone production that would occur with such "training." For their part, the retail trade firms do not seem to share this reluctance, for they train employees even in the face of much higher rates of voluntary turnover. This observation implies a much greater rate of return to such training investments for retail employers. Assuming that workers leave before their earnings equal their marginal productivity, these employers can pay off the investment in training and still retain a significant surplus in the classical sense. □

FOOTNOTES

[1] The standard references are, of course, Gary S. Becker, *Human Capital*, 2d ed. (Chicago, The University of Chicago Press, 1980); and Jacob Mincer, *Schooling, Experience and Earnings* (New York, Columbia University Press, 1974). See also Mark Blaug, "The Empirical Status of Human Capital Theory: A Slightly Jaundiced Survey," *Journal of Economic Literature*, September 1976, pp. 817–55.

[2] See, for example, Carmel U. Chiswick, "On Estimating Earnings Functions for LDCs," *Journal of Development Economics*, December 1977, pp. 67–78; Pak-wai Liu and Yue-chim Wong, "Human Capital and Inequality in Singapore," *Economic Development and Cultural Change*, January 1981, pp. 275–93; and George Psacharopoulos, "Schooling Experience and Earnings: The Case of an LDC," *Journal of Development Economics*, December 1977, pp. 39–48.

[3] For an example, see Claudio de Moura Castro, "Vocational Education and the Training of Industrial Labour in Brazil," *International Labour Review*, September-October 1979, pp. 617–29.

[4] See Mincer, *Schooling*.

[5] See Blaug, "The Empirical Status," pp. 845–49.

[6] *Ibid*, p. 836.

[7] This finding is supported by Samuel Morley and others in their study of 82 Brazilian firms. See Samuel A. Morley, Milton Barbosa, and Christina C. de Souza, "Evidence on the Internal Labor Market During a Process of Rapid Economic Growth," *Journal of Development Economics*, June 1978, p. 267.

[8] Morley and others, "Evidence on the Internal Labor Market," pp. 266–69. See also issues of *Business Latin America*, May 2, 1979, pp. 139–41, and June 6, 1979, pp. 182–83 for a description of relevant laws.

The effects of the minimum wage on farm employment: a new model

CURTIS L. GILROY

The effect of the minimum wage on employment and unemployment has received considerable attention in the empirical labor economics literature. Most analysts have tried to measure the minimum wage effects on demographic subgroups of the population, and some have investigated the effects on particular industry groups.[1] But relatively few have specifically focused on the employment effects of the minimum wage on agriculture, and their findings are generally in accord with the received neoclassical theory which hypothesizes reductions in employment as the minimum wage rises.

The following discussion reviews the empirical studies of the employment effects of the minimum wage in agriculture, and presents the results of an effort to extend and refine that research by employing a new model to test the robustness of the minimum wage effect. Results of this model, using 1967–79 data, indicate that a 10-percent increase in the agricultural minimum wage causes an employment decline of about 3 percent—the equivalent of some 45,000 farm jobs in 1979.

A review of the literature

Following the standard competitive labor market model, an increase in (or introduction of) a statutory minimum wage would cause optimizing employers to reduce the quantity of labor demanded. On the supply side, workers would offer more of their services at the higher wage. The result would be an excess supply of labor as fewer jobs are rationed among more workers.

One basic extension of this familiar comparative-static model in the recent theoretical work on the employment effects of the minimum wage is the consideration of both the covered and uncovered sectors. Recognizing that two types of jobs exist—those which are covered by the provisions of the Fair Labor Standards Act and those which are not—an increase in the Federally mandated wage would be expected to reduce employment in the covered sector. Those workers unable to find jobs there would (1) withdraw from the labor force, (2) remain unemployed in hopes of becoming reemployed in the covered sector, or (3) search for work in the uncovered sector. In the case of farmworkers, they may choose to leave agriculture altogether, and search for work in nonagricultural industries.

To the extent that agricultural workers search for work either in the uncovered sector or in nonfarm industry, the wage in the uncovered agricultural sector would fall, and the resulting employment increase would, to some extent, offset the employment loss in the covered sector. The net result depends on the rate of withdrawal of workers from the labor force, the extent to which displaced workers in the covered sector hold out in search of work there, the elasticities of demand for labor in the covered and uncovered sectors, and perceived and real employment opportunities in the nonagricultural sector. Although the relative importance of these factors is an empirical issue, the findings of the previous major studies unequivocally support the competitive hypothesis that increases in the mandated minimum have adverse employment effects. Among the findings:

- Edward Schuh found that a 10-percent increase in the minimum wage would reduce agricultural employment by 2.6 and 4.9 percent in the short and long run, respectively.[2]

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- Vernon Grise concluded that if the minimum wage were set between 9 and 50 percent above the prevailing average farm wage, the decline in the hired farm work force would vary between 2 and 10 percent in the short run, and 8 and 33 percent in the long run.[3]
- Bruce Gardner estimated that the 1966 FLSA extended minimum wage coverage reduced hired farm employment by about 18 percent from what it would otherwise have been in the 1967–70 period.[4]
- Theodore Lianos found the reduction in farm employment to be between 24 and 51 percent over the years 1967–69.[5]
- Using pooled cross-section data, H.F. Gallasch, Jr. estimated that a 10-percent increase in the agricultural minimum wage would result in a decrease of 6 percent in hired farmworker employment in 1971.[6]
- Using census data, Gallasch and Gardner found that minimum wage legislation reduced hired agricultural employment about 42 percent from what it would otherwise have been in 1970.[7]
- Gardner estimated that the minimum wage reduced the number of hired farmworkers by about 115,000 or 9 percent of its 1979 level.[8]
- And, in a specialized study of seasonal cotton workers, John Trapani and J.R. Moroney found that 1966 extended FLSA coverage accounted for 65 percent of the 93,000 cotton-worker jobs eliminated between 1967 and 1969.[9]

Unfortunately, it is difficult to compare the results of these studies in terms of relative size of the measured employment effects, because each differs considerably in the period analysed, variables included, and functional form. Furthermore, it is difficult to assess how differences in the models affect the results, since most authors do not report how their findings changed as a result of changes in variables or equation specification. In addition, most studies estimate minimum wage impacts on the basis of only a few years during which the minimum wage was in effect. And in some cases, a dummy variable is used for the minimum wage.

Nonetheless, for most studies, a point employment elasticity can be derived.[10] The estimated employment elasticities are the effects of a 10-percent increase in the minimum wage, (that is, 10 times the elasticity), and range widely from −0.7 to −6.6 percent.

Extending the standard model

The time-series studies which estimate the effect of the minimum wage on agricultural employment have most often used a single equation model of the form:

$$Y = f(MW, NW, T, X_1, \ldots X_n)$$

where the dependent variable Y is the measure of agricultural employment—in all cases, the level of hired farm labor employment. Independent variables include MW as the agricultural minimum wage, usually the deflated value of the Federal statutory minimum; NW as the average wage in nonagricultural industries, a measure of the opportunity wage; T as a time trend; and $X_1, \ldots X_n$ as other exogenous variables, such as the cost of non-labor inputs, amount of land in use, and farm product prices. Although a business cycle variable is not explicitly included, its effect is accounted for in NW, in that NW is multiplied by 1 minus the unemployment rate to adjust for the likelihood that a farmworker may not find work at the opportunity wage.

For purposes of this analysis, a number of refinements were made to the standard model, which it was hoped would provide additional time-series evidence of the effects of the minimum wage on agricultural employment:

—A dummy variable was included in the specification to account for the sharp discontinuity of the agricultural employment series used in most studies of this type. As a result of significant changes in the sample design and collection procedure of the U.S. Department of Agriculture (USDA) Agricultural Labor Survey, there is a break in the series between 1973 and 1974.[11]

—A family labor variable was constructed to test for the substitutability of family labor for hired labor. Although earlier studies of the agricultural labor market found that various components of the farm work force were interchangeable,[12] no studies of the minimum wage have tested directly for this substitutability.

—The nonfarm wage variable was separated into its alternative nonfarm (opportunity) wage component and the unemployment (cyclical) component. Previous research has unnecessarily constrained these factors to ratio form.

—The period was limited to that during which the minimum wage was applicable to agricultural workers—1967 to the present (1979). During this 13-year period, the agricultural minimum wage increased in eight steps from $1 to $2.90 an hour. Previous authors' use of longer time series, covering many years during which there was no minimum wage in agriculture, may mask the unemployment effect of the mandated wage and make the interpretation of employment elasticities less precise.

—Quarterly data were used instead of annual observations, because employment data are collected on a quarterly basis in the Agricultural Labor Survey. As a result, three dummy variables were included in the specification to account for seasonal influences (Q_2, Q_3, and Q_4 for the second, third, and fourth quarters). Quarterly data permit us to more precisely capture changes in the minimum wage, because the change is often mandated to take effect at a time other than at the beginning of a calendar year. In addition, cyclical fluctuations are more easily discernible using quarterly, rather than annual, observations. Finally, quarterly data provide us with more degrees of freedom. For those variables for which only annual observations exist, one value is carried throughout each of the relevant quarters.

—A measure of technical change was introduced to account for innovation in agriculture.[13] This variable is the sum of expenditures on experiment station research and extension work, the former from the USDA *Inventory of Agricultural Research* and the latter from unpublished USDA data. Having experimented with lags of from one to six quarters, a two-quarter lag was chosen as performing best.

—An attempt was made to account for changes in coverage of agricultural workers under the Fair Labor Standards Act. Although coverage data are not rich, no other study has attempted to control for any changes in coverage, nor is there any mention in other studies of its potential impact. Unpublished coverage data are from the Employment Standards Administration of the U.S. Department of Labor.

—Finally, the analysis was extended to include the estimated employment effects by sex and age. Although Agricultural Labor Survey data are not disaggregated by demographic characteristics, data from the Current Population Survey permit such a breakdown.

Results of the new model

Table 1 summarizes the estimates of the effects of minimum wages on agricultural employment using various specifications of the new estimating equation. The four columns reflect differences in the functional form of the equation (linear or double-log) and the form of the important nonfarm wage variable (constrained to ratio form or unconstrained).

The rows of table 1 differ in the control variables included in addition to the minimum wage variable in explaining farm employment. For example, line 1 reports estimates of the basic equation—one which controls for season of the year, employment opportunities in the nonfarm sector, farm product prices, farm input prices, and changes in the Agricultural Labor Survey, in addition to the minimum wage (adjusted for inflation). The coefficients from these regressions have been converted to reflect the percentage change in agricultural employment as a result of a 10-percent increase in the minimum wage, that is, 10 times the employment elasticity of the minimum wage.[14]

The versions of the basic equation imply a 1.6- to 3.2-percent reduction in hired agricultural employment in response to a 10-percent increase in the minimum wage over the 1967–79 period. Unlike "basic" linear-equation estimates using annual data (not shown), the coefficients of the minimum wage variable in these similarly specified equations, which are based on quarterly data over a more relevant period, are statistically significant.

Table 1. Estimated effect of a 10-percent increase in the minimum wage on hired agricultural employment, 1967–79[1]

[In percent]

Specification	Constrained[2]		Unconstrained[2]	
	Linear	Logarithmic	Linear	Logarithmic
Basic[3]	–2.56 (2.16)	–1.57 (1.05)	–3.23 (2.42)	–2.03 (1.23)
Basic + LAND[4] + TECH[5]	–4.36 (2.49)	–4.61 (1.91)	–5.80 (3.08)	–5.34 (2.05)
Basic + LAND + TECH + FAM[6]	–4.85 (2.57)	–3.20 (2.16)	–6.27 (3.22)	–3.63 (2.29)
Basic[7]	–1.47 (2.38)	–1.08 (0.93)	–1.86 (2.70)	–2.27 (1.14)
Basic + LAND + TECH[7]	–2.68 (2.76)	–5.25 (1.83)	–2.98 (3.05)	–5.39 (1.83)
Basic + LAND + TECH + FAM[7]	–2.76 (2.79)	–3.11 (1.75)	–3.12 (3.14)	–3.22 (1.79)

[1] To control for the appreciable serial correlation evidenced by ordinary least squares equations, these estimates were calculated using generalized least squares, according to the Cochrane-Orcutt method.

[2] "Constrained" or "unconstrained" refers to the form of the important nonfarm wage variable.

[3] The basic specification includes:

- —Dummy variables (Q_2, Q_3, and Q_4) to indicate the reference quarter for the data.
- —A dummy variable which assumes a value of 1 for the years 1974–79 and 0 for years before 1974, to account for the methodological break in the Agricultural Labor Survey.
- —*MW*—The Federally mandated agricultural minimum wage, deflated by the CPI.
- —*PROD*—The index of prices received by farmers for products sold, deflated by the CPI.
- —*INPUT*—The index of prices paid by farmers for nonlabor inputs, deflated by the CPI.

[4] *PLAND* is a variable representing the index of the price of agricultural land, deflated by the CPI.

[5] *TECH* is the measure of technical change, as indicated in the text.

[6] *FAM* is the ratio of the number of family workers to all agricultural workers.

[7] In addition to the variables listed in footnote 3, *COV* (the proportion of farm workers subject to the minimum wage) is also included in the specification.

NOTE: t-statistics indicated in parentheses.

Lines 2 and 3 report the results of adding various combinations of control variables to the basic equation. The size and significance of the employment elasticities appear to be largest in these more complete versions of the model. This holds true regardless of functional form. Only when a trend variable is added to the equation (not shown) are both size and statistical significance of the employment effects adversely affected. This result can be explained by the presence of trended variables—particularly technological change—already in the equation.[15]

The preferred model is that which includes all variables with sound theoretical basis (line 3). Among the four estimates, the model which includes the unconstrained version of the nonfarm wage variable makes more intuitive sense. Combining average hourly earnings and employment into one variable (common to all previous studies which measure this effect) assumes that a given change in each affects agricultural employment the same. There is no reason to assume this would be true.

The choice between functional forms is more complicated. The tendency is to prefer the logarithmic specification because variance is compressed; standards are then more stringent for levels of significance. Even so, the employment elasticities remain statistically significant at conventional levels in the more complete model (line 3). Although the elasticities are somewhat smaller in the logarithmic equations, they do provide a more conservative estimate of the minimum wage's impact. In summary, the estimates imply a reduction in employment of between 3.2 and 3.6 percent in response to a 10-percent increase in the minimum wage. This is equivalent to 41,000 to 46,000 farm jobs forgone in 1979.

Just as an increase in the minimum wage of a given number of workers raises the total wage bill, so does an increase in the number of those subject to the minimum wage provisions of the Fair Labor Standards Act. Therefore, in an attempt to account for changes in the level of FLSA coverage of agricultural workers, a variable *COV* (the proportion of farmworkers subject to minimum wage provisions of the Act) was added to the model (lines 4-6). This is preferable to combining the *level* and *coverage* into a single index, as has been done in most of the nonagricultural studies; such a multiplicative constrained relationship does not permit the estimation of the relative importance of changes in level and coverage alone.[16]

The coverage variable itself is everywhere positive, but very small and statistically insignificant (not shown). Like most studies of the nonagricultural sector, coverage effects are found to be weak. This is not altogether unexpected as the proportion of farmworkers covered is relatively low; with little variation, it has hovered about the 45-percent level throughout the 1970's. The new estimates of the minimum wage variable from this preferred model (line 6) imply an employment reduction of slightly over 3 percent, or about 41,000 jobs. These employment effects are somewhat lower than those reported in line 3, but the difference between elasticities from the linear and logarithmic equations is generally less.

Unpublished CPS employment data from the Bureau of Labor Statistics permit the estimation of minimum wage effects in agriculture by sex and age. The resulting employment elasticities for all workers and for men age 16 and over remain fairly stable (between −2.5 and −3.0 percent) and statistically significant depending upon variables included (not shown). This implies reductions in employment of between 85,000 and 100,000 for all agricultural workers, and between 65,000 and 80,000 for men.

Although less significance is exhibited in the estimates for women, striking results appear for young workers age 16 to 24. Significant disemployment effects of between 4.5 and 5.5 percent are reported. In the preferred model, a 10-percent increase in the minimum wage is estimated to result in a 5.7-percent decrease in youth employment in agriculture. Although somewhat larger, these results are consistent with those found in the literature estimating employment effects for *all* youth.[17]

Despite the consistently negative employment effects found using both the CPS and Agricultural Labor Survey data, significant conceptual and methodological differences in the surveys exist which make the elasticities derived from equations based on both data sets not strictly comparable. For example, the Agricultural Labor Survey separates hired from family agricultural workers; in the CPS there is no way to distinguish between the two. Also, the CPS is limited to persons 16 years and over, while the Agricultural Labor Survey has no age cutoff. In addition, the Agricultural Labor Survey counts all persons who do any agricultural work, including those with other jobs, but the CPS includes only those whose major activity is in agriculture. Finally, Agricultural Labor Survey data are collected four times a year on a quarterly-month basis, whereas the CPS is a monthly survey of about 65,000 households from which quarterly *averages* can be calculated. □

——*FOOTNOTES*——

[1] For a survey of the literature, see Charles Brown, Curtis Gilroy, and Andrew Kohen, "The Effect of the Minimum Wage on Employment and Unemployment," *Journal of Economic Literature*, forthcoming.

[2] G. Edward Schuh, "An Econometric Investigation of the Market for Hired Labor in Agriculture," *Journal of Farm Economics*, May 1962, pp. 307–21.

[3] Vernon N. Grise, *Hired Farm Labor: 1966 Patterns, Future Demand Prospects, Proposed Farm Wage Legislation*, Bulletin 462 (U.S. Department of Agriculture, 1971).

[4] Bruce Gardner, "Minimum Wages and the Farm Labor Market," *American Journal of Agricultural Economics*, August 1972, pp. 473–76.

[5] Theodore Lianos, "Impact of Minimum Wages Upon the Level and Composition of Agricultural Employment," *American Journal of Agricultural Economics*, August 1972, pp. 477–84.

[6] H. F. Gallasch, Jr., "Minimum Wages and the Farm Labor Market," *Southern Economic Journal*, January 1975, pp. 480–91.

[7] H. F. Gallasch, Jr., and Bruce L. Gardner, "Schooling and the Agricultural Minimum Wage," *American Journal of Agricultural Economics*, May 1978, pp. 264–68.

[8] Bruce Gardner, "What Have Minimum Wages Done in Agriculture?" in Simon Rottenberg, ed., *The Economics of Legal Minimum Wages* (Washington, American Enterprise Institute, 1981), pp. 210–32.

[9] John Trapani and J. R. Moroney, "The Impact of Federal Minimum Wage Laws on Employment of Seasonal Cotton Farm Workers," in Simon Rottenberg, ed., *The Economics of Legal Minimum Wages* (Washington, American Enterprise Institute, 1981), pp. 233–46.

[10] In a linear equation, the employment elasticity equals the regression coefficient of the minimum wage times the value of the ratio of the minimum wage to agricultural employment at some point in time. This is generally the last period (year) of the data time series.

[11] For an extensive discussion of the Agricultural Labor Survey design and sampling procedure, see James S. Holt and J. G. Elterich,

"Coverage and Exemptions of Agricultural Employment Under the Fair Labor Standards Act," in *Report of the Minimum Wage Study Commission, Vol. IV* (Washington, U.S. Government Printing Office, 1981), pp. 377–473.

[12] Edward W. Tyrchniewicz and G. Edward Schuh, "Econometric Analysis of the Agricultural Labor Market," *American Journal of Agricultural Economics*, November 1969, p. 782.

[13] This variable was first used by Schuh, in "An Econometric Investigation." The form of the variable in the present study is that suggested by Zvi Griliches in "Research Expenditures, Education, and the Aggregate Agricultural Production Function," *American Economic Review*, December 1964, pp. 961–74, and later employed by T. D. Wallace and D. M. Hoover in "Income Effects of Innovation: The Case of Labor in Agriculture," *Journal of Farm Economics*, May 1966, pp. 325–36; Gallasch in "Minimum Wages in the Farm Labor Market"; and Gallasch and Gardner in "Schooling."

[14] In double-logarithmic equations, the coefficient of the minimum wage variable is simply the employment elasticity. In a linear equation, the elasticity equals the regression coefficient times the mean value of the ratio of the minimum wage to hired employment over the sample period.

[15] For discussions of the relationship between the time trend and technology variables, see Schuh, "An Econometric Investigation"; G. Edward Schuh, "Interrelations Between the Farm Labor Force and Changes in the Total Economy," in *Rural Poverty in the United States* (Washington, The President's National Advisory Commission on Rural Poverty, 1968), pp. 170–84; and Tyrchniewicz and Schuh, "Econometric Analysis."

[16] See Hyman Kaitz, "Experience of the Past: The National Minimum," in *Youth Unemployment and Minimum Wages*, Bulletin 1657 (Bureau of Labor Statistics, 1970), pp. 30–54, for a discussion of the coverage-weighted minimum wage variable; and Charles Brown, Curtis Gilroy, and Andrew Kohen, *Time-Series Evidence of the Effect of the Minimum Wage on Youth Employment and Unemployment* (Cambridge, Mass., National Bureau of Economic Research, 1981), for the estimation of separate level and coverage effects.

[17] See Brown, Gilroy, and Kohen, *Time-Series Evidence*.

Public-sector union wage effects: a time series analysis

WILLIAM J. MOORE AND JOHN RAISIAN

Researchers have been attempting to measure the relative wage impact of unionism in the public sector for more than a decade. After surveying these research efforts, David Lewin expressed the feelings of many others when he concluded that "the 'average' wage effect of unionism in government . . . is roughly on the order of 5 percent, a much smaller impact than is popularly supposed and smaller than the average union wage impact in private industry."[1] But while this result should be comforting to those who have doubts about the propriety of transferring the process of collective bargaining to the public sector,[2] we have new time series evidence which could alter existing views on the issue.

Using longitudinal microdata from the Income Dynamics survey,[3] we developed some standardized results for a group of public employees for an extended period of time. That is, we calculated the union wage premium using the same model specification for each year for the period 1967 through 1977. (A description of our human-capital earnings model may be found in the full paper.) With these estimates, we can examine the year-to-year fluctuations in the premium to see whether there is danger in treating single-year cross-section estimates as stable indicators. Next, we pooled the annual cross-section data to estimate the overall effects of public unions for the entire period. This approach should provide us with more reliable estimates of the effects of public unions on various groups of public employees during this period. Finally, we estimated regressions for separate samples of union and nonunion public employees in order to analyze the growth rate of real wages for these types of employees. Throughout the following discussion, we present similar estimates for the economy as a whole from the same data base for comparative purposes.[4]

Annual estimates. The annual union wage premiums for public employees were calculated from ordinary least squares regressions for each year from 1967 to 1977, and were compared with union premiums for the whole economy, which we estimated earlier using an almost identical model specification.

Our results suggest that the public sector wage premium may have increased during the period 1967 to 1977, both in absolute terms, and relative to the union premium in the private sector. The average public sector union wage premium for the period 1967 to 1972 was only 8.64 percent compared to 15.87 percent for the last 5-year period observed. However, the interpretation that the public sector union wage premium has increased in recent years should be treated cautiously. Conventional F-tests revealed that the parameter estimates on the union variables are not statistically significantly different for each year. Also, the sample size virtually doubled in the latter period, perhaps accounting for the increased statistical significance of the later individual-year estimates. Finally, the public sector union premium ranged from −.12 percent to 18.32 percent over the years studied, and was substantially smaller than the wage premium for the private sector, which varied from 19.81 to 25.51 percent.

One other important point is worth noting in these cross-section results. That is, substantial variation exists in the year-to-year estimates of the union wage premium in both the public and private sectors in the United States. This finding suggests that one should be extremely cautious in drawing conclusions concerning

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union wage effects from cross-section studies of a point in time.[5] To lessen this problem, we pooled the cross-section data to obtain an overall union wage premium for 1967–77, using a modification of the human capital-earnings model which included a Consumer Price Index deflator and a simple time trend.

The premium over time. Table 1 presents the estimated 1967–77 overall public sector union wage premium for all public employees and for some important subgroups. For comparative purposes, we also show the corresponding union wage premiums for the economy as a whole.

Our estimates of the overall wage effect of unions led to the following conclusions with respect to the influence of public unions in recent years. First, public unions have had a very substantial positive influence on the wages of their members relative to the wages of nonunion public employees, other things equal. The average public sector union wage premium for all public employees over the 1967–77 period was 12.82 percent. While this figure is substantially below the figure for private unions, 23.83 percent, it is considerably higher than the level reported in most other studies of the public sector, as noted above.[6] This is probably because our data extend to more recent years than those underlying most of the other studies, and the public sector union wage premium has been rising over time.

Second, we found that the public sector union wage premium differs significantly among various types of workers, but that the pattern of deviation is almost identical to that for the economy as a whole. In general, the premium is significantly larger for nonwhite workers (16.63 percent), southern workers (20.97 percent), and blue-collar employees (22.96 percent). Because column 3 indicates that this same pattern is present among union wage premiums for the total economy, it would appear that some basic force is in operation in union wage determination in both the public and private sectors. In an earlier paper, we attributed the relatively large union premiums for nonwhite, southern, blue-collar, and less educated workers to the attempt by unions to pursue a more-or-less standard wage for their members for reasons of equity and administrative convenience.

Table 1. Pooled estimates of union-nonunion relative wage effects in the public sector, 1967–77

Union group (1)	Percentage union wage premium	
	Public sector (2)	Total economy (3)
All union members	12.82	23.83
White	10.15	20.09
Nonwhite	16.63	30.93
South	20.97	30.94
Nonsouth	8.70	20.44
Blue-collar	22.96	30.92
White-collar	5.79	4.17

The pace of wage growth. In order to ascertain the extent of differential wage growth between union and nonunion public employees over the period, we re-estimated the modified human capital-earnings equation with a simple trend variable added for separate samples of union and nonunion employees. According to these estimates, the real hourly wage of union employees in the public sector rose by 2.044 percent annually during 1967–77, compared to only 1.543 percent for nonunion employees. However, the difference in the two growth rates was not statistically significant at the .05 level. For the economy as a whole, wages in the union sector did rise at a statistically significant higher rate (1.884 percent) than in the nonunion sector (1.118 percent).

The annual growth rate for union workers was higher in the public sector (2.044 percent) than for the total economy (1.884 percent) but the difference was not statistically significant by conventional standards. The growth rate in wages for nonunion employees was also higher in the public sector (1.543 percent) than for the economy as a whole (1.118 percent), suggesting that forces other than growth in union membership have been partially responsible for the relative gain in public sector wage rates over the period.

OUR RESULTS INDICATE that the relative wage effects of unions in the public sector may have risen in recent years. For the period 1973–77, we calculated the public sector average union wage premium to be 15.87 percent, a threefold increase over earlier cross-section estimates. For the entire 1967–77 period, the premium was 12.82 percent. While these figures are still substantially below private sector union wage premiums, it appears that the differential is narrowing. In this last regard, we found that union and nonunion employees in the public sector experienced faster rates of growth in wages than their private sector counterparts over the period. Finally, because fringe benefits are generally greater in the public sector than in the private sector, and because the threat effects of public unions may exceed those of unions in the private sector, growth in the economic influence of unions in the public sector is a phenomenon which should be watched closely in the future. ☐

——— *FOOTNOTES* ———

[1] David Lewin, "Public Sector Labor Relations," *Labor History*, Winter 1977, p. 138.

[2] H. Wellington and R. Winter, *The Unions and the Cities* (Washington, The Brookings Institution, 1971); and Daniel Orr, "Public Employee Compensation Levels," in A. Lawrence Chickering, ed., *Public Employee Unions* (San Francisco, Institute for Contemporary Studies, 1977), pp. 131–44.

[3] The Income Dynamics Panel was collected and processed by the Survey Research Center of the University of Michigan. Because part of the sample was purposefully taken from low-income households, some caution should be used in generalizing our empirical results to the entire economy.

[4] For an extended discussion of these results, see William J. Moore and John Raisian, *A Time Series Analysis of the Growth and Determinants of Union/Nonunion Relative Wage Effects, 1967–1977*, Working Paper No. 115 (Bureau of Labor Statistics, 1981).

[5] William J. Moore and John Raisian, "Cyclical Sensitivity of Union/Nonunion Relative Wage Effects," *Journal of Labor Research*, Spring 1980, pp. 115–32.

[6] Part of the explanation for this is that we omitted educational and medical employees from our sample of public employees. Because it is well established that union wage premiums for public schoolteachers are relatively small (0 to 5 percent), their omission from our sample is reflected in larger union premiums.

Organizations of working women can pave the way for unions

KAREN S. KOZIARA AND PATRICE J. INSLEY

Almost two-thirds of all women who work full-time are in white-collar occupations. Relatively few of them (about 13 percent) belong to unions.[1] During the last few years, however, a number of organizations have formed outside the traditional labor movement to address working women's problems.

Between 15 and 20 major organizations of working women formed in urban areas during the last decade. About 12 of them are linked nationally. The others are local and autonomous. All are still relatively small, given the size of their potential constituencies. Few have more than a thousand members. Those members work for a number of employers in a given area, and any one firm may employ only a few members.[2] The general overarching goal of these organizations is improving employment conditions faced by working women, particularly women in low income white-collar jobs. This goal has two related dimensions. The first involves economic or "bread and butter" issues, including low wages, employment discrimination, and lack of promotional opportunities. The second dimension involves the right to be treated with dignity and to have one's work be seen as meaningful and serious and includes problems such as sexual harassment and arbitrary and demeaning treatment by supervisors. A related goal is building a firm organizational base. This involves continued organizing efforts designed to introduce working women to the idea of working together to solve shared problems.

Organizations of working women generally focus on resolving immediate problems as a way of achieving goals. The tactics used vary enormously and are tailored to the specific problem being addressed. These tactics can be classified into four general categories: information gathering, conciliation, direct action, and education.

Information gathering is both an important first step in becoming established and also an important ongoing activity for these organizations. Initially, surveys conducted among selected populations of working women help identify particular employment problems and problem employers. This information serves as a basis for program planning and as a way of letting people know of the organization's existence. Employment problems are handled on a case-by-case basis. Examples of the issues handled are failure of a firm to live up to an affirmative action plan, specific incidents of sexual harassment, low wages, and employer failure to post promotional opportunities.

Conciliation involves approaching the employer or governmental agency in an effort to resolve an identified problem. In some instances, the problem can be resolved through discussion sessions; in other instances, the employer or concerned agency is unwilling to meet with representatives of the organization or is unwilling to make any concessions. If efforts at conciliation through discussion are unsuccessful, then direct action can be used.

Direct action can take many forms. Not enough members work for any one employer to make effective use of strikes and strike threats; therefore, most forms of direct action are designed to bring the involved employer unfavorable publicity. Examples of such activities include public awards, such as a Christmas "Scrooge of the Year" award and a "Pettiest Office Procedure" award. These have the combined impact of making the organization visible, while at the same time putting pressure on the involved employer. Other forms of direct action include presentation of signed petitions, picketing, and even sit-ins.

Also government agencies can be used to pressure employers to live up to their legal obligations. This is most frequently used when the issue is affirmative action, equal employment opportunity, or age discrimination. Banks have been a major focus of this type of action because of the large numbers of low income women employed in banking. Efforts have been made by organizations of working women to have the U.S. Department of Labor's Office of Federal Contract Compliance Programs monitor affirmative action programs in the banking industry, and a number of administrative complaints have resulted. These tactics have had some success: a number of banks have made backpay settle-

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ments, four banks in Baltimore raised wages of low level bank employees, several banks and insurance companies have agreed to job posting programs, and at least one bank has instituted a major training program for clerical employees.[3]

Education and outreach are extremely important activities for working women's organizations. They are accomplished through programs, seminars, and publications and serve two major functions. First, they are a way to get visibility and to reach potential members. Getting people involved in educational programs is also an important way of increasing member commitment. It is also a service that encourages people to maintain their membership, perhaps even after a specific employer-based problem has been resolved.

The second major function performed by educational activities is to help women understand and develop ways of handling problems at work. Examples of typical subjects include skills assessment, conflict management in an office setting, equal employment opportunity law, retirement planning, assertiveness training, and career planning. Additionally, some educational programs are more general and aim at developing an understanding of common problems and solutions.

Currently, organizations of working women do not perform the functions performed by unions. They do not press for certified bargaining rights, they negotiate with employers only over limited issues, and they do not sign collective bargaining contracts. Additionally, they have relatively little contact with the labor movement.

A major reason for their independence from the labor movement is the belief that the organizing model used by unions is ineffective in organizing women in clerical occupations. There are several explanations for the labor movement's inability to effectively organize these workers. One explanation is that the labor movement has not been willing to expend the resources or develop the tactics necessary to organize successfully in these areas. A second explanation is that female clerical and service workers have not been ready to join unions.[4]

Both explanations are consistent with the emergence of working women's organizations which provide a new model for organizing female clerical workers. Some observers have described this model as "preorganizing," or creating the conditions that make union organizing viable.

In theory, the potential exists for innovative and cooperative arrangements between working women's organizations and the labor movement. There are mutual interests. Many unions are interested in organizing in new areas, and organizations of working women do not provide as broad employment protections as do collective bargaining contracts. In fact, members of one affiliate, Nine to Five in Boston, formed a local union, which joined the Service Employees International Union as Local 925.[5]

This indicates that innovative arrangements can be developed. However, the essence of innovation is doing things differently than before, and that type of organizational change is often difficult to achieve because of institutional barriers facing it. □

FOOTNOTES

[1] Linda H. LeGrande, "Women in labor organizations: their ranks are increasing," *Monthly Labor Review*, August 1978, p. 9.

[2] Information in this report comes primarily from interviews with officers and directors of Working Women, Women Employed, and Interfaith Women's Alliance for Working Women conducted by the authors during 1980 and 1981.

[3] Working Women, *Report from Working Women*, April 1980.

[4] Roberta Lynch, "Women in the Workforce," *The Progressive*, October 1979, p. 29.

[5] Nancy Seifer and Barbara Wertheimer, "New Approaches to Collective Power," in Bernice Cummings and Victoria Schuck, eds., *Women Organizing: An Anthology*.

Research Summaries

Employment problems and poverty: examining the linkages

PAUL M. RYSCAVAGE

The sharp upturns in the unemployment rate in 1980 and 1981 have again focused attention on the economic consequences of unemployment and other employment problems. There is, for example, much information about the unemployed—who they are, where they live, how long they have been unemployed—but little information on the impact of unemployment on family or household income.

The generally accepted notion is that unemployment still disrupts the economic well-being of many households, although not as seriously as during the Great Depression. This is because of the increase in the number of families with two or more wage earners, and the protection now afforded workers by unemployment insurance, food stamps, public assistance, and other maintenance programs. Also a greater proportion of unemployed workers today are not the traditional primary breadwinners. In sum, there has been increasing evidence that the relationship between unemployment and economic hardship has weakened in recent decades, but this has not been quantified in any systematic way.[1]

The National Commission on Employment and Unemployment Statistics recommended in 1979 that data on unemployment, as well as other employment problems, be linked with data on income to determine the extent that job market problems cause economic hardship. The Bureau of Labor Statistics developed a data base to shed light on this question; in 1982, it issued a study which linked statistics on the labor force with statistics on family income and on the poverty status of the family.[2]

From this newly created data base for 1979—a relatively good employment year—two conclusions emerged:

- The relationship between unemployment (or other employment problems) and economic hardship was evident, but was not close. Unemployment occurred among all income levels and not all who experienced unemployment were in families with income below the poverty level.
- The linkage between unemployment (or other employment problems) and economic hardship was much tighter for some marital groups than others. For example, among women who maintained families and experienced some unemployment in 1979, the chance of living in poverty was almost 50 percent. On the other hand, for husbands who experienced some unemployment in 1979, the chance of living in poverty was only a little more than 1-in-10.

This report summarizes some of the statistics for 1979 presented in the full report. In addition, it discusses some conceptual and technical issues involved with linking labor force and income statistics, and illustrates how this new data base can be refined to produce new insights into the relationship between various employment problems and economic hardship.

Conceptual and technical issues

Labor force statistics and information on family income and poverty status were obtained from the March 1980 Current Population Survey (CPS). In March of each year, a supplemental questionnaire is used to gather information on the extent to which members of a sampled household engage in employment or job-search activities during the previous calendar year, and on the income derived from employment and other sources. This information differs from that which is collected in the monthly CPS. The monthly statistics may be regarded as a snapshot of the labor force of persons for the reference week of the survey. In this snapshot, persons are classified as employed, unemployed, or not in the labor force. The statistics from the March supplement measure the *extent* to which persons engaged in employment and unemployment activities during the previous calendar year. In this body of information, commonly referred to as the "work experience data," persons may be classified in more than one labor force category over the 12-month period.

Annual family income statistics are also collected in March and are for the previous calendar year. These statistics include wages and salaries, self-employment income, dividends, interest, rental income, public assis-

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tance, social security, and any other money income regularly received.[3] Not included are the value of "noncash" benefits, such as food stamps, medicaid, public housing, fringe benefits, and other items which some families receive as part of their income.[4] The poverty status of families is determined on the basis of money income. A matrix of poverty lines reflects the different consumption requirements of families based on family size, composition, age of the householder, and farm-nonfarm residence. Families with money income below a threshold amount are considered by the Federal Government to be living in poverty. In 1979, the poverty threshold for a nonfarm family of four was $7,412; for a nonfarm family of seven persons or more, it was $12,280; and for an unrelated individual age 65 or over in a farm area, $2,963.[5]

Because the annual data on work experience and family income statistics are collected at the same time and have the same reference period, it is possible to link, or cross-classify them at the micro-level. The full study linked family income and poverty status with earnings of (1) the fully employed (those who usually work 35 hours or more a week for 50 or 52 weeks); (2) the partially employed (those who usually work less than 35 hours or more a week for 50 or 52 weeks); (3) those with some part-time employment; (4) those with some unemployment; (5) those employed less than 40 weeks; and (6) nonworkers unable to find work. These linkages are discussed by the various marital and family status categories: husbands, wives, others in married-couple families; women who maintain families; others in families maintained by women; men who maintain families; others in families maintained by men; and unrelated individuals. This breakdown is useful in interpreting the linkages. However, this summary discusses only three of the linkages—those involving the relationship between family income and (1) unemployment, (2) part-time employment, and (3) low earnings among the fully employed.

The linked labor force and income statistics are, of course, subject to different interpretations regarding economic hardship because of differences in opinion over the definition of economic hardship. In both the full report and this summary, economic hardship is discussed in terms of the Federal Government's poverty guidelines, although the BLS recognizes that other definitions could have been used. The problem of interpretation becomes particularly difficult among workers who experience an employment problem, but whose family income does not fall below the poverty level. Personal inconveniences and economic disruptions obviously result, but without a universally agreed-upon definition of hardship for such workers it is difficult to evaluate the data. As a guide for data users, however, workers' family incomes have been categorized according to their proximity to the Federal Government's poverty lines.

Table 1. Relationship between duration of unemployment and family income and poverty status, 1979

[Numbers in thousands]

Family income and poverty status	With labor force experience	Without unemployment	With unemployment					
			Total	1 to 4 weeks	5 to 14 weeks	15 to 26 weeks	27 to 51 weeks	52 weeks or more
All persons age 16 and over	114,848	96,876	17,971	5,676	6,298	3,534	2,141	322
Family income:[1]								
Under $5,000	6,079	3,870	2,209	606	607	456	448	93
$5,000 to $9,999	12,229	8,975	3,253	913	1,122	731	431	56
$10,000 to $14,999	16,262	13,266	2,996	804	1,105	657	367	63
$15,000 to $19,999	17,058	14,492	2,566	822	985	509	249	21
$20,000 to $24,999	16,579	14,405	2,173	747	789	378	225	33
$25,000 and over	46,441	41,668	4,773	1,784	1,710	802	422	55
Below poverty level:								
Total	7,024	4,467	2,557	653	744	540	501	120
Percent	6.1	4.6	14.2	11.5	11.8	15.3	23.4	37.1
Below 1.25 poverty level:								
Total	10,368	6,785	3,583	925	1,033	803	688	134
Percent	9.0	7.0	19.9	16.3	16.4	22.7	32.1	41.6
Below 1.50 poverty level:								
Total	14,064	9,501	4,563	1,195	1,391	1,002	821	154
Percent	12.3	9.8	25.4	21.1	22.1	28.3	38.4	47.7
Below 2.00 poverty level:								
Total	23,530	16,752	6,778	1,819	2,215	1,461	1,100	184
Percent	20.5	17.3	37.7	32.0	35.2	41.3	51.4	57.1
Median family income	$21,627	$22,600	$16,046	$18,007	$16,665	$14,290	$12,366	$10,758

[1] Personal income for unrelated individuals.

Linked data

One of the most striking findings from the linkage of labor force and income data is that unemployment, involuntary part-time employment, low earnings, and other forms of inadequate employment are found among families at all income levels. These problems, however, were clearly most frequent among families with low incomes or little financial protection.

To put these findings in perspective, it should be noted that in 1979, the unemployment rate averaged only 5.8 percent. The linking of labor force and income data for 1980 and 1981—years in which the unemployment rate averaged more than 7 percent—would undoubtedly reveal a greater amount of labor market related economic hardship than was evident using 1979 data.

Unemployment. About 18 million persons experienced some unemployment in 1979; 30 percent of them were in families with incomes below $10,000, and 39 percent were in families with income above $20,000. (See table 1.) Slightly more than 14 percent of those with unemployment were in poor families. The prevalence of multi-earner families and the availability of unemployment insurance and welfare programs obviously cushioned the economic burden of unemployment.

Although no income class was immune to unemployment, the workers with the longest duration of unemployment were more likely to be found among lower income families. Among members of families with incomes of $20,000 or more, 10 percent of those who encountered unemployment during 1979 were jobless for 26 weeks or more; among those from families with incomes below $10,000, nearly 20 percent were unemployed for 26 weeks or more. The relationship between the duration of unemployment and income class can also be examined in terms of marital and family status. For all workers encountering unemployment, median family incomes declined as the duration of unemployment became longer—from about $18,000 for those with the shortest spells to $11,000 for those with 52 weeks or more of joblessness. (See table 2.) The extent of the downward impact on family income, however, varied depending on which member of the family was the victim of unemployment. When only the husband encountered unemployment, the duration of the spell had a sharp impact on family income. When only the wife had been unemployed, family incomes changed very little as unemployment duration lengthened. In families where only "other" members (mostly youths) experienced unemployment, income declined slightly but remained well above $20,000 regardless of the duration of unemployment. Family income was low for women who maintained families (no spouse present) and experienced unemployment, and it was even lower if their unemployment duration was more than 15 weeks.

Table 2. Relationship between duration of unemployment of selected marital and family groups and their median family incomes, 1979

Marital and family group	Weeks of unemployment				
	1 to 4	5 to 14	15 to 26	27 to 51	52 and over
Median family income of all employed persons[1]	$18,007	$16,685	$14,299	$12,366	$10,758
Husbands	19,738	17,457	14,342	10,769	([2])
Wives	19,990	19,402	18,749	18,556	([2])
Others in married-couple families	31,208	29,435	28,193	24,241	23,847
Women who maintain families	6,595	6,914	6,689	5,143	([2])

[1] Personal income for unrelated individuals.
[2] Not shown because of base smaller than 75,000.

Table 3. Relationship between part-time employment and family income and poverty status, 1979

[Numbers in thousands]

Family income and poverty status	Total	Involuntary		Voluntary	Other
		Slack work or material shortage	Could only find part-time work		
All persons age 16 and over	42,400	7,496	3,711	19,515	11,678
Family income:[1]					
Under $5,000	3,669	649	636	1,511	872
$5,000 to $9,999	6,029	1,310	688	2,334	1,698
$10,000 to $14,999	6,401	1,450	567	2,523	1,860
$15,000 to $19,999	6,044	1,236	464	2,490	1,854
$20,000 to $24,999	5,502	1,006	413	2,600	1,483
$25,000 and over	14,756	1,846	943	8,057	3,910
Below poverty level:					
Total	3,967	770	722	1,493	982
Percent	9.4	10.3	19.5	7.6	8.4
Below 1.25 poverty level:					
Total	5,807	1,177	992	2,194	1,444
Percent	13.7	15.7	26.7	11.2	12.4
Below 1.50 poverty level:					
Total	7,724	1,603	1,217	2,903	2,002
Percent	18.2	21.4	32.8	14.9	17.1
Below 2.00 poverty level:					
Total	12,194	2,543	1,665	4,741	3,245
Percent	28.8	33.9	44.9	24.3	27.8
Median family income	$19,225	$16,329	$14,618	$21,669	$18,810

[1] Personal income for unrelated individuals.

Involuntary part-time employment. Involuntary part-time employment can also cause a reduction in personal earnings and family income. Two specific causes of involuntary part-time employment are slack work and the inability to find full-time work. Of the 42.4 million persons who worked part time some weeks in 1979, about 11.2 million, or one-quarter of the total, did so involuntarily. (See table 3.) About 7.5 million were on part-time schedules because of slack work, and 3.7 million worked part time because they could not find full-time jobs. Workers who experienced some involuntary part-time employment had lower family incomes than those who worked part time voluntarily or because of strikes, bad weather, plant retooling, and other "hard-to-classify" reasons. Furthermore, a greater proportion of involuntary part-time workers were poor; their poverty rate was about 13 percent. Nevertheless, involuntary part-time employment occurs among workers from all income classes. The incidence of poverty among those with some involuntary part-time employment varies greatly by the worker's marital and family status. The incidence of poverty was 36 percent among women who maintained families, and was more than 20 percent among unrelated individuals. On the other hand, among wives and other members of married-couple families (except husbands) the proportion averaged only about 5 percent.

The following tabulation shows the incidence of poverty among persons who had some involuntary part-time work in 1979, by the worker's marital and family status:

	Percent
Total, 16 and over	13.3
Husbands	11.2
Wives	6.2
Others in married-couple families	4.7
Women who maintain families	36.5
Others in families maintained by women	22.8
Men who maintain families	17.2
Others in families maintained by men	5.9
Unrelated individuals, men	21.9
Unrelated individuals, women	26.4

Low earnings. The vast majority of the 63.4 million full-time, year-round (fully employed) workers had annual earnings above $6,000. (See table 4.) The Federal minimum wage in 1979 was $2.90 an hour, and annual earnings of $6,000 implies that hourly wages were slightly above that minimum. There were 4.8 million workers with year-round full-time jobs who earned less than $6,000 in 1979. Not surprisingly, the median income of their families was relatively low. About 1.1 million, or nearly one-fourth, were members of poor families. However, not all of the low earners were members of poor families: almost 1.2 million lived in families with incomes of $20,000 a year or more.

Husbands are seldom found among the low-earning fully employed workers whose family income is still relatively high. Wives and other members of married-couple families make up the majority of such workers. On the other hand, the majority of low-earning, fully employed workers who lived in poverty families are either husbands, women who maintain families, or unrelated individuals of both sexes.

Multiple employment problems

Although not included in the full report, experimental tabulations were created from the March 1980 CPS

Table. 4 Relationship between earnings of full-time year-round workers and family income and poverty status, 1979

[Numbers in thousands]

Family income and poverty status	Total	Personal earnings							Median personal earnings
		Under $3,000	$3,000 to $5,999	$6,000 to $7,999	$8,000 to $9,999	$10,000 to $11,999	$12,000 to $14,999	$15,000 and over	
All persons age 16 and over	63,415	1,543	3,273	5,953	6,800	7,354	9,359	29,133	$14,077
Family income:[1]									
Under $5,000	985	604	369	6	3	4	(²)	(²)	2,198
$5,000 to $9,999	4,576	296	944	1,736	1,582	10	4	2	7,230
$10,000 to $14,999	6,552	198	589	931	1,104	2,802	2,913	15	10,839
$15,000 to $19,999	10,130	146	438	997	1,135	1,131	1,648	4,634	14,221
$20,000 to $24,999	10,181	89	305	752	955	1,102	1,567	5,411	15,619
$25,000 and over	26,992	210	628	1,527	2,023	2,305	3,227	19,072	19,487
Below poverty level:									
Total	1,340	661	408	181	64	22	4	(²)	3,029
Percent	2.1	42.8	12.5	3.0	.9	.3	(²)	(²)	21.5
Below 1.25 poverty level:									
Total	2,321	761	732	438	248	103	39	(²)	$4,588
Percent	3.7	49.3	22.4	7.4	3.6	1.4	.4	(²)	32.6
Below 1.50 poverty level:									
Total	3,632	841	1,118	728	481	294	145	25	$5,492
Percent	5.7	54.5	34.2	12.2	7.1	4.0	1.6	.1	39.0
Below 2.00 poverty level:									
Total	7,597	995	1,627	1,900	1,119	838	714	396	$7,166
Percent	12.0	64.5	49.7	32.1	18.4	11.4	7.6	1.4	50.9
Median family income	$23,611	$7,603	$12,617	$16,419	$18,093	$18,932	$20,362	$29,357	(³)

[1] Personal income for unrelated individuals.
[2] Zero or rounds to zero.
[3] Not applicable.

showing workers with multiple employment problems. For example, workers with low earnings and unemployment were cross-classified by the poverty status of their families. Previous hardship analyses have examined various employment problems but only one problem at a time. Yet in a year's time, many workers are likely to encounter more than one employment difficulty. To single out unemployment as the primary problem responsible for a family's economic hardship may, for example, overlook a problem of low earnings caused by jobs paying minimum or sub-minimum wages.

Table 5. Persons with unemployment and other labor market problems, by poverty status, 1979

[Numbers in thousands]

Characteristic	Total	Number living in families below poverty level	Percent living in families below poverty level
Total	17,971	2,557	14.2
Year-round, full-time workers[1]	793	20	2.5
Nonworkers	1,927	608	31.6
All other workers	15,243	1,929	12.7
Unemployed 4 weeks or less	1,196	15	1.3
Unemployed 5 weeks or more	1,380	18	1.3
Unemployment and low hourly earnings[2]	525	92	17.5
Unemployment and involuntary part-time employment	828	21	2.5
Unemployment and employment of fewer than 40 weeks	5,835	539	9.2
Unemployment, low hourly earnings, and involuntary part-time employment	227	54	23.8
Unemployment, low hourly earnings, and employment of fewer than 40 weeks[3]	2,294	588	25.6
Unemployment, involuntary part-time employment, and employment of fewer than 40 weeks	1,886	255	13.5
Unemployment, low hourly earnings, involuntary part-time employment, and employment of fewer than 40 weeks	1,072	347	32.4

[1] Year-round full-time workers are persons who worked 50 or more weeks of the year for usually 35 hours a week or more. By definition, therefore, these persons could experience a maximum of only 2 weeks of unemployment.

[2] Low hourly earnings were defined to be $2.90 an hour or less (the minimum wage in 1979 was $2.90).

[3] Employment of fewer than 40 weeks may not represent a problem for workers who limited their workweeks because of voluntary reasons, for example, students, youths, and homemakers.

NOTE: Data may not add to total because of rounding.

Table 5 shows individuals who experienced some unemployment in 1979 and other possible employment problem or problems they had, and their poverty status. The majority of persons encountering unemployment in 1979 also experienced other possible employment difficulties, such as employment for less than 40 weeks, low hourly earnings, and involuntary part-time employment.[6] In fact, only a small proportion of the partially employed persons encountering unemployment during 1979 were observed as having unemployment as their sole employment problem. The incidence of poverty for these workers was negligible. Workers with the highest incidences of poverty were those who experienced such combinations of employment problems as (1) unemployment, low hourly earnings, and involuntary part-time employment; (2) unemployment, part-year employment of less than 40 weeks, and low hourly earnings; and (3) unemployment, low hourly earnings, part-year employment, and involuntary part-time employment. For workers with this last combination of problems, the incidence of poverty was more than 30 percent. Clearly then, this experimental tabulation indicates that, for many workers, unemployment is frequently associated with other employment problems. ☐

FOOTNOTES

[1] Labor force statistics have been published by the Bureau of Labor Statistics, while income statistics have been reported by the Bureau of the Census.

[2] *Linking Employment Problems to Economic Status*, BLS Bulletin 2123 (Bureau of Labor Statistics, 1982), is available from the Superintendent of Documents, Government Printing Office, Washington D.C. 20402, and from the BLS regional offices listed on the inside front cover.

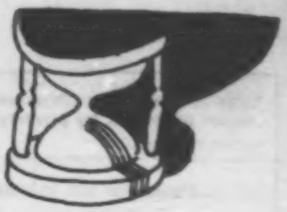
[3] *Money Income of Families and Persons in the United States: 1979*, Current Population Reports, Series P-60, No. 129, November 1981, pp. 282-93.

[4] *Money Income, 1979*, p. 283.

[5] For more information, see *Characteristics of the Population Below the Poverty Level: 1979*, Current Population Reports, Series P-60, No. 130, December 1981, pp. 201-14.

[6] For the purposes of this special tabulation, hourly earnings were derived for workers by dividing the product of weeks worked and usual weekly hours into annual earnings. Persons with hourly earnings of $2.90 (the minimum wage in 1979) or less were considered to have low hourly earnings. Many persons who worked fewer than 40 weeks in 1979 may not have had an employment problem if they limited their number of workweeks voluntarily. This is particularly true of students, youths, housewives, and others who have only a marginal attachment to the work force.

Major Agreements Expiring Next Month



This list of collective bargaining agreements expiring in July is based on contracts on file in the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more.

Employer and location	Industry	Union[1]	Number of workers
Allen-Bradley Co. (Milwaukee, Wis.)	Electrical products	Electrical Workers (UE-Ind.)	4,800
American Seating Co. (Grand Rapids, Mich.)	Furniture	Auto Workers (Ind.)	1,000
Arizona Steel Erectors Association	Construction	Iron Workers	1,500
Armstrong Rubber Co., Master Agreement (Interstate)	Rubber	Rubber Workers	3,000
Associated Garment Industries of St. Louis (Missouri)	Apparel	Ladies' Garment Workers	3,200
Associated General Contractors of America, Inc.: Mobile Chapter (Alabama and Florida)	Construction	Building and Construction Trades Council; including Teamsters (Ind.)	2,500
Association of Motion Picture and Television Producers, Inc., Basic Agreement (California)	Amusements	Theatrical Stage Employes	20,000
Association of Motion Picture and Television Producers, Inc. (California)	Amusements	Teamsters (Ind.)	2,000
Babcock and Wilcox Co., Power Generation Group (Ohio)	Fabricated metal products	Boilermakers	2,100
Columbus and Southern Ohio Electric Co.	Utilities	Electrical Workers (IBEW)	1,600
Diamond-Sunsweet, Inc. (Stockton, Calif.)	Food products	Teamsters (Ind.)	1,100
Dried Fruit Industry (California)[2]	Food products	Longshoremen and Warehousemen (Ind.)	1,000
East Bay Restaurant Association, Inc. (California)	Restaurants	Hotel and Restaurant Employees	5,500
Fairchild Industries, Inc. (Farmingdale, N.Y.)	Transportation equipment	Machinists	3,500
Garage Attendants Agreement (Illinois)[2]	Retail trade	Teamsters (Ind.)	1,700
General Electric Co., 2 agreements (Evandale, Ohio)	Transportation equipment	Machinists; Auto Workers (Ind.)	5,950
General Electric Co., National Agreement (Interstate)	Electrical products	Electrical Workers (IUE)	70,000
General Telephone Company of Michigan	Communication	Electrical Workers (IBEW)	3,100
Hamilton Industries (Two Rivers, Wis.)	Furniture	Carpenters	1,200
Hammermill Paper Co. (Kaukauna, Wis.)	Paper	Paperworkers	1,200
Houston Sheet Metal Contractors Association (Texas)	Construction	Sheet Metal Workers	1,200
Ingersoll-Rand, Torrington Co. (Connecticut)	Machinery	Auto Workers (Ind.)	1,650
Jacksonville Shipyards, Inc. (Florida)	Transportation equipment	Boilermakers	1,800
Korvettes, Inc. (New York, N.Y.)	Retail trade	Retail Clerks	3,500
Laclede Gas Co. (St. Louis, Mo.)	Utilities	Oil, Chemical and Atomic Workers	1,250
Major Shoe Chain Stores (New York, N.Y.)[2]	Retail trade	Retail, Wholesale and Department Store	1,000
Missouri River Basin Agreement (Interstate)[2]	Construction	Boilermakers	3,300
Monterey Peninsula Hotel and Restaurant Association, Inc. (California)	Hotels	Hotel and Restaurant Employees	2,400
National Football League Management Council (Interstate)	Amusements	National Football League Players Association (Ind.)	1,500
National Elevator Industry, Inc. (Interstate)	Construction	Elevator Constructors	16,000
Presidents' Council of Food, Beverage and Lodging Industries (Oregon)	Restaurants	Hotel and Restaurant Employees	3,850
Retail Meat Cutters[2]	Retail trade	Meat Cutters	1,900
Sears Roebuck and Co. (Seattle, Wash.)	Retail trade	Teamsters (Ind.)	1,800
Stop and Shop Companies, Inc., 2 agreements (New England area)	Retail trade	Retail Clerks	7,000
Summa Corp., Hughes Helicopters Division (California)	Transportation equipment	Carpenters	1,600
Trane Company (La Crosse, Wis.)	Fabricated metal products	Machinists	1,800
TRW, Inc. (Harrisburg, Pa.)	Transportation equipment	National Federation of Independent Unions	1,200

See footnotes at end of table.

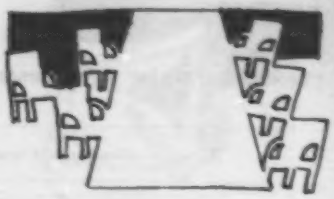
Continued—Major Agreements Expiring Next Month

Employer and location	Industry	Union[1]	Number of workers
Union Camp Corp. (Franklin, Va.)	Paper	Paperworkers; and Firemen and Oilers	1,250
Vornado Corp. (Interstate)	Retail trade	Retail Clerks	7,000
Washington Post Co. (Washington, D.C.)	Printing and publishing	Newspaper Guild	1,000
Western Airlines, Clerical (Interstate)[2]	Air transportation	Air Transport Employees	4,500
Western Union Telegraph Co., 2 agreements (Interstate)	Communication	Telegraph Workers; Communications Workers	10,500
Westinghouse Electric Corp., 6 agreements (Interstate)	Electrical products	Federation of Westinghouse Independent Salaried Unions (Ind.)	11,250
		Electrical Workers (IBEW)	18,450
		Electrical Workers (UE-Ind.)	4,950
		Electrical Workers (IUE)	18,200
Westvaco Corp. (Interstate)	Paper	Paperworkers	1,200
Whirlpool Corp. (Minnesota)	Electrical products	Teamsters (Ind.)	1,650
	Government activity	**Union or employee organization[1]**	
California: Riverside County Supporting Services Unit	Central administration	Public Employees Association of Riverside County (Ind.)	2,200
New York: New York City Transit Authority, Subway-Surface Supervisors	Transportation	Subway-Surface Supervisors Association (Ind.)	3,300
Ohio: Greater Cleveland Regional Transit Authority, Operator's Unit	Transportation	Amalgamated Transit	2,500
Texas: Houston Metropolitan Transit Authority	Transportation	Transport Workers	1,300

[1] Affiliated with AFL-CIO except where noted as independent (Ind.).
[2] Industry area (group of companies signing same contract).

[1] Information is from newspaper reports.

Developments in Industrial Relations



Clothing workers get new contract

Shortly before the expiration date of their agreement, the Clothing Manufacturers Association and the Clothing and Textile Workers agreed to a new 38-month agreement for 70,000 workers in the men's and boys' clothing industry. The new contract provided for a total wage increase of $1.05 an hour—25 cents an hour on October 4, 1982, 30 cents in June 1983, and 50 cents in June 1984. The automatic cost-of-living pay adjustment formula was liberalized to provide for a June 1983 adjustment of 5 cents an hour if the CPI-W rises 4.8 percent from December 1981 to December 1982, plus 1 cent for each additional .5 percent rise. An additional 5 cents will be paid in June 1984 if the index rises 5.4 percent from December 1982 to December 1983, plus 1 cent for each additional .5-percent rise.

Other terms included a 1-percent (of payroll) increase in the employer financing of pensions; establishment of paid leave for service on trial juries; and 6 hours of call-in pay (formerly 5 hours).

United Airlines settles with Machinists union

United Airlines and the Machinists negotiated a 2-year contract to lead off the union's round of bargaining with various air carriers. The accord covered mechanics and food service workers, and was the first one the parties reached in direct negotiations without a mediator in 20 years.

Company president Richard J. Ferris said that the peaceful settlement marked a "new era in labor relations" between the parties. A union official attributed the peaceful settlement to "the condition airlines are in today," referring to problems resulting from deregulation of the industry, the state of the economy, and after-effects of the 1981 strike by air traffic controllers. (The union currently represents 14,000 United employees, compared with 18,600 in 1979.) Both parties agreed that the economic condition of the industry means that it is unlikely that the union's coming settlements with the other carriers would continue the practice of following the lead settlement.

The settlement called for mechanics to receive a 10-percent pay increase, retroactive to November 1981, and an 8-percent increase in November 1982, bringing their pay rate to $15.91 an hour. Food service workers receive 8 percent and 4 percent on the respective dates.

Other terms included termination of the automatic cost-of-living pay adjustment clause (it had yielded 39 cents in increases during the previous agreement); a two-step increase in the pension rate for mechanics, bringing their rate to $29.50 a month (from $27) for each year of credited service and a two-step increase to $20.90 for food service workers; a 30-cent-an-hour increase in shift premiums; a 20-cent-an-hour increase in the premium for mechanics holding two Federal Aviation Administration licenses, bringing it to 85 cents; and improvements in medical, surgical, and dental benefits.

United gained some changes intended to improve productivity, including merging of some job classifications and changes in work schedules and hours. In 1981, United's pilots had agreed to cost-saving changes in a contract that called for pay increases of nearly 30 percent over 26 months. (See *Monthly Labor Review*, November 1981, p. 53.)

Difficulties continue in trucking industry

The Teamsters and the National Automobile Transporters Association agreed to a 3-year contract patterned on the National Master Freight Agreement the union negotiated earlier. (See *Monthly Labor Review*, April 1982, p. 64.)

Meanwhile, the union was encountering difficulties in enforcing the general freight agreement, as some of the covered companies withheld a scheduled April 1982 cost-of-living pay adjustment of 47 cents an hour, plus 25 cents to be applied to maintaining benefits. Generally, these firms said they would not pay the money because it would put them at a competitive disadvantage with companies that had withdrawn from the major employer associations prior to the "national" settlement and were now in the process of settling separately with the union. Reportedly, Trucking Management, Inc., the largest of the associations that signed the national

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"Developments in Industrial Relations" is prepared by George Ruben of the Division of Developments in Labor-Management Relations, Bureau of Labor Statistics, and is largely based on information from secondary sources.

agreement, had only 284 firms in 1982, compared with nearly 500 in 1979.

Some of the companies covered by the master freight contract also were pressing for further concessions in negotiating the supplemental local riders to the master contract.

The difficult economic conditions in the trucking industry were indicated by the demise of Spector-Red Ball Inc., which closed its general freight hauling operations, eliminating 6,500 jobs nationwide. The company attributed the closing to intensive rate discounting resulting from the "depressed economy." The decision came despite an agreement by employees to lend the company 15 percent of their pay. Spector lost $20 million in 1981.

Elsewhere, the Teamsters and Boss Linco Lines, Inc., of Cheektowaga, N.Y., agreed to wage concessions, replacing a voluntary stock-purchase plan instituted in 1981, in which only half of the employees participated. Company president James C. Findlay said the pay concessions had been backed by 95 percent of the workers. Boss Linco, which has terminals in 14 Northeastern States, also has been operating at a loss.

AT&T guarantees jobs

American Telephone & Telegraph Co. and the Communications Workers of America agreed on a broad job and wage protection agreement for the union's members, averting a possible confrontation when the company begins its divestiture of 22 local operating units. The union started pressing for such protection after the January 1982 divestiture announcement, which was part of the settlement of an antitrust action against AT&T initiated by the Federal Government.

Under the worker protection agreement, the 235,000 union members expected to be affected by the shedding of companies are guaranteed to receive AT&T transfer benefits or those of the new firm, whichever is larger and, for 7 years after the divestiture, they are protected against loss of employment, current pay and seniority, changes in the condition of their employment, and reductions in pension, insurance, and other benefits.

CWA President Glenn Watts had pressed for broadened protections for workers because existing protections only applied to transfers within the Bell System. CWA also represents 290,000 workers in the system who will not be affected by the divestitures.

Meanwhile, AT&T was proceeding with plans to reduce the number of outside professional firms managing its two pension funds, despite the possibility that the funds would have to split into a number of funds when the divestiture occurs. AT&T said the process was being continued to put the funds in the best possible shape for the split-up of the system and that the performance of the outside managers, who received $50 million in commissions in 1981, had generally been "just average."

The two funds—one for management and the other for workers—total $36 billion. Prior to October 1980, AT&T had maintained 33 pension funds.

Marine unions seek to aid the industry

In a move to increase job opportunities and to aid the Nation's merchant marine fleet, the Seafarers and the Marine Engineers agreed on principles designed to foster closer cooperation between the two unions. One principle called for the unions to negotiate joint collective bargaining agreements, which would improve labor relations administration and cost efficiency and end jurisdictional conflicts between the unions. Union officials said this principle was impelled by the drastic decline in the merchant fleet resulting primarily from labor cost advantages enjoyed by foreign fleets. The U.S. fleet now consists of 749 vessels, with many of them in need of replacement, compared with 3,000 vessels in 1946.

The unions also agreed to joint training and upgrading programs to increase efficiency and save money; reciprocal operation of benefit funds to enable workers to preserve pension and other service credits when they change jobs, and joint legislative and political efforts to improve the condition of the industry.

The principles apply to 35,000 members of the Seafarers and 3,000 members of the Marine Engineers.

Investment plan offered at Ford

Ford announced a new investment fund for its salaried employees that will increase the money available for financing dealer and consumer purchases of company products. Under the plan, each of the 70,000 employees will be permitted to invest as little as $50 a month in Ford Motor Credit Co. floating-rate demand notes, which will pay interest one-half of a percentage point above the average yield of money market funds in the United States.

Some outside investment advisers viewed the plan as a move to bring more money into the finance subsidiary, whose commercial paper had recently been downgraded by two major credit rating services. However, Ford said that employees had been asking for such a plan and that it had been in preparation for several months.

The plan will be offered to Ford employees represented by the United Auto Workers, if the union approves.

New programs aid laid-off workers at Rockwell

The United Automobile Workers and Rockwell International Corp. announced two new programs to provide jobs for laid-off auto workers. One program gives 2,000 laid-off workers from Rockwell's automotive division preferential hiring rights at the company's aerospace plant in Columbus, Ohio. Rockwell expects to hire about 4,000 workers for the plant to build long-range combat aircraft.

UAW Secretary-Treasurer Raymond Majerus said that the program indicated Rockwell's awareness that "UAW members on layoff from its automotive plants are a very valuable resource for the company to draw upon." UAW President Douglas Fraser also applauded the hiring arrangement and said that he hoped such plans could be instituted at other aerospace firms. The UAW represents workers at Rockwell's aerospace operations, as well as at the automotive parts operations.

The other program will use a $300,000 grant from the Department of Labor to retrain workers laid off from the automobile industry for jobs at Rockwell's plants that will build the long-range aircraft.

The union indicated that the method for selecting the 400 participants in the pilot program—200 from Southwest Michigan and 200 from Ohio—would be worked out with the Department of Labor. This program is intended to provide jobs for laid-off workers, some of whom have been unemployed for many months and have exhausted all of their benefits.

Sugar workers' pay increase delayed 6 months

In Hawaii, sugar and pineapple growers sought contract concessions in separate negotiations with the International Longshoremen's and Warehousemen's union, but only the sugar growers gained cost relief.

The sugar settlement called for the deferral to July 1, 1982, of half of the 10-percent wage increase scheduled for February 1, 1982.

A union official said that the 6-month delay of half the increase would save the growers $365 per employee. Lost money would be restored to the workers if the wholesale price of sugar (19 cents a pound at the time of settlement) rises to 28 cents a pound and holds there for 30 days. Prior to the settlement, the workers earned between $6.69 and $8.62 an hour. During 1981, the sugar growers lost $83.5 million. There also was a $5 rise in the monthly rent paid by workers who live in 1,600 company-owned homes. Existing rents (for example, $35 a month for a two-bedroom unit) had not been increased since 1946.

The union agreed to establish a committee to foster increased productivity and to correct sick leave abuses. Another employer demand, for modification or elimination of incentive pay plans, led to adoption of a provision permitting local units of workers to bargain on the issue, with the international union to be given 30 days notice of any changes.

Despite the pineapple growers' contention that they were unable to compete effectively because the Hawaiian workers' minimum pay of $1,036 a month was far higher than for competitors in other countries, the 4,500 workers represented by the union won a 3-percent wage increase effective February 1, 1982, and a 2-percent increase 6 months later. Other terms of the 1-year contract included $900 annual dental insurance coverage (fomerly $600) and a change permitting nonregular workers to use paid vacation time if they are not offered work because of adverse weather.

Steel workers accept stock for benefits

Wheeling-Pittsburgh Steel Corp. agreed to exchange shares of preferred stock for cost-cutting concessions by 11,000 workers represented by the Steelworkers union. Paul Rusen, director of Steelworkers' District 23, said the union was willing to cooperate because Wheeling-Pittsburgh was making a determined effort to invest in steel and keep its plants operating. Wheeling-Pittsburgh, the Nation's eighth largest producer, reportedly has a long-term debt of $359 million, more than 30 percent of its assets.

Under the accord, scheduled to expire in November 1983, the employees agreed to defer a 15- to 47-cent wage increase scheduled to become effective in August 1982, give up a week of vacation in 1982 and in 1983, and give up 13 paid holidays from April 1982 to February 1984. In return, they will be credited with preferred stock of equal value that will pay dividends of 5 percent. The stock will become available to the employee when he or she leaves the company. Wheeling-Pittsburgh also agreed to establish a training program to prepare union members for greater participation in company operations.

A&P workers reject concessions

The Food and Commercial Workers union rejected wage and work-rule concessions A&P had proposed to help avoid further store closings. The company and union had started national negotiations on concessions in the wake of 400 store closings since last fall that had idled 15,000 members of the union. The rejected company proposal called for a 2-year wage freeze and suspension of certain scheduling restrictions, or a 10-percent pay cut so that labor costs will be "competitive with the industry average."

The union's chief bargainer said the proposal was rejected because it was "extreme" and did not offer employees "even the slightest shred of a guarantee against further reductions in staff or further store closings." A&P said that it would continue to pursue concessions in local negotiations because "we can do it better there."

General Tire to close Ohio plant

More than, 1,000 employees will lose their jobs as a result of General Tire and Rubber Co.'s announced closing of its Akron, Ohio, plant. M.G. O'Neil, chairman and president of the company, said the decision was forced by excess capacity in the tire industry, noting that 14 tire and rubber plants had closed since 1979.

United Rubber Workers President Milan Stone called the move particularly sad in view of the local's effort to save the plant. In 1979, members of Local 9 agreed to a 36-cent-an-hour wage cut and a number of changes in work rules to help General Tire accumulate funds to build a replacement for the 67 year-old facility. (See *Monthly Labor Review*, August 1979, pp. 60–61.)

The savings from the pay cut will be distributed to the workers if the parties are unable to work out a way to keep the plant open before termination of the 6-month notice period required by the 1979 agreement.

Stanford nurses' pay now highest in Nation

Registered nurses at Stanford University Medical Center in California approved a 2-year contract that, union officials said, made them the highest paid nurses in the Nation. Under the contract, a nurse with 5½ years of service in the highest of four skill categories will earn $31,283 a year, effective immediately, and $35,298 beginning March 1, 1983. Nurses in all categories received at least a 10-percent increase immediately and, in 1983, will receive a minimum of 8 percent; the maximum value of the two increases can range up to 31 percent.

Hedy Dumpel, president of the Committee for Recognition of Nursing Achievement, said the union's 1,250 members "may not be ahead in the benefit package but . . . I am sure that our salaries are the highest [in the Nation]."

The nurses' demand for greater recognition of their role in patient treatment was met by establishing a Stanford Committee on Nursing Practice that will give the nurses a direct voice in setting professional standards. The committee of four hospital representatives and four staff nurses will seek ways to better utilize nurses' skills and to promote a more cooperative approach between doctors and nurses in patient treatment.

Supreme Court rules on seniority systems

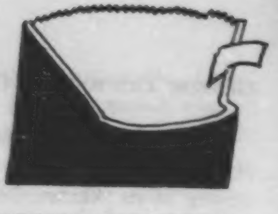
In a case involving American Tobacco Co. operations in Richmond, Va., the Supreme Court held that the immunity from legal challenge granted to bona fide worker seniority systems by the Civil Rights Act of 1964 also applies to systems adopted after passage of the act.

Writing for the five member majority, Justice White said that those who challenge a seniority system must prove that it was established with a deliberate intent to discriminate. Justice White cited Section 703 (h) of the act, which provides that "it shall not be an unlawful employment practice . . . to apply different terms, conditions, or privileges of employment pursuant to a bona fide seniority or merit system . . . provided that such differences are not the result of an intention to discriminate. . . . "

In one of the dissenting opinions, Justice Stevens backed the Fourth Circuit Court of Appeals finding that the lines of progression violated title VII of the act "because they had a disparate impact on protected employees that was not justified by any legitimate business purpose."

The case was remanded to the Fourth Circuit for reconsideration. It originated after American Tobacco Co., in 1968, combined the separate progression systems for black and white workers. John Patterson and two other black employees then filed charges with the Equal Employment Opportunity Commission alleging that American Tobacco Co. and the Tobacco Workers union had engaged in racial discrimination against them in some progression lines within the new system. Robinson's position was backed by the Federal District Court and, on appeal, by the Fourth Circuit, leading to American Tobacco's appeal to the Supreme Court.

Book Reviews



Reshaping adult education

Worklife Transitions: The Adult Learning Connection. By Paul Barton and the National Institute for Work and Learning. New York, McGraw-Hill Book Co., 1982. 196 pp. $14.95.

This book was commissioned by the National Institute for Work and Learning and is the product of an advisory committee (consisting of 29 members from business, organized labor, education, and professional associations) led by Paul Barton, vice president of the National Institute (formerly the National Manpower Institute), who pulled it all together.

Although many persons were involved in discussions and preparation of papers, the result is not the stereotypical camel produced by committee action but it does not flow as smoothly as does a good book written by one author. Nevertheless, it is replete with many provocative as well as sensible suggestions that should be studied by public policymakers, employers, unionists, educators, and others.

The book begins with an excellent foreword by Willard Wirtz, who puts everything into clear perspective. He notes that adult education serves occupational, avocational, and cultural interests through a very large and diverse system composed of private and public institutions and programs. While much is known about adult education, only dimly perceived are the shape and character of the principles that will be required in the coming years to help manage an almost complete transformation of our economic system. The important question explored throughout this volume is what is the proper role for broadly conceived adult education in a situation where the U.S. economy is undergoing an extraordinary and often painful transition from goods producing to one that is service oriented.

In 11 rather brief chapters, the authors outline the adult educational services that are available and describe the extent of participation and what needs to be done to make the system more effective for individuals and society alike. In somewhat more detail, the topics covered include the extent and characteristics of adult educational opportunity as provided by public schools, junior colleges, technical institutes, collegiate institutions, private business and industry, Federal employment and training programs, cooperative extension, professional associations, organized labor, community organizations, free universities, correspondence courses, and private instruction; who participates in such programs and why and who does not and why; who provides information concerning educational opportunities and how; what public support is available; what is offered in business, industry, and government to employees; similarly, what is being offered by trade unions, by colleges and universities, tuition aid policies and programs; the problems and prospects of longer worklife and later retirements; and an excellent final chapter which integrates these themes and spells out specific recommendations. The mere listing of these topics indicates the broad design of the book.

Several themes are emphasized and reemphasized. For one, although much is known about our educational and training system, there is no available statistical information that is collected regularly and consistently. The U.S. Department of Labor has conducted experimental and feasibility studies but to date there is no adequate informational clearinghouse. The book points out that between 38 million and 84 million people are engaged in organized learning—hardly definitive data. For another, the present system appeals more to those who have had some successful experiences in schools than those with little or minimal formal education. More white-collar than blue-collar jobholders use the adult educational system which means that better specific efforts must be made to provide information, counseling, and access for all segments of our population. Also emphasized is the fact that public employment and poverty programs have not facilitated occupational adjustments as much or as well as is required. In all cases, the authors' criticisms are made in a straightforward and reasoned manner.

The last chapter reemphasizes that information about our adult educational system, which might be much more useful to us as transition points in our lifetime, is scattered and incomplete. This, coupled with the fact that we have few qualified mentors or counselors to guide us to the right learning at the right time and from the right sponsor, means that even the present adult educational system is not as productive as it could be. What then needs to be done? Suggestions for improvement include paid educational leaves akin to sabbaticals; adult education entitlements or grants; encouraging more private investments in training; developing a national occupational change adjustment program; offering unemployed workers educational and skill improvement programs; encouraging a sincere commitment to adult education by educators; and establishing Work-Education Councils composed of employers, unions, educators, local governments, and others in every community of the Nation. Truly, an ambitious, but not impossible, agenda.

The authors have essayed a task of considerable magnitude where they attempt to prescribe the adult educational/training model for our complex society/economy of the future. They have presented the important issues relating to education and work not only for entry into work but over a lifetime of work. There is much to think about, written in a clear style, devoid of jargon and polemics.

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Union membership concentration

Trade Unions in the Developed Economies. Edited by E. Owen Smith. New York, St. Martin's Press, 1981. 218 pp., bibliography. $32.50.

This slim volume discusses trade unions of seven developed countries—Australia, France, Japan, Sweden, West Germany, the United States, and the United Kingdom—and includes sections on union growth, structure, and policies. Several of the authors have had firsthand knowledge of their subject matter, for example, the chapter on Swedish trade unions, was written by T. L. Johnston, the author of an important study on collective bargaining in that country; the chapter on Australian unions was authored by two Melbourne academicians, L. Cupper and J. M. Hearn. An introduction by the editor of this book, E. Owen Smith, summarizes the contributions; Smith also contributed the chapters on the United Kingdom and West Germany.

It is not clear why the seven particular countries were selected for discussion. Each country's per capita income was probably a key factor, but several other European countries (the Netherlands, Belgium, and Austria, for example) exceed that of the United Kingdom. Presumably, the authors preferred to describe trade unions in different political and economic settings and therefore selected certain countries in order to present the reader with a variety of patterns.

There is very little new material presented in the chapter on American trade unions. The discussion on the American labor movement's failure to grow during the 1970's was well done. It is disappointing, however, that the section on union structure did not include a discussion on "intermediate bodies" within national unions. The 5-page section on trade-union policy began with Robert Hoxie's classification of unions and then explained "business unionism" and the absence of a labor party in the United States. There is little in the chapter regarding the economic impact of American unions, although some discussion was included in the introductory chapter.

If reasonably informed readers fail to learn much from this book regarding trade unions in their own countries, they will, I think, profit from the essays on the other countries. The discussion of the French trade unions' membership figures was particularly edifying because for many years this reviewer had read that there were "problems" in determining these figures. Now, at last, there is a brief explanation of the difficulties. Similarly, the chapter on Japan includes a balanced account of the strengths and weaknesses of the seniority-linked remuneration system and the lifetime employment practices.

The introductory chapter reminded us that "trade unions are very important" and that policy prescriptions involving them should be based on accurate information. Although the contributors to this volume have succeeded in supplying accurate information, this reviewer is disappointed that some effort was not made to interpret and explain the varying growth structure and policies of trade unions in the developed countries.

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NOTES ON CURRENT LABOR STATISTICS

This section of the *Review* presents the principal statistical series collected and calculated by the Bureau of Labor Statistics. A brief introduction to each group of tables provides definitions, notes on the data, sources, and other material usually found in footnotes.

Readers who need additional information are invited to consult the BLS regional offices listed on the inside front cover of this issue of the *Review*. Some general notes applicable to several series are given below.

Seasonal adjustment. Certain monthly and quarterly data are adjusted to eliminate the effect of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might otherwise mask short-term movements of the statistical series. Tables containing these data are identified as "seasonally adjusted." Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years.

Seasonally adjusted labor force data in tables 2–7 were revised in the March 1982 issue of the *Review* to reflect experience through 1981. The original estimates also were revised to 1970 to reflect 1980 census population controls.

Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are being seasonally adjusted with a new procedure called X-11/ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada Catalogue No. 12-564E, February 1980). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. Revisions of historical data continue to be made only at the end of each calendar year.

Annual revision of the seasonally adjusted payroll data in tables 11, 14, and 16 begins with the August 1980 issue using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 30 and 31 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

Adjustments for price changes. Some data are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of $3 and a current price index number of 150, where 1967 = 100, the hourly rate expressed in 1967 dollars is $2 ($3/150 × 100 = $2). The resulting values are described as "real," "constant," or "1967" dollars.

Availability of information. Data that supplement the tables in this section are published by the Bureau of Labor Statistics in a variety of sources. Press releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule given below. The *BLS Handbook of Labor Statistics*, Bulletin 2070, provides more detailed data and greater historical coverage for most of the statistical series presented in the *Monthly Labor Review*. More information from the household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau. Historically, comparable information from the establishment survey is published in two comprehensive data books—*Employment and Earnings, United States* and *Employment and Earnings, States and Areas*, and their annual supplements. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

Symbols

p = preliminary. To improve the timeliness of some series, preliminary figures are issued based on representative but incomplete returns.

r = revised. Generally, this revision reflects the availability of later data but may also reflect other adjustments.

n.e.c. = not elsewhere classified.

Schedule of release dates for major BLS statistical series

Series	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	June 4	May	July 2	June	1–11
Producer Price Index	June 11	May	July 16	June	23–27
Consumer Price Index	June 22	May	July 23	June	19–22
Real earnings	June 22	May	July 23	June	12–17
Productivity and costs:					
Nonfarm business and manufacturing	....	....	July 29	2nd quarter	28–31
Major collective bargaining settlements	....	....	July 29	1st half	35–36

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 60,000 households,selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

Definitions

Employed persons are (1) those who worked for pay any time during the week which includes the 12th day of the month or who worked unpaid for 15 hours or more in a family-operated enterprise and (2) those who were temporarily absent from their regular jobs because of illness, vacation, industrial dispute, or similar reasons. A person working at more than one job is counted only in the job at which he or she worked the greatest number of hours.

Unemployed persons are those who did not work during the survey week, but were available for work except for temporary illness and had looked for jobs within the preceding 4 weeks. Persons who did not look for work because they were on layoff or waiting to start new jobs within the next 30 days are also counted among the unemployed. The **unemployment rate** represents the number unemployed as a percent of the civilian labor force.

The **civilian labor force** consists of all employed or unemployed persons in the civilian noninstitutional population; the **total labor force** includes military personnel. Persons **not in the labor force** are those not classified as employed or unemployed; this group includes persons retired, those engaged in their own housework, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job market factors, and those who are voluntarily idle. The **noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy.

Full-time workers are those employed at least 35 hours a week; **part-time workers** are those who work fewer hours. Workers on part-time schedules for economic reasons (such as slack work, terminating or starting a job during the week, material shortages, or inability to find full-time work) are among those counted as being on full-time status, under the assumption that they would be working full time if conditions permitted. The survey classifies unemployed persons in full-time or part-time status by their reported preferences for full-time or part-time work.

Notes on the data

From time to time, and especially after a decennial census, adjustments are made in the Current Population Survey figures to correct for estimating errors during the preceding years. These adjustments affect the comparability of historical data presented in table 1. A description of these adjustments and their effect on the various data series appear in the Explanatory Notes of *Employment and Earnings.*

Data in tables 2–7 are seasonally adjusted, based on the seasonal experience through December 1981.

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950–81

[Numbers in thousands]

Year	Total noninstitutional population	Total labor force		Civilian labor force						Not in labor force
					Employed			Unemployed		
		Number	Percent of population	Total	Total	Agriculture	Nonagricultural industries	Number	Percent of labor force	
1950	106,645	63,858	59.9	62,208	58,918	7,160	51,758	3,288	5.3	42,787
1955	112,732	68,072	60.4	65,023	62,170	6,450	55,722	2,852	4.4	44,660
1960	119,759	72,142	60.2	69,628	65,778	5,458	60,318	3,852	5.5	47,617
1964	127,224	75,830	59.6	73,091	69,305	4,523	64,782	3,786	5.2	51,394
1965	129,236	77,178	59.7	74,455	71,088	4,361	66,726	3,366	4.5	52,058
1966	131,180	78,893	60.1	75,770	72,895	3,979	68,915	2,875	3.8	52,288
1967	133,319	80,793	60.6	77,347	74,372	3,844	70,527	2,975	3.8	52,527
1968	135,562	82,272	60.7	78,737	75,920	3,817	72,103	2,817	3.6	53,291
1969	137,841	84,240	61.1	80,734	77,902	3,606	74,296	2,832	3.5	53,602
1970	140,272	85,959	61.3	82,771	78,678	3,463	75,215	4,093	4.9	54,315
1971	143,033	87,198	61.0	84,382	79,367	3,394	75,972	5,016	5.9	55,834
1972	146,574	89,484	61.1	87,034	82,153	3,484	78,669	4,882	5.6	57,091
1973	149,423	91,756	61.4	89,429	85,064	3,470	81,594	4,365	4.9	57,667
1974	152,349	94,179	61.8	91,949	86,794	3,515	83,279	5,156	5.6	58,171
1975	155,333	95,955	61.8	93,775	85,846	3,408	82,438	7,929	8.5	59,377
1976	158,294	98,302	62.1	96,158	88,752	3,331	85,421	7,406	7.7	59,991
1977	161,166	101,142	62.8	99,009	92,017	3,283	88,734	6,991	7.1	60,025
1978	164,027	104,368	63.6	102,251	96,048	3,387	92,661	6,202	6.1	59,659
1979	166,951	107,050	64.1	104,962	98,824	3,347	95,477	6,137	5.8	59,900
1980	169,848	109,042	64.2	106,940	99,303	3,364	95,938	7,637	7.1	60,806
1981	172,272	110,812	64.3	108,670	100,397	3,368	97,030	8,273	7.6	61,460

2. Employment status by sex, age, and race, seasonally adjusted

[Numbers in thousands]

Employment status	Annual average		1981									1982			
	1980	1981	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
TOTAL															
Total noninstitutional population[1]	169,848	172,272	171,770	171,956	172,172	172,385	172,559	172,758	172,966	173,155	173,330	173,495	173,657	173,843	174,020
Total labor force	109,042	110,812	110,906	111,420	110,565	110,827	110,978	110,659	111,170	111,430	111,348	111,039	111,333	111,521	111,824
Civilian noninstitutional population[1]	167,745	170,130	169,641	169,829	170,042	170,246	170,399	170,593	170,809	170,996	171,166	171,335	171,489	171,667	171,844
Civilian labor force	106,940	108,670	108,777	109,293	108,434	108,688	108,818	108,494	109,012	109,272	109,184	108,879	109,165	109,346	109,648
Employed	99,303	100,397	100,878	101,045	100,430	100,864	100,840	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340
Agriculture	3,364	3,368	3,470	3,405	3,348	3,342	3,404	3,358	3,378	3,372	3,209	3,411	3,373	3,349	3,309
Nonagricultural industries	95,938	97,030	97,408	97,640	97,082	97,522	97,436	96,900	96,965	96,800	96,404	96,170	96,217	96,144	96,032
Unemployed	7,637	8,273	7,899	8,248	8,004	7,824	7,978	8,236	8,669	9,100	9,571	9,298	9,575	9,854	10,307
Unemployment rate	7.1	7.6	7.3	7.5	7.4	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4
Not in labor force	60,806	61,460	60,864	60,536	61,608	61,558	61,581	62,099	61,797	61,724	61,982	62,456	62,324	62,321	62,197
Men, 20 years and over															
Civilian noninstitutional population[1]	71,138	72,419	72,142	72,251	72,350	72,472	72,559	72,670	72,795	72,921	73,020	73,120	73,209	73,287	73,392
Civilian labor force	56,455	57,197	57,157	57,479	57,084	57,172	57,250	57,262	57,355	57,459	57,665	57,368	57,448	57,554	57,730
Employed	53,101	53,582	53,820	53,884	53,597	53,874	53,791	53,693	53,504	53,354	53,122	53,047	53,097	53,006	52,988
Agriculture	2,396	2,384	2,419	2,390	2,379	2,383	2,422	2,383	2,413	2,382	2,311	2,390	2,386	2,377	2,382
Nonagricultural industries	50,706	51,199	51,401	51,494	51,218	51,491	51,369	51,310	51,091	50,972	50,811	50,657	50,711	50,629	50,606
Unemployed	3,353	3,615	3,337	3,595	3,487	3,298	3,459	3,569	3,851	4,105	4,543	4,322	4,351	4,548	4,742
Unemployment rate	5.9	6.3	5.8	6.3	6.1	5.8	6.0	6.2	6.7	7.1	7.9	7.5	7.6	7.9	8.2
Not in labor force	14,683	15,222	14,985	14,772	15,265	15,300	15,309	15,408	15,440	15,462	15,355	15,752	15,761	15,733	15,662
Women, 20 years and over															
Civilian noninstitutional population[1]	80,065	81,497	81,193	81,308	81,434	81,561	81,671	81,792	81,920	82,038	82,151	82,260	82,367	82,478	82,591
Civilian labor force	41,106	42,485	42,332	42,608	42,581	42,682	42,666	42,344	42,831	42,987	42,888	42,868	43,031	43,243	43,301
Employed	38,492	39,590	39,536	39,737	39,757	39,810	39,841	39,426	39,814	39,878	39,713	39,764	39,744	39,807	39,715
Agriculture	584	604	609	605	585	590	609	608	596	635	572	649	628	636	601
Nonagricultural industries	37,907	38,986	38,927	39,132	39,172	39,220	39,232	38,818	39,218	39,243	39,141	39,115	39,116	39,172	39,114
Unemployed	2,615	2,895	2,796	2,871	2,824	2,872	2,825	2,918	3,017	3,109	3,175	3,104	3,286	3,435	3,586
Unemployment rate	6.4	6.8	6.6	6.7	6.6	6.7	6.6	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3
Not in labor force	38,959	39,012	38,861	38,700	38,853	38,879	39,005	39,448	39,089	39,051	39,263	39,392	39,336	39,235	39,290
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	16,543	16,214	16,305	16,270	16,249	16,213	16,169	16,131	16,093	16,037	15,995	15,955	15,913	15,902	15,861
Civilian labor force	9,378	8,988	9,288	9,206	8,759	8,834	8,902	8,888	8,826	8,826	8,631	8,643	8,686	8,549	8,616
Employed	7,710	7,225	7,522	7,424	7,076	7,180	7,208	7,139	7,025	6,940	6,778	6,771	6,748	6,679	6,637
Agriculture	385	380	442	410	384	369	373	367	369	355	326	373	359	336	326
Nonagricultural industries	7,325	6,845	7,080	7,014	6,692	6,811	6,835	6,772	6,656	6,585	6,452	6,398	6,389	6,343	6,311
Unemployed	1,669	1,763	1,766	1,782	1,683	1,654	1,694	1,749	1,801	1,886	1,853	1,872	1,938	1,870	1,979
Unemployment rate	17.8	19.6	19.0	19.4	19.2	18.7	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0
Not in labor force	7,165	7,226	7,017	7,064	7,490	7,379	7,267	7,243	7,267	7,211	7,364	7,312	7,227	7,353	7,245
White															
Civilian noninstitutional population[1]	146,122	147,908	147,530	147,670	147,804	147,976	148,144	148,370	148,562	148,631	148,755	148,842	148,855	149,132	149,249
Civilian labor force	93,600	95,052	95,190	95,666	94,887	95,126	95,163	94,884	95,365	95,535	95,329	95,120	95,333	95,508	96,015
Employed	87,715	88,709	89,071	89,237	88,799	89,170	89,221	88,628	88,734	88,498	88,010	87,955	87,989	87,956	87,989
Unemployed	5,884	6,343	6,119	6,429	6,088	5,956	5,942	6,256	6,631	7,037	7,319	7,165	7,344	7,552	8,026
Unemployment rate	6.3	6.7	6.4	6.7	6.4	6.3	6.2	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4
Not in labor force	52,522	52,856	52,340	52,004	52,917	52,850	52,981	53,486	53,197	53,096	53,426	53,722	53,522	53,624	53,234
Black															
Civilian noninstitutional population[1]	17,824	18,219	18,137	18,170	18,206	18,239	18,266	18,297	18,333	18,362	18,392	18,423	18,450	18,480	18,511
Civilian labor force	10,865	11,086	11,126	11,126	11,033	10,971	11,069	11,134	11,188	11,207	11,226	11,188	11,205	11,217	11,170
Employed	9,313	9,355	9,488	9,460	9,310	9,338	9,267	9,319	9,313	9,321	9,279	9,314	9,265	9,197	9,111
Unemployed	1,553	1,731	1,638	1,666	1,723	1,633	1,802	1,815	1,875	1,886	1,947	1,874	1,939	2,020	2,058
Unemployment rate	14.3	15.6	14.7	15.0	15.6	14.9	16.3	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4
Not in labor force	6,959	7,133	7,011	7,044	7,173	7,268	7,197	7,163	7,145	7,155	7,166	7,235	7,245	7,263	7,341

[1] As in table 1, population figures are not seasonally adjusted.

3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1981									1982			
	1980	1981	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
CHARACTERISTIC															
Total employed, 16 years and over	99,303	100,397	100,878	101,045	100,430	100,864	100,840	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340
Men	57,186	57,397	57,792	57,793	57,279	57,640	57,551	57,471	57,266	57,051	56,725	56,629	56,658	56,472	56,401
Women	42,117	43,000	43,086	43,252	43,151	43,224	43,289	42,787	43,077	43,121	42,888	42,952	42,932	43,020	42,940
Married men, spouse present	39,004	38,882	39,186	39,120	38,930	38,961	38,981	38,855	38,746	38,553	38,342	38,234	38,255	38,181	38,142
Married women, spouse present	23,532	23,915	23,979	24,192	24,108	24,150	24,043	23,826	23,874	23,820	23,881	23,744	23,727	23,900	23,831
OCCUPATION															
White-collar workers	51,882	52,949	52,855	53,016	52,957	52,907	53,141	52,908	53,199	53,086	53,084	52,836	52,841	52,763	53,177
Professional and technical	15,968	16,420	16,178	16,093	16,410	16,364	16,621	16,598	16,681	16,657	16,774	16,803	16,612	16,659	16,944
Managers and administrators, except farm	11,138	11,540	11,616	11,488	11,411	11,578	11,460	11,533	11,616	11,461	11,424	11,091	11,253	11,311	11,501
Salesworkers	6,303	6,425	6,290	6,562	6,513	6,373	6,490	6,441	6,400	6,418	6,450	6,520	6,544	6,637	6,503
Clerical workers	18,473	18,564	18,771	18,873	18,623	18,592	18,570	18,336	18,502	18,550	18,436	18,423	18,432	18,155	18,229
Blue-collar workers	31,452	31,261	31,885	31,796	31,538	31,580	31,611	31,266	30,953	30,683	30,344	30,203	30,309	30,416	29,924
Craft and kindred workers	12,787	12,662	12,825	12,911	12,749	12,787	12,724	12,514	12,446	12,411	12,446	12,370	12,454	12,511	12,492
Operatives, except transport	10,565	10,540	10,891	10,716	10,703	10,719	10,658	10,524	10,410	10,220	10,169	9,966	9,955	9,860	9,688
Transport equipment operatives	3,531	3,476	3,483	3,466	3,493	3,526	3,530	3,506	3,580	3,438	3,368	3,415	3,503	3,397	3,400
Nonfarm laborers	4,567	4,583	4,686	4,703	4,593	4,548	4,699	4,722	4,517	4,614	4,361	4,451	4,397	4,648	4,343
Service workers	13,228	13,438	13,468	13,470	13,214	13,526	13,282	13,391	13,525	13,670	13,639	13,709	13,612	13,526	13,555
Farmworkers	2,741	2,749	2,826	2,748	2,710	2,727	2,753	2,743	2,770	2,802	2,860	2,817	2,787	2,710	2,623
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,425	1,464	1,560	1,499	1,437	1,495	1,501	1,461	1,502	1,436	1,352	1,377	1,426	1,416	1,423
Self-employed workers	1,642	1,638	1,661	1,654	1,664	1,593	1,638	1,643	1,631	1,641	1,602	1,674	1,596	1,644	1,664
Unpaid family workers	297	286	286	235	263	244	258	256	261	321	228	380	359	277	270
Nonagricultural industries:															
Wage and salary workers	88,525	89,543	89,913	90,402	89,508	89,971	89,995	89,376	89,460	89,238	88,991	88,759	88,586	88,526	88,322
Government	15,912	15,689	15,885	15,776	15,707	15,637	15,526	15,475	15,491	15,397	15,585	15,578	15,527	15,492	15,453
Private industries	72,612	73,853	74,028	74,626	73,801	74,334	74,469	73,901	73,969	73,841	73,406	73,181	73,059	73,034	72,869
Private households	1,192	1,208	1 249	1,192	1,177	1,216	1,259	1,102	1,162	1,204	1,291	1,249	1,161	1,225	1,192
Other industries	71,420	72,645	72,779	73,434	72,624	73,118	73,210	72,799	72,807	72,637	72,115	71,932	71,898	71,809	71,677
Self-employed workers	7,000	7,097	7,150	6,968	7,128	7,071	7,103	7,217	7,152	7,141	7,057	6,971	7,055	7,126	7,264
Unpaid family workers	413	380	325	356	376	389	387	399	451	425	410	410	408	434	413
PERSONS AT WORK [1]															
Nonagricultural industries	90,209	91,377	91,094	91,745	91,500	92,532	91,569	90,878	91,384	91,323	90,922	90,125	90,892	90,548	90,596
Full-time schedules	73,590	74,339	74,259	74,871	74,693	75,620	74,467	73,794	73,886	73,915	73,360	72,803	73,028	72,649	72,335
Part time for economic reasons	4,064	4,499	4,200	4,264	4,033	4,374	4,350	4,656	5,009	5,026	5,288	5,071	5,563	5,717	5,834
Usually work full time	1,714	1,738	1,593	1,657	1,485	1,680	1,729	1,759	2,006	1,945	2,121	1,783	2,193	2,237	2,223
Usually work part time	2,350	2,761	2,607	2,607	2,548	2,694	2,621	2,897	3,003	3,081	3,167	3,287	3,370	3,480	3,611
Part time for noneconomic reasons	12,555	12,539	12,635	12,610	12,774	12,538	12,752	12,428	12,489	12,382	12,274	12,251	12,300	12,183	12,427

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial disputes.

4. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1981									1982			
	1980	1981	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
CHARACTERISTIC															
Total, 16 years and over	7.1	7.6	7.3	7.5	7.4	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4
Men, 20 years and over	5.9	6.3	5.8	6.3	6.1	5.8	6.0	6.2	6.7	7.1	7.9	7.5	7.6	7.9	8.2
Women, 20 years and over	6.4	6.8	6.6	6.7	6.6	6.7	6.6	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3
Both sexes, 16 to 19 years	17.8	19.6	19.0	19.4	19.2	18.7	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0
White, total	6.3	6.7	6.4	6.7	6.4	6.3	6.2	6.8	7.0	7.4	7.7	7.5	7.7	7.9	8.4
Men, 20 years and over	5.3	5.6	5.2	5.6	5.3	5.0	5.2	5.5	5.9	6.4	6.9	6.6	6.7	7.0	7.3
Women, 20 years and over	5.6	5.9	5.7	5.9	5.7	5.8	5.5	5.9	6.1	6.3	6.4	6.3	6.6	6.9	7.2
Both sexes, 16 to 19 years	15.5	17.3	17.0	17.5	16.8	16.4	16.1	17.2	17.7	19.0	19.0	19.6	20.0	19.0	20.8
Black, total	14.3	15.6	14.7	15.0	15.6	14.9	16.3	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4
Men, 20 years and over	12.4	13.5	12.1	13.0	13.7	12.7	13.6	14.5	14.7	15.5	16.5	16.3	16.0	16.0	16.9
Women, 20 years and over	11.9	13.4	12.9	13.1	13.3	13.1	13.8	14.0	13.9	13.6	14.1	13.3	14.5	15.4	15.6
Both sexes, 16 to 19 years	38.5	41.4	40.2	36.9	40.9	40.0	40.0	40.8	45.6	44.1	42.2	41.2	42.3	46.0	48.1
Married men, spouse present	4.2	4.3	3.8	4.0	4.2	3.9	4.0	4.4	4.8	5.2	5.7	5.3	5.3	5.5	6.0
Married women, spouse present	5.8	6.0	5.9	5.8	5.7	5.7	5.5	6.0	6.1	6.5	6.6	6.2	7.0	7.1	7.8
Women who maintain families	9.2	10.4	9.9	10.4	10.7	11.2	10.1	10.7	10.6	10.8	10.5	10.4	10.2	10.6	11.5
Full-time workers	6.9	7.3	6.9	7.1	7.1	6.8	6.9	7.3	7.7	8.1	8.7	8.4	8.5	8.9	9.2
Part-time workers	8.8	9.4	9.2	9.6	9.2	9.3	9.6	9.6	9.5	10.2	9.2	9.6	10.8	10.0	10.9
Unemployed 15 weeks and over	1.7	2.1	2.0	2.0	2.2	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.5	2.7	2.7
Labor force time lost[1]	7.9	8.5	8.2	8.6	7.9	7.9	7.9	8.5	9.1	9.5	10.1	10.0	9.8	10.4	10.4
OCCUPATION															
White-collar workers	3.7	4.0	4.0	4.0	3.9	4.0	3.9	4.1	4.1	4.2	4.5	4.2	4.6	4.8	4.9
Professional and technical	2.5	2.8	3.1	2.8	2.8	2.8	2.5	2.8	2.6	2.7	3.4	2.9	3.1	3.2	3.2
Managers and administrators, except farm	2.4	2.7	2.4	2.6	2.7	2.6	2.7	2.7	2.8	3.0	3.1	2.7	3.1	3.0	3.3
Salesworkers	4.4	4.6	4.2	4.6	4.3	4.9	4.7	5.0	4.9	5.0	4.9	4.5	4.8	5.8	5.6
Clerical workers	5.3	5.7	5.6	5.6	5.4	5.7	5.7	5.8	6.0	6.0	6.2	6.3	6.7	6.9	7.2
Blue-collar workers	10.0	10.3	9.7	9.9	9.8	9.5	9.5	10.2	10.9	11.8	12.7	12.5	12.5	12.9	13.7
Craft and kindred workers	6.6	7.5	6.8	7.2	7.1	6.9	7.0	7.7	8.3	8.5	9.3	9.0	8.4	9.1	9.6
Operatives, except transport	12.2	12.2	11.6	11.8	11.1	11.1	11.1	11.6	12.8	14.1	15.5	15.4	15.4	15.9	16.9
Transport equipment operatives	8.8	8.7	8.1	8.2	8.1	7.3	8.0	8.7	8.0	10.4	10.5	10.2	10.3	10.4	10.7
Nonfarm laborers	14.6	14.7	14.0	13.5	14.7	14.4	13.2	14.6	15.6	16.0	16.9	16.9	17.9	17.9	19.2
Service workers	7.9	8.9	8.5	9.4	8.9	8.0	8.9	9.0	9.3	9.7	9.6	9.2	9.8	10.2	11.1
Farmworkers	4.6	5.3	3.9	5.2	6.2	4.8	5.4	4.0	6.2	6.2	6.4	6.9	4.9	5.4	5.8
INDUSTRY															
Nonagricultural private wage and salary workers[2]	7.4	7.7	7.3	7.7	7.4	7.2	7.3	7.7	8.1	8.4	9.1	8.8	9.0	9.5	9.9
Construction	14.1	15.6	14.5	15.7	16.1	15.2	16.2	16.3	17.6	17.8	18.1	18.7	18.1	17.9	19.4
Manufacturing	8.5	8.3	7.6	7.8	7.4	7.3	7.0	7.9	8.6	9.4	11.0	10.4	10.6	10.8	11.3
Durable goods	8.9	8.2	7.5	7.4	7.1	7.1	6.5	7.7	8.6	9.5	11.8	11.0	11.3	10.8	11.9
Nondurable goods	7.9	8.4	7.8	8.6	7.9	7.6	7.9	8.3	8.6	9.3	9.6	9.5	9.5	10.8	10.5
Transportation and public utilities	4.9	5.2	5.5	5.7	4.9	4.1	4.8	4.2	4.8	5.5	6.0	6.4	5.9	5.6	7.0
Wholesale and retail trade	7.4	8.1	7.5	8.3	7.7	7.9	7.9	8.5	8.4	8.6	8.9	8.7	9.0	10.3	10.1
Finance and service industries	5.3	5.9	5.8	5.8	5.8	5.7	5.7	6.0	6.2	6.1	6.4	5.9	6.5	6.9	7.0
Government workers	4.1	4.7	4.7	4.7	4.6	4.6	4.5	4.7	4.7	5.2	5.0	4.8	5.2	4.9	5.3
Agricultural wage and salary workers	11.0	12.1	9.4	11.0	13.3	10.7	12.0	11.0	13.4	14.1	14.8	16.2	12.8	14.0	14.6

[1] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

[2] Includes mining, not shown separately.

5. Unemployment rates, by sex and age, seasonally adjusted

Sex and age	Annual average		1981									1982			
	1980	1981	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
Total, 16 years and over	7.1	7.6	7.3	7.5	7.4	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4
16 to 19 years	17.8	19.6	19.0	19.4	19.2	18.7	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0
16 to 17 years	20.0	21.4	21.6	21.3	22.6	19.8	20.8	21.4	21.5	22.6	21.9	21.9	22.7	22.7	24.6
18 to 19 years	16.2	18.4	17.2	17.7	17.5	17.8	17.6	18.5	20.0	20.5	21.2	21.3	22.0	21.3	21.9
20 to 24 years	11.5	12.3	12.0	12.6	12.1	11.5	12.1	12.3	12.7	13.0	13.5	13.5	14.1	14.2	14.7
25 years and over	5.1	5.4	5.1	5.2	5.3	5.2	5.2	5.4	5.7	6.0	6.5	6.3	6.4	6.8	7.0
25 to 54 years	5.5	5.8	5.4	5.6	5.6	5.5	5.5	5.8	6.2	6.5	6.9	6.7	6.8	7.3	7.4
55 years and over	3.3	3.6	3.4	3.4	3.5	3.5	3.5	3.8	3.8	3.8	4.1	4.2	4.3	4.6	5.0
Men, 16 years and over	6.9	7.4	6.9	7.3	7.2	6.7	7.1	7.3	7.7	8.3	9.0	8.6	8.7	9.0	9.4
16 to 19 years	18.3	20.1	19.5	20.0	20.0	18.8	19.8	19.9	20.1	21.8	22.3	22.1	22.5	23.5	24.4
16 to 17 years	20.4	22.0	22.5	22.3	24.0	19.9	21.5	21.5	21.1	22.7	22.6	23.0	23.0	24.3	24.7
18 to 19 years	16.7	18.8	17.4	18.0	18.2	17.9	18.3	18.7	19.3	21.0	22.2	21.4	22.1	22.9	24.3
20 to 24 years	12.5	13.2	13.0	13.8	12.9	11.6	12.9	13.1	13.8	14.4	14.8	14.9	15.4	15.7	16.0
25 years and over	4.8	5.1	4.6	4.7	5.0	4.7	4.9	5.0	5.5	5.8	6.5	6.3	6.3	6.6	6.9
25 to 54 years	5.1	5.5	4.9	5.1	5.2	5.0	5.2	5.5	5.9	6.3	6.9	6.7	6.7	7.1	7.2
55 years and over	3.3	3.5	3.2	3.4	3.4	3.4	3.4	3.5	3.7	3.7	4.4	4.3	4.2	4.8	5.1
Women, 16 years and over	7.4	7.9	7.7	7.8	7.7	7.8	7.7	8.0	8.2	8.4	8.5	8.4	8.9	9.0	9.4
16 to 19 years	17.2	19.0	18.4	18.7	18.4	18.6	18.2	19.5	20.7	20.9	20.5	21.2	22.1	20.1	21.3
16 to 17 years	19.6	20.7	20.5	20.2	21.1	19.7	20.0	21.2	21.9	22.5	21.1	20.6	22.5	20.8	24.5
18 to 19 years	15.6	17.9	17.1	17.4	16.8	17.7	16.9	18.3	20.6	19.9	20.0	21.1	21.9	19.6	19.4
20 to 24 years	10.4	11.2	10.9	11.2	11.2	11.3	11.1	11.4	11.5	11.3	12.0	11.9	12.7	12.6	13.3
25 years and over	5.5	5.9	5.7	5.8	5.7	5.8	5.6	6.0	6.1	6.4	6.4	6.3	6.5	7.0	7.2
25 to 54 years	6.0	6.3	6.1	6.4	6.1	6.1	6.0	6.3	6.5	6.8	6.9	6.7	7.0	7.6	7.7
55 years and over	3.2	3.8	3.7	3.4	3.5	3.7	3.7	4.3	4.0	3.8	3.7	4.1	4.3	4.3	4.8

6. Unemployed persons, by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	1981									1982			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
NUMBER OF UNEMPLOYED													
Lost last job	3,958	4,032	4,173	3,867	4,106	4,426	4,573	4,905	5,343	5,206	5,153	5,622	5,906
On layoff	1,303	1,357	1,302	1,225	1,276	1,452	1,631	1,826	2,042	1,860	1,740	1,828	1,946
Other job losers	2,655	2,675	2,871	2,642	2,830	2,974	2,942	3,079	3,301	3,345	3,413	3,794	3,959
Left last job	903	1,004	896	926	879	921	976	916	923	835	964	885	937
Reentered labor force	2,044	2,106	2,039	2,078	2,034	2,058	2,178	2,339	2,244	2,079	2,277	2,240	2,385
Seeking first job	988	956	973	940	971	977	1,002	986	1,021	1,056	1,130	1,044	1,081
PERCENT DISTRIBUTION													
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	50.1	49.8	51.6	49.5	51.4	52.8	52.4	53.6	56.1	56.7	54.3	57.4	57.4
On layoff	16.5	16.8	16.1	15.7	16.0	17.3	18.7	19.9	21.4	20.3	18.3	18.7	18.9
Other job losers	33.6	33.0	35.5	33.8	35.4	35.5	33.7	33.6	34.6	36.5	35.9	38.7	38.5
Job leavers	11.4	12.4	11.1	11.9	11.0	11.0	11.2	10.0	9.7	9.1	10.2	9.0	9.1
Reentrants	25.9	26.0	25.2	26.6	25.5	24.6	25.0	25.5	23.5	22.7	24.0	22.9	23.0
New entrants	12.5	11.8	12.0	12.0	12.2	11.7	11.5	10.9	10.7	11.5	11.6	10.7	10.5
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE													
Job losers	3.7	3.7	3.8	3.6	3.8	4.1	4.2	4.5	4.9	4.8	4.7	5.1	5.4
Job leavers	.8	.9	.8	.9	.8	.8	.9	.8	.8	.8	.9	.8	.9
Reentrants	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.1	1.9	2.1	2.1	2.2
New entrants	.9	.9	.9	.9	.9	.9	.9	.9	.9	1.0	1.0	1.0	1.0

7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1981									1982			
	1980	1981	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
Less than 5 weeks	3,295	3,449	3,189	3,378	3,303	3,323	3,326	3,529	3,707	3,852	4,037	3,852	3,789	3,825	3,958
5 to 14 weeks	2,470	2,539	2,472	2,606	2,423	2,312	2,469	2,585	2,686	2,882	3,016	3,068	3,052	3,078	3,304
15 weeks and over	1,871	2,285	2,187	2,231	2,363	2,170	2,217	2,248	2,292	2,364	2,372	2,399	2,724	2,954	3,015
15 to 26 weeks	1,052	1,122	1,048	1,061	1,227	1,096	1,078	1,146	1,166	1,229	1,189	1,210	1,445	1,605	1,508
27 weeks and over	820	1,162	1,139	1,170	1,136	1,074	1,139	1,102	1,126	1,135	1,183	1,190	1,278	1,349	1,507
Average (mean) duration, in weeks	11.9	13.7	13.7	13.3	14.3	14.1	14.3	13.7	13.6	13.1	12.8	13.5	14.1	13.9	14.2

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by 166,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

Definitions

Employed persons are all persons who received pay (including holiday and sick pay) for any part of the payroll period including the 12th of the month. Persons holding more than one job (about 5 percent of all persons in the labor force) are counted in each establishment which reports them.

Production workers in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 12–17 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities; in wholesale and retail trade; in finance, insurance, and real estate; and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to eliminate the effects of price change, using the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated to underlying wage-rate developments: fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries.

Hours represent the average weekly hours of production or nonsupervisory workers for which pay was received and are different from standard or scheduled hours. **Overtime hours** represent the portion of gross average weekly hours which were in excess of regular hours and for which overtime premiums were paid.

Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of June 1981 data, published in the August 1981 issue of the *Review.* Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Complete comparable historical unadjusted and seasonally adjusted data are published in a Supplement to Employment and Earnings (unadjusted data from April 1977 through March 1981 and seasonally adjusted data from January 1974 through March 1981) and in *Employment and Earnings, United States, 1909–78,* BLS Bulletin 1312-11 (for prior periods).

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review,* December 1969, pp. 9–20. See also *BLS Handbook of Methods for Surveys and Studies,* Bulletin 1910 (Bureau of Labor Statistics, 1976).

8. Employment by industry, selected years, 1950–81

[Nonagricultural payroll data, in thousands]

Year	Total	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale and retail trade	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services	Government: Total	Government: Federal	Government: State and local
1950	45,197	901	2,364	15,241	4,034	9,386	2,635	6,751	1,888	5,357	6,026	1,928	4,098
1955	50,641	792	2,839	16,882	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1960[1]	54,189	712	2,926	16,796	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1964	58,283	634	3,097	17,274	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	632	3,232	18,062	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	627	3,317	19,214	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	613	3,248	19,447	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	606	3,350	19,781	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	619	3,575	20,167	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	623	3,588	19,367	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	609	3,704	18,623	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	628	3,889	19,151	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	642	4,097	20,154	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	697	4,020	20,077	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	752	3,525	18,323	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	779	3,576	18,997	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	813	3,851	19,682	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	851	4,229	20,505	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	958	4,463	21,040	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,147
1980	90,564	1,020	4,399	20,300	5,143	20,386	5,281	15,104	5,168	17,901	16,249	2,866	13,383
1981	91,543	1,104	4,307	20,261	5,151	20,738	5,343	15,395	5,331	18,598	16,054	2,772	13,282

[1] Data include Alaska and Hawaii beginning in 1959.

9. Employment by State

[Nonagricultural payroll data, in thousands]

State	Mar. 1981	Feb. 1982	Mar. 1982 ^{p}
Alabama	1,350.5	1,338.4	1,332.8
Alaska	165.5	171.6	175.7
Arizona	1,044.9	1,049.4	1,050.2
Arkansas	736.7	717.8	722.0
California	9,952.0	10,004.4	10,034.7
Colorado	1,271.5	1,274.8	1,279.1
Connecticut	1,422.9	1,409.6	1,413.9
Delaware	254.8	248.0	253.6
District of Columbia	612.5	598.9	599.4
Florida	3,739.9	3,816.1	3,830.3
Georgia	2,186.3	2,160.7	2,159.9
Hawaii	407.7	402.2	403.3
Idaho	324.8	313.4	314.5
Illinois	4,711.7	4,614.3	4,625.6
Indiana	2,110.9	2,021.0	2,025.4
Iowa	1,091.3	1,049.3	1,046.5
Kansas	946.7	933.4	940.6
Kentucky	1,190.9	1,166.2	1,169.0
Louisiana	1,602.7	1,627.0	1,629.9
Maine	406.2	399.7	398.9
Maryland	1,706.5	1,653.2	1,662.6
Massachusetts	2,639.2	2,589.4	2,606.3
Michigan	3,375.1	3,218.2	3,227.4
Minnesota	1,737.9	1,710.1	1,715.4
Mississippi	817.2	808.6	809.4
Missouri	1,950.3	1,920.3	1,939.8
Montana	276.3	288.9	288.5
Nebraska	615.3	610.1	611.5
Nevada	404.2	412.3	413.8
New Hampshire	382.6	386.3	386.8
New Jersey	3,036.7	3,025.7	3,036.5
New Mexico	470.6	471.2	472.7
New York	7,197.7	7,202.8	7,230.0
North Carolina	2,364.7	2,344.3	2,342.9
North Dakota	240.9	245.2	246.8
Ohio	4,289.4	4,171.8	4,198.8
Oklahoma	1,178.4	1,201.7	1,214.5
Oregon	1,019.8	970.1	970.6
Pennsylvania	4,693.4	4,573.7	4,578.8
Rhode Island	394.3	387.2	386.9
South Carolina	1,193.6	1,178.3	1,179.7
South Dakota	232.5	228.3	229.2
Tennessee	1,743.5	1,708.7	1,771.8
Texas	6,055.8	6,283.6	6,290.6
Utah	549.8	556.7	559.6
Vermont	200.3	200.7	200.3
Virginia	2,140.0	2,139.1	2,145.2
Washington	1,602.0	1,538.1	1,546.0
West Virginia	630.0	607.7	610.1
Wisconsin	1,884.0	1,859.1	1,857.3
Wyoming	211.2	208.7	211.4
Virgin Islands	38.1	36.6	36.6

10. Employment by industry division and major manufacturing group

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1981									1982			
	1980	1981	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar. p	Apr. p
TOTAL	90,564	91,543	91,337	91,848	92,481	91,600	91,598	92,159	92,424	92,293	91,932	89,799	89,945	90,182	90,451
MINING	1,020	1,104	941	957	1,132	1,155	1,169	1,169	1,164	1,170	1,166	1,149	1,145	1,144	1,141
CONSTRUCTION	4,399	4,307	4,246	4,356	4,477	4,554	4,579	4,516	4,493	4,369	4,155	3,721	3,703	3,769	3,869
MANUFACTURING	20,300	20,261	20,253	20,342	20,531	20,337	20,473	20,600	20,368	20,122	19,804	19,462	19,410	19,315	19,182
Production workers	14,223	14,083	14,127	14,185	14,325	14,108	14,230	14,376	14,147	13,904	13,583	13,276	13,243	13,168	13,057
Durable goods	12,181	12,136	12,197	12,235	12,334	12,198	12,188	12,292	12,163	11,999	11,786	11,580	11,536	11,482	11,384
Production workers	8,438	8,316	8,412	8,438	8,500	8,347	8,323	8,440	8,313	8,153	7,941	7,763	7,729	7,686	7,598
Lumber and wood products	690.3	679.3	686.9	703.4	711.0	709.6	701.5	691.0	684.5	638.7	618.8	602.4	610.3	609.8	613.5
Furniture and fixtures	466.8	476.6	478.0	479.0	480.5	472.0	480.6	484.7	483.5	476.5	471.1	463.2	459.7	455.1	451.7
Stone, clay, and glass products	665.6	650.2	652.6	659.7	671.0	666.7	669.1	664.5	652.8	641.2	619.6	589.1	584.5	588.8	593.7
Primary metal industries	1,144.1	1,128.2	1,149.9	1,147.5	1,155.5	1,135.5	1,140.3	1,138.8	1,109.3	1,087.8	1,058.0	1,041.7	1,025.0	1,013.8	998.6
Fabricated metal products	1,609.0	1,583.6	1,593.7	1,596.1	1,606.8	1,584.5	1,590.9	1,607.5	1,584.2	1,563.5	1,532.8	1,502.3	1,494.5	1,483.9	1,466.8
Machinery, except electrical	2,497.0	2,512.8	2,506.1	2,508.6	2,531.3	2,517.4	2,511.4	2,540.7	2,528.4	2,512.3	2,495.4	2,465.0	2,457.7	2,429.1	2,393.6
Electric and electronic equipment	2,103.2	2,133.9	2,129.7	2,134.7	2,152.7	2,138.9	2,146.1	2,164.8	2,158.3	2,131.3	2,104.1	2,099.3	2,088.1	2,074.8	2,071.9
Transportation equipment	1,875.3	1,837.8	1,874.3	1,877.4	1,882.7	1,840.3	1,790.6	1,848.3	1,832.3	1,803.0	1,755.7	1,719.4	1,712.6	1,723.8	1,696.8
Instruments and related products	708.5	718.0	714.4	715.2	723.2	722.1	726.2	723.1	720.0	718.6	718.0	710.8	707.3	706.1	703.9
Miscellaneous manufacturing	419.3	415.3	411.3	413.4	419.5	412.3	421.8	428.7	429.9	426.2	412.2	395.3	396.5	397.2	393.2
Nondurable goods	8,118	8,125	8,056	8,107	8,197	8,139	8,285	8,308	8,205	8,123	8,018	7,873	7,874	7,833	7,798
Production workers	5,786	5,766	5,715	5,757	5,825	5,761	5,907	5,936	5,834	5,751	5,642	5,513	5,514	5,482	5,459
Food and kindred products	1,710.8	1,684.1	1,631.0	1,648.1	1,673.4	1,714.8	1,773.2	1,776.1	1,729.0	1,689.2	1,657.3	1,613.3	1,613.1	1,608.4	1,591.9
Tobacco manufactures	69.2	71.1	66.2	65.2	66.4	66.3	75.6	77.7	77.0	74.9	73.3	72.2	68.8	65.4	63.0
Textile mill products	852.7	839.3	841.6	844.3	851.0	836.5	847.3	850.2	834.3	826.8	816.5	795.5	795.1	777.2	785.1
Apparel and other textile products	1,265.8	1,255.8	1,255.2	1,265.9	1,263.9	1,231.1	1,276.8	1,287.3	1,274.1	1,259.5	1,224.4	1,189.8	1,208.5	1,190.0	1,181.4
Paper and allied products	694.0	692.3	690.9	693.1	701.0	696.4	700.3	702.0	691.4	696.4	681.7	674.9	671.4	671.0	667.1
Printing and publishing	1,258.3	1,288.0	1,280.4	1,281.8	1,286.2	1,296.5	1,289.4	1,294.1	1,290.7	1,305.1	1,312.5	1,300.9	1,304.6	1,306.9	1,305.3
Chemicals and allied products	1,107.4	1,107.3	1,106.2	1,110.3	1,121.1	1,116.6	1,112.0	1,110.5	1,104.4	1,100.2	1,096.3	1,088.0	1,086.5	1,087.4	1,081.9
Petroleum and coal products	196.6	210.8	209.5	212.9	215.4	216.1	215.4	212.7	211.4	210.4	206.8	199.0	197.5	198.4	199.2
Rubber and miscellaneous plastics products	730.7	744.4	743.5	749.2	759.0	747.0	756.8	760.8	748.2	738.6	726.4	720.4	715.8	708.5	709.6
Leather and leather products	232.6	232.3	231.7	235.9	230.1	227.5	238.6	237.0	235.7	232.1	223.1	218.5	212.2	210.5	213.0
TRANSPORTATION AND PUBLIC UTILITIES	5,143	5,151	5,120	5,148	5,195	5,177	5,175	5,222	5,204	5,183	5,153	5,063	5,049	5,047	5,059
WHOLESALE AND RETAIL TRADE	20,386	20,738	20,513	20,672	20,795	20,735	20,811	20,919	20,999	21,148	21,413	20,682	20,538	20,590	20,697
WHOLESALE TRADE	5,281	5,343	5,317	5,335	5,381	5,376	5,386	5,370	5,381	5,379	5,352	5,294	5,284	5,284	5,285
RETAIL TRADE	15,104	15,395	15,196	15,337	15,414	15,359	15,425	15,549	15,618	15,769	16,061	15,388	15,254	15,306	15,412
FINANCE, INSURANCE, AND REAL ESTATE	5,168	5,331	5,295	5,326	5,384	5,408	5,408	5,361	5,349	5,344	5,350	5,329	5,328	5,345	5,350
SERVICES	17,901	18,598	18,512	18,633	18,764	18,847	18,835	18,812	18,826	18,800	18,762	18,506	18,666	18,793	18,990
GOVERNMENT	16,249	16,054	16,457	16,414	16,203	15,387	15,148	15,560	16,021	16,157	16,129	15,887	16,106	16,189	16,163
Federal	2,866	2,772	2,773	2,782	2,825	2,833	2,803	2,735	2,737	2,729	2,729	2,717	2,723	2,721	2,722
State and local	13,383	13,282	13,684	13,632	13,378	12,554	12,345	12,825	13,284	13,428	13,400	13,170	13,383	13,468	13,441

11. Employment by industry division and major manufacturing group, seasonally adjusted

[Nonagricultural payroll data, in thousands]

Industry division and group	1981									1982			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.^{p}	Apr.^{p}
TOTAL	91,458	91,564	91,615	91,880	91,901	92,033	91,832	91,522	91,113	90,679	91,019	90,780	90,583
MINING	950	957	1,110	1,132	1,151	1,162	1,162	1,172	1,175	1,166	1,165	1,159	1,151
CONSTRUCTION	4,418	4,334	4,284	4,272	4,275	4,272	4,259	4,229	4,193	4,085	4,165	4,110	4,026
MANUFACTURING	20,332	20,414	20,424	20,535	20,505	20,496	20,241	20,017	19,736	19,550	19,506	19,340	19,258
Production workers	14,187	14,247	14,245	14,327	14,294	14,281	14,030	13,797	13,514	13,342	13,316	13,188	13,113
Durable goods	12,207	12,254	12,278	12,333	12,332	12,311	12,115	11,932	11,714	11,596	11,559	11,458	11,393
Production workers	8,412	8,442	8,455	8,491	8,485	8,465	8,267	8,083	7,868	7,758	7,740	7,661	7,596
Lumber and wood products	702	710	699	702	686	677	652	634	619	615	625	622	627
Furniture and fixtures	478	484	486	488	487	485	480	470	464	456	454	450	452
Stone, clay, and glass products	656	658	658	658	660	665	644	634	622	607	605	600	597
Primary metal industries	1,145	1,142	1,144	1,140	1,148	1,139	1,114	1,080	1,058	1,042	1,027	1,013	995
Fabricated metal products	1,595	1,604	1,604	1,614	1,610	1,606	1,575	1,546	1,516	1,501	1,493	1,479	1,466
Machinery, except electrical	2,491	2,511	2,521	2,533	2,542	2,551	2,549	2,522	2,488	2,455	2,441	2,405	2,379
Electric and electronic equipment	2,134	2,143	2,148	2,163	2,166	2,163	2,150	2,119	2,089	2,093	2,084	2,073	2,076
Transportation equipment	1,878	1,872	1,886	1,886	1,889	1,889	1,811	1,783	1,725	1,706	1,719	1,712	1,700
Instruments and related products	714	716	717	723	727	727	723	719	717	711	708	705	703
Miscellaneous manufacturing	414	414	415	426	417	419	417	415	416	406	403	399	398
Nondurable goods	8,125	8,160	8,146	8,202	8,173	8,185	8,126	8,085	8,022	7,954	7,947	7,882	7,865
Production workers	5,775	5,805	5,790	5,836	5,809	5,816	5,763	5,714	5,646	5,584	5,576	5,527	5,517
Food and kindred products	1,697	1,703	1,673	1,691	1,688	1,669	1,675	1,676	1,669	1,663	1,677	1,665	1,657
Tobacco manufactures	72	71	71	71	73	71	70	70	70	71	70	69	68
Textile mill products	842	843	846	856	849	849	833	823	812	795	793	775	765
Apparel and other textile products	1,250	1,258	1,264	1,278	1,272	1,273	1,259	1,251	1,233	1,210	1,212	1,192	1,177
Paper and allied products	691	694	695	696	698	703	691	686	682	678	673	671	667
Printing and publishing	1,280	1,283	1,284	1,290	1,295	1,301	1,302	1,302	1,302	1,301	1,303	1,304	1,306
Chemicals and allied products	1,107	1,109	1,111	1,110	1,106	1,112	1,108	1,104	1,100	1,093	1,092	1,088	1,083
Petroleum and coal products	211	213	212	212	212	211	210	210	208	203	201	201	201
Rubber and miscellaneous plastics products	744	753	757	760	764	760	744	733	722	718	712	706	710
Leather and leather products	231	233	232	238	238	236	234	230	224	222	214	211	212
TRANSPORTATION AND PUBLIC UTILITIES	5,161	5,148	5,149	5,167	5,170	5,186	5,168	5,147	5,122	5,124	5,105	5,088	5,100
WHOLESALE AND RETAIL TRADE	20,636	20,714	20,717	20,796	20,862	20,872	20,916	20,838	20,735	20,849	20,934	20,892	20,853
WHOLESALE TRADE	5,333	5,346	5,349	5,360	5,375	5,370	5,360	5,363	5,336	5,321	5,321	5,305	5,301
RETAIL TRADE	15,303	15,368	15,368	15,436	15,487	15,502	15,556	15,475	15,399	15,528	15,613	15,587	15,552
FINANCE, INSURANCE, AND REAL ESTATE	5,316	5,326	5,331	5,344	5,354	5,366	5,360	5,355	5,368	5,361	5,366	5,377	5,371
SERVICES	18,475	18,540	18,560	18,642	18,667	18,774	18,788	18,838	18,856	18,845	18,893	18,887	18,952
GOVERNMENT	16,170	16,131	16,040	15,992	15,917	15,905	15,938	15,926	15,930	15,899	15,886	15,907	15,882
Federal	2,767	2,779	2,781	2,777	2,770	2,765	2,759	2,748	2,741	2,742	2,739	2,729	2,717
State and local	13,403	13,352	13,259	13,215	13,147	13,140	13,179	13,178	13,189	13,157	13,146	13,178	13,165

12. Hours and earnings, by industry division, selected years, 1950–81

[Gross averages, production or nonsupervisory workers on nonagricultural payrolls]

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Total private			Mining			Construction			Manufacturing		
1950	$53.13	39.8	$1.335	$67.16	37.9	$1.772	$69.68	37.4	$1.863	$58.32	40.5	$1.440
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1960[1]	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	269.34	40.2	6.70
1980	235.10	35.3	6.66	396.14	43.2	9.17	367.04	37.0	9.92	288.62	39.7	7.27
1981	255.20	35.2	7.25	438.62	43.6	10.06	395.60	36.8	10.75	317.60	39.8	7.98
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950	....	....	....	$44.55	40.5	$1.100	$50.52	37.7	$1.340	....	....	....
1955	....	....	....	55.16	39.4	1.40	63.92	37.6	1.70	....	....	....
1960[1]	....	....	....	66.01	38.6	1.71	75.14	37.2	2.02	....	....	....
1964	$118.78	41.1	$2.89	74.66	37.9	1.97	85.79	37.3	2.30	$70.03	36.1	$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	258.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	351.25	39.6	8.87	176.46	32.2	5.48	209.24	36.2	5.78	190.71	32.6	5.85
1981	382.97	39.4	9.72	190.35	32.1	5.93	228.69	36.3	6.30	208.97	32.6	6.41

[1] Data include Alaska and Hawaii beginning in 1959.

13. Weekly hours, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981									1982			
	1980	1981	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.ᵖ	Apr.ᵖ
TOTAL PRIVATE	35.3	35.2	35.2	35.2	35.4	35.6	35.6	35.0	35.1	35.1	35.2	33.9	34.7	34.7	34.6
MINING	43.2	43.6	43.6	43.8	42.1	43.5	44.1	43.8	44.5	44.3	44.7	42.8	43.5	43.7	43.1
CONSTRUCTION	37.0	36.8	36.9	36.9	37.2	37.7	37.3	35.7	37.5	37.0	37.0	33.2	35.7	36.9	36.2
MANUFACTURING	39.7	39.8	39.7	40.1	40.2	39.6	39.8	39.5	39.7	39.6	39.9	37.1	39.2	39.1	38.7
Overtime hours	2.8	2.8	2.6	2.9	3.0	2.8	3.0	2.9	2.8	2.6	2.6	2.2	2.3	2.3	2.1
Durable goods	40.1	40.2	40.3	40.6	40.6	39.9	40.2	39.8	40.1	40.0	40.4	37.7	39.7	39.6	39.1
Overtime hours	2.8	2.8	2.7	3.0	3.0	2.8	2.9	2.8	2.7	2.5	2.6	2.1	2.2	2.2	2.0
Lumber and wood products	38.6	38.7	39.1	39.8	39.5	38.7	39.0	37.9	38.2	37.6	38.1	33.7	37.6	37.7	37.5
Furniture and fixtures	38.1	38.4	38.2	38.5	38.9	37.8	38.6	37.7	38.6	38.1	38.9	32.3	37.4	37.8	37.1
Stone, clay, and glass products	40.8	40.6	40.9	41.1	41.2	40.8	41.0	40.6	40.5	40.5	40.1	37.4	39.2	39.7	39.8
Primary metal industries	40.1	40.5	41.2	40.9	40.9	40.3	40.3	40.8	39.6	39.7	39.6	38.4	38.6	38.9	38.4
Fabricated metal products	40.4	40.3	40.2	40.7	40.8	39.9	40.3	39.5	40.1	40.0	40.4	37.8	39.4	39.5	38.9
Machinery except electrical	41.0	40.9	40.8	41.2	41.1	40.4	40.7	40.4	40.6	40.9	41.5	39.1	40.7	40.4	39.7
Electric and electronic equipment	39.8	39.9	39.8	40.1	40.2	39.7	40.0	39.7	39.9	39.8	40.3	38.1	39.8	39.6	39.1
Transportation equipment	40.6	40.9	41.0	41.6	41.3	40.7	40.5	39.9	40.9	40.8	41.4	38.4	40.5	40.5	40.8
Instruments and related products	40.5	40.4	39.9	40.3	40.4	39.9	40.4	40.4	40.4	40.8	40.7	39.6	40.0	40.1	39.3
Miscellaneous manufacturing	38.7	38.9	38.6	38.9	39.0	38.5	39.0	38.7	39.3	39.5	39.1	36.7	38.5	38.7	38.3
Nondurable goods	39.0	39.2	38.9	39.4	39.5	39.1	39.4	39.1	39.1	39.1	39.2	38.2	38.6	38.4	38.0
Overtime hours	2.8	2.8	2.6	2.9	2.9	2.8	3.0	3.1	2.9	2.8	2.6	2.4	2.5	2.4	2.3
Food and kindred products	39.7	39.7	39.3	39.8	39.8	39.6	40.0	39.8	39.6	39.9	40.4	38.8	39.7	39.2	38.9
Tobacco manufactures	38.1	38.8	37.2	38.6	38.5	38.6	40.7	40.2	39.4	38.8	38.1	36.1	38.3	37.9	36.7
Textile mill products	40.1	39.7	39.4	40.3	40.4	39.7	40.0	38.9	39.4	39.2	38.6	31.2	38.1	37.7	37.0
Apparel and other textile products	35.4	35.7	35.2	36.0	36.4	36.0	36.3	35.2	35.8	35.8	35.5	30.0	35.2	35.1	34.5
Paper and allied products	42.3	42.5	42.3	42.5	42.7	42.4	42.5	43.2	42.4	42.3	42.7	41.3	42.0	41.7	41.9
Printing and publishing	37.1	37.3	37.0	37.3	37.2	37.2	37.5	37.4	37.2	37.3	37.9	36.2	37.0	37.1	36.5
Chemicals and allied products	41.5	41.6	41.6	41.6	41.6	41.5	41.4	42.2	41.5	41.7	41.8	40.8	41.1	40.8	40.5
Petroleum and coal products	41.8	43.2	43.9	43.6	43.5	43.7	43.0	44.4	43.1	43.0	42.6	43.1	42.2	42.4	42.6
Rubber and miscellaneous plastics products	40.1	40.4	40.4	40.9	40.9	40.0	40.4	39.8	40.2	39.9	40.1	37.9	39.9	39.7	39.4
Leather and leather products	36.7	36.8	36.3	37.4	36.1	36.6	36.9	36.0	36.7	36.6	36.4	33.3	35.3	35.5	35.2
TRANSPORTATION AND PUBLIC UTILITIES	39.6	39.4	39.3	39.3	39.8	39.8	39.5	39.2	39.1	39.3	39.3	38.4	39.2	38.9	39.0
WHOLESALE AND RETAIL TRADE	32.2	32.1	32.1	32.0	32.3	32.8	32.8	32.2	31.9	31.9	32.2	31.1	31.5	31.5	31.5
WHOLESALE TRADE	38.5	38.6	38.5	38.5	38.6	38.8	38.7	38.5	38.7	38.6	38.7	37.8	38.2	38.2	38.1
RETAIL TRADE	30.2	30.1	30.0	29.9	30.4	30.9	30.9	30.2	29.5	29.8	30.3	29.0	29.4	29.4	29.5
FINANCE, INSURANCE, AND REAL ESTATE	36.2	36.3	36.3	36.1	36.1	36.3	36.3	36.0	36.2	36.2	36.2	36.2	36.2	36.2	36.1
SERVICES	32.6	32.6	32.6	32.5	32.7	33.0	32.9	32.4	32.5	32.5	32.6	32.3	32.5	32.5	32.5

14. Weekly hours, by industry division and major manufacturing group, seasonally adjusted

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	1981									1982			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.^{p}	Apr.^{p}
TOTAL PRIVATE	35.4	35.3	35.2	35.3	35.2	34.9	35.0	35.0	34.9	34.2	35.0	34.9	34.8
MANUFACTURING	40.2	40.3	40.1	40.0	40.0	39.3	39.5	39.3	39.0	37.3	39.5	39.0	39.1
Overtime hours	2.9	3.2	3.0	3.0	3.0	2.7	2.7	2.5	2.4	2.3	2.4	2.3	2.4
Durable goods	40.8	40.8	40.5	40.5	40.5	39.7	39.9	39.7	39.3	37.9	39.9	39.4	39.6
Overtime hours	3.0	3.2	3.0	3.0	3.0	2.6	2.6	2.4	2.4	2.2	2.2	2.1	2.2
Lumber and wood products	39.6	39.8	39.0	38.8	38.6	37.3	37.6	37.5	37.6	34.6	38.2	37.9	38.0
Furniture and fixtures	38.8	39.0	38.9	38.5	38.6	37.5	38.1	37.7	37.7	32.6	37.6	37.4	37.7
Stone, clay, and glass products	41.2	41.0	40.8	40.9	40.8	40.3	40.0	40.0	39.5	38.3	40.2	39.8	40.1
Primary metal industries	41.2	41.0	40.8	40.5	40.7	40.6	39.8	39.7	39.2	38.4	39.6	38.8	38.4
Fabricated metal products	40.9	40.9	40.7	40.5	40.5	39.5	40.0	39.6	39.2	37.9	39.6	39.3	39.6
Machinery, except electrical	41.3	41.4	41.1	41.1	41.2	40.3	40.7	40.6	40.3	39.0	40.7	40.1	40.2
Electric and electronic equipment	40.2	40.4	40.2	40.5	40.4	39.6	39.9	39.3	39.2	38.1	39.8	39.4	39.5
Transportation equipment	42.0	41.8	41.4	41.2	41.3	39.9	40.5	40.3	39.4	38.7	40.9	40.4	41.6
Instruments and related products	40.1	40.4	40.4	40.5	40.8	40.5	40.4	40.3	39.9	38.6	40.0	40.0	39.5
Miscellaneous manufacturing	38.9	39.2	39.1	39.2	39.1	38.4	39.0	39.0	38.4	36.9	38.7	38.5	38.6
Nondurable goods	39.3	39.6	39.4	39.3	39.3	38.9	39.0	38.8	38.6	36.4	38.9	38.5	38.4
Overtime hours	2.9	3.1	3.0	2.9	2.9	2.8	2.6	2.7	2.4	2.4	2.6	2.5	2.6
Food and kindred products	40.1	40.0	39.8	39.4	39.4	39.2	39.5	39.6	39.8	39.1	40.3	39.8	39.7
Textile mill products	39.8	40.5	40.2	40.4	40.3	38.9	39.3	38.8	37.8	31.3	38.1	37.5	37.4
Apparel and other textile products	35.5	36.0	36.1	35.9	36.1	35.2	35.7	35.6	35.1	30.7	35.4	35.0	34.8
Paper and allied products	42.6	42.8	42.7	42.7	42.7	43.1	42.4	41.9	41.8	41.2	42.2	41.7	42.2
Printing and publishing	37.3	37.6	37.4	37.3	37.3	37.1	37.1	36.9	37.2	36.5	37.4	37.1	36.8
Chemicals and allied products	41.5	41.7	41.7	41.8	41.7	42.3	41.5	41.3	41.3	40.8	41.2	40.7	40.4
Petroleum and coal products	44.1	43.8	43.4	43.1	42.8	43.3	42.1	42.3	42.6	44.3	43.5	43.4	42.8
Rubber and miscellaneous plastics products	40.7	41.3	41.0	40.5	40.6	39.6	40.0	39.6	39.4	37.8	40.0	39.5	39.7
Leather and leather products	36.6	37.1	37.1	36.5	36.9	36.1	36.8	36.7	36.1	33.6	35.5	35.8	35.4
WHOLESALE AND RETAIL TRADE	32.3	32.1	32.1	32.2	32.1	32.1	31.9	32.0	31.9	31.6	31.9	31.8	31.8
WHOLESALE TRADE	38.6	38.5	38.5	38.7	38.6	38.5	38.5	38.6	38.4	38.0	38.5	38.3	38.2
RETAIL TRADE	30.3	30.1	30.1	30.1	30.1	30.1	29.9	29.9	29.9	29.6	29.9	29.8	29.8
SERVICES	32.8	32.7	32.5	32.5	32.4	32.4	32.5	32.6	32.7	32.5	32.7	32.7	32.7

NOTE: The industry divisions of mining; construction; tobacco manufactures (a major manufacturing group, nondurable goods); transportation and public utilities; and finance, insurance, and real estate are no longer shown. This is because the seasonal component in these is small relative to the trend-cycle, or irregular components, or both, and consequently cannot be precisely separated.

15. Hourly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981									1982			
	1980	1981	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.^{p}	Apr.^{p}
TOTAL PRIVATE	$6.66	$7.25	$7.13	$7.17	$7.20	$7.24	$7.30	$7.40	$7.42	$7.46	$7.45	$7.55	$7.55	$7.54	$7.56
MINING	9.17	10.06	9.70	9.88	9.94	10.11	10.15	10.29	10.28	10.42	10.43	10.68	10.65	10.64	10.68
CONSTRUCTION	9.92	10.75	10.43	10.53	10.60	10.74	10.87	11.02	11.10	11.12	11.19	11.56	11.29	11.30	11.22
MANUFACTURING	7.27	7.99	7.88	7.92	7.97	8.02	8.02	8.15	8.15	8.20	8.26	8.41	8.34	8.35	8.40
Durable goods	7.75	8.52	8.40	8.45	8.52	8.55	8.57	8.66	8.71	8.75	8.81	8.91	8.88	8.89	8.91
Lumber and wood products	6.53	7.00	6.83	6.92	7.10	7.16	7.13	7.15	7.09	7.15	7.17	7.40	7.28	7.24	7.18
Furniture and fixtures	5.49	5.90	5.78	5.83	5.89	5.91	5.98	6.00	6.05	6.04	6.11	6.27	6.18	6.20	6.20
Stone, clay, and glass products	7.50	8.27	8.11	8.20	8.31	8.39	8.41	8.53	8.50	8.54	8.56	8.73	8.66	8.65	8.70
Primary metal industries	9.77	10.81	10.76	10.68	10.76	10.79	10.99	11.22	10.97	11.10	11.09	11.23	11.20	11.16	11.30
Fabricated metal products	7.45	8.20	8.05	8.17	8.23	8.22	8.27	8.34	8.39	8.43	8.53	8.55	8.57	8.63	8.68
Machinery, except electrical	8.00	8.83	8.67	8.75	8.81	8.85	8.86	8.99	9.05	9.10	9.20	9.21	9.22	9.19	9.18
Electric and electronic equipment	6.95	7.65	7.51	7.55	7.60	7.69	7.76	7.79	7.84	7.86	7.93	8.02	8.00	8.06	8.09
Transportation equipment	9.32	10.31	10.14	10.25	10.36	10.35	10.30	10.41	10.65	10.66	10.69	10.72	10.75	10.80	10.76
Instruments and related products	6.80	7.44	7.25	7.31	7.34	7.44	7.56	7.60	7.61	7.70	7.83	7.94	7.95	8.01	8.04
Miscellaneous manufacturing	5.47	5.96	5.91	5.93	5.93	5.96	5.97	6.07	6.06	6.12	6.20	6.31	6.33	6.36	6.40
Nondurable goods	6.56	7.19	7.08	7.11	7.14	7.23	7.24	7.37	7.34	7.39	7.45	7.60	7.55	7.57	7.66
Food and kindred products	6.86	7.45	7.37	7.43	7.43	7.47	7.50	7.58	7.53	7.63	7.66	7.83	7.75	7.79	7.89
Tobacco manufactures	7.73	8.82	8.90	9.03	9.33	9.43	8.61	8.66	8.58	8.96	8.90	9.15	9.51	9.62	9.94
Textile mill products	5.08	5.52	5.36	5.40	5.42	5.51	5.66	5.69	5.72	5.74	5.72	5.76	5.76	5.77	5.80
Apparel and other textile products	4.57	4.98	4.96	4.98	5.00	4.94	4.98	5.06	5.07	5.06	5.05	5.20	5.15	5.17	5.21
Paper and allied products	7.84	8.60	8.37	8.42	8.55	8.73	8.67	8.85	8.82	8.80	8.96	9.07	9.00	9.03	9.13
Printing and publishing	7.53	8.20	8.04	8.10	8.13	8.22	8.27	8.40	8.42	8.44	8.50	8.61	8.60	8.63	8.67
Chemicals and allied products	8.30	9.12	8.94	8.99	9.07	9.16	9.19	9.38	9.37	9.42	9.52	9.68	9.68	9.66	9.79
Petroleum and coal products	10.09	11.37	11.40	11.28	11.29	11.41	11.31	11.53	11.46	11.57	11.58	11.90	12.27	12.20	12.45
Rubber and miscellaneous plastics products	6.56	7.25	7.15	7.22	7.23	7.28	7.32	7.38	7.39	7.41	7.48	7.62	7.59	7.55	7.63
Leather and leather products	4.58	4.99	4.93	4.95	4.98	4.96	4.97	5.08	5.09	5.10	5.14	5.18	5.21	5.22	5.23
TRANSPORTATION AND PUBLIC UTILITIES	8.87	9.72	9.54	9.59	9.63	9.69	9.89	9.97	9.96	10.07	10.08	10.15	10.19	10.14	10.19
WHOLESALE AND RETAIL TRADE	5.48	5.93	5.87	5.89	5.89	5.91	5.94	6.04	6.00	6.03	6.01	6.17	6.16	6.15	6.17
WHOLESALE TRADE	6.96	7.58	7.47	7.51	7.51	7.59	7.67	7.71	7.74	7.81	7.83	7.96	7.95	7.94	7.97
RETAIL TRADE	4.88	5.26	5.22	5.23	5.23	5.24	5.26	5.37	5.29	5.32	5.32	5.44	5.43	5.43	5.45
FINANCE, INSURANCE, AND REAL ESTATE	5.78	6.30	6.20	6.24	6.24	6.27	6.37	6.38	6.42	6.51	6.46	6.57	6.62	6.60	6.64
SERVICES	5.85	6.41	6.30	6.33	6.33	6.34	6.41	6.51	6.57	6.67	6.66	6.79	6.79	6.77	6.79

16. Hourly Earnings Index for production or nonsupervisory workers on private nonagricultural payrolls, by industry division

[Seasonally adjusted data: 1977 = 100]

Industry	1981									1982				Mar. 1982 to Apr. 1982	Apr. 1981 to Apr. 1982[1]
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.^{p}	Apr.^{p}		
TOTAL PRIVATE (in current dollars)	136.7	137.7	138.4	139.0	140.7	141.5	141.9	143.2	143.5	145.1	145.3	145.7	146.4	0.4	7.1
Mining[2]	145.7	145.6	147.2	148.9	149.4	151.5	151.3	153.3	153.2	156.0	155.9	155.8	156.8	.6	7.6
Construction	129.0	129.4	130.4	131.8	132.5	132.9	134.3	135.4	136.2	140.8	138.2	138.3	137.8	–.3	6.9
Manufacturing	139.9	140.7	141.6	142.5	143.6	144.8	145.5	146.4	147.0	149.0	149.1	149.8	150.8	.7	7.8
Transportation and public utilities	137.3	138.9	139.6	139.3	141.8	141.7	142.0	144.0	144.4	145.8	146.5	147.2	147.1	–.1	7.1
Wholesale and retail trade	136.4	137.4	137.8	138.4	140.0	141.2	140.5	141.5	141.9	142.3	143.0	143.2	144.0	.5	5.5
Finance, insurance, and real estate	135.4	136.8	137.1	137.4	140.4	140.3	140.9	143.2	141.8	143.4	143.9	144.9	144.9	.4	7.1
Services	134.8	136.0	136.6	136.9	139.4	138.8	140.7	142.6	142.7	143.6	144.0	144.2	145.1	.7	7.7
TOTAL PRIVATE (in constant dollars)	r93.1	r93.0	92.9	92.2	92.6	92.1	92.0	92.5	92.3	93.1	92.9	93.5	(3)	(3)	(3)

[1] Over-the-year percent change before seasonal adjustment.

[2] This series is not seasonally adjusted because the seasonal component is small relative to the trend-cycle, irregular components, or both, and consequently cannot be separated with sufficient precision.

[3] Not available.

r = revised.

17. Weekly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981									1982			
	1980	1981	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar. p	Apr. p
TOTAL PRIVATE:															
Current dollars	$235.10	$255.20	$250.98	$252.38	$254.88	$257.74	$259.88	$259.00	$260.44	$261.85	$262.24	$255.95	$261.99	$261.64	$261.58
Constant (1977) dollars	172.74	170.13	170.73	170.16	170.49	170.35	170.64	168.40	169.01	169.48	169.30	164.70	169.05	168.15	(1)
MINING	396.14	439.62	422.92	423.98	418.47	439.79	447.62	450.70	457.46	461.61	466.22	457.10	463.28	464.97	460.31
CONSTRUCTION	367.04	395.60	394.87	398.56	394.32	404.90	405.45	393.41	416.25	411.44	414.03	383.79	402.70	416.97	406.16
MANUFACTURING															
Current dollars	288.62	317.60	312.84	317.59	320.30	317.50	319.20	321.93	323.56	324.72	329.57	312.01	326.83	326.49	325.08
Constant (1977) dollars	212.06	211.73	212.82	214.15	214.31	209.91	209.58	208.32	208.87	210.17	212.76	200.78	208.70	209.83	(1)
Durable goods	310.78	342.50	338.52	343.07	345.91	341.15	344.51	345.48	349.27	350.00	355.92	335.91	352.54	352.04	348.38
Lumber and wood products	252.06	270.90	267.05	274.00	280.45	277.09	278.07	270.99	270.84	268.84	273.18	249.38	273.73	272.95	269.25
Furniture and fixtures	209.17	226.56	220.80	224.48	229.12	223.40	230.83	226.20	233.53	230.12	237.08	202.52	231.13	233.12	230.02
Stone, clay, and glass products	306.00	335.76	331.70	337.02	342.37	342.31	344.81	348.32	344.25	345.87	343.28	328.50	339.08	343.41	346.26
Primary metal industries	391.78	437.81	443.31	436.81	440.08	434.84	442.90	457.78	434.41	440.87	438.16	431.23	443.52	434.12	433.92
Fabricated metal products	300.98	330.46	323.61	332.52	335.78	327.98	333.28	330.26	336.44	337.20	344.61	323.19	337.66	340.89	337.65
Machinery except electrical	328.00	361.15	353.74	360.50	362.09	357.54	360.60	362.79	367.43	372.19	381.80	360.11	375.25	371.28	364.45
Electric and electronic equipment	276.61	305.24	298.90	302.76	305.52	305.29	310.40	309.26	312.62	312.83	319.58	305.56	318.40	319.18	316.32
Transportation equipment	378.38	421.66	415.74	426.40	427.87	421.25	417.15	415.36	435.59	434.93	442.57	411.65	435.38	437.40	436.86
Instruments and related products	275.40	300.58	289.28	294.58	296.54	296.86	305.42	307.04	307.44	314.16	318.88	308.48	318.09	321.20	315.97
Miscellaneous manufacturing	211.69	232.62	229.13	230.68	231.27	230.23	232.83	234.91	238.16	241.74	242.42	231.58	243.71	246.13	245.12
Nondurable goods	255.84	281.85	275.41	280.13	282.03	282.69	285.26	288.17	288.98	288.95	292.04	278.02	291.43	290.09	291.06
Food and kindred products	272.34	295.77	289.84	295.71	295.71	295.81	300.00	301.68	298.19	304.44	310.08	303.80	307.08	305.37	306.92
Tobacco manufactures	294.51	342.22	331.08	348.58	359.21	364.00	350.43	348.13	338.05	347.65	339.09	330.32	364.23	355.94	364.80
Textile mill products	203.71	219.14	211.18	217.62	218.97	218.75	226.40	221.34	225.37	225.01	220.79	179.71	219.46	217.53	214.60
Apparel and other textile products	161.78	177.79	174.58	179.26	182.00	177.84	180.77	178.11	181.51	181.15	179.28	158.00	181.28	181.47	179.75
Paper and allied products	331.63	365.50	354.05	357.85	365.09	370.15	368.48	366.64	373.97	376.05	382.50	374.50	378.00	376.55	382.55
Printing and publishing	279.36	305.86	297.48	302.13	302.44	305.78	310.13	314.16	313.22	314.81	322.15	311.68	318.20	320.17	316.46
Chemicals and allied products	344.45	379.36	371.90	373.98	377.31	380.14	380.47	385.84	388.86	392.81	397.94	394.94	397.85	394.13	396.50
Petroleum and coal products	421.76	491.18	500.46	491.81	491.12	498.62	486.33	511.83	493.93	497.51	493.31	512.89	517.79	517.28	530.37
Rubber and miscellaneous plastics products	263.06	292.90	288.86	295.30	295.71	291.20	295.73	293.72	297.09	295.66	298.95	288.80	302.84	299.74	300.62
Leather and leather products	168.09	183.63	178.96	185.13	189.74	181.54	183.39	182.88	186.80	186.86	187.10	172.49	183.91	185.31	184.10
TRANSPORTATION AND PUBLIC UTILITIES	351.25	382.97	374.92	376.89	383.27	385.66	390.68	390.82	389.44	395.75	396.14	389.76	393.45	394.45	397.41
WHOLESALE AND RETAIL TRADE	176.46	190.25	188.43	188.48	190.25	193.85	194.83	194.49	191.40	192.36	193.52	191.89	194.04	193.73	194.36
WHOLESALE TRADE	267.96	292.59	287.80	289.14	289.69	294.49	296.83	296.84	298.54	301.47	303.02	300.51	303.69	303.31	303.96
RETAIL TRADE	147.38	158.33	158.60	158.38	158.99	161.92	162.53	162.17	157.64	158.54	161.20	157.76	159.64	159.64	160.78
FINANCE, INSURANCE, AND REAL ESTATE	209.24	226.69	225.06	225.26	225.26	227.80	231.23	229.68	232.40	235.66	233.85	237.83	239.64	238.92	239.70
SERVICES	190.71	208.97	205.38	206.73	206.99	209.22	210.89	210.92	213.53	216.78	217.12	219.32	220.68	220.03	220.68

[1] Not available.

UNEMPLOYMENT INSURANCE DATA

NATIONAL UNEMPLOYMENT INSURANCE DATA are compiled monthly by the Employment and Training Administration of the U.S. Department of Labor from monthly reports of unemployment insurance activity prepared by State agencies. Railroad unemployment insurance data are prepared by the U.S. Railroad Retirement Board.

Definitions

Data for **all programs** represent an unduplicated count of insured unemployment under State programs, Unemployment Compensation for Ex-Servicemen, and Unemployment Compensation for Federal Employees, and the Railroad Insurance Act.

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

An **application** for benefits is filed by a railroad worker at the beginning of his first period of unemployment in a benefit year; no application is required for subsequent periods in the same year. **Number of payments** are payments made in 14-day registration periods. The **average amount of benefit payment** is an average for all compensable periods, not adjusted for recovery of overpayments or settlement of underpayments. However, **total benefits paid** have been adjusted.

18. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1981										1982		
	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.ᵖ
All programs:													
Insured unemployment	3,949	3,453	3,111	2,840	3,012	2,874	2,880	2,753	3,229	3,905	4,981	4,723	4,892
State unemployment insurance program:[1]													
Initial claims[2]	1,864	1,647	1,417	1,741	2,114	1,810	1,881	1,966	2,296	3,272	3,329	2,272	2,418
Insured unemployment (average weekly volume)	3,362	2,969	2,681	2,586	2,743	2,656	2,488	2,582	3,061	3,778	4,470	4,376	4,280
Rate of insured unemployment	3.9	3.4	3.1	3.0	3.1	3.0	2.9	3.0	3.5	4.3	5.1	5.0	4.9
Weeks of unemployment compensated	13,504	11,871	9,799	9,928	10,486	9,594	9,565	9,424	10,052	14,582	15,862	15, 831	18,084
Average weekly benefit amount for total unemployment	$105.63	$105.86	$105.49	$99.02	$103.47	$105.94	$107.39	$108.92	$110.52	$112.83	$114.83	$116.95	$117.06
Total benefits paid	$1,363,812	$1,229,815	$1,008,341	$1,012,764	$1,061,880	$1,004,884	$1,001,020	$987,757	$1,080,810	$1,582,548	$1,764,206	$1,781,880	$2,062,887
Unemployment compensation for ex-servicemen:[3]													
Initial claims[1]	18	16	15	19	22	18	15	11	9	11	8	8	10
Insured unemployment (average weekly volume)	51	46	43	42	44	44	34	29	22	19	16	13	11
Weeks of unemployment compensated	234	214	183	192	203	190	153	116	91	83	66	49	48
Total benefits paid	$24,688	$23,048	$19,865	$21,145	$22,785	$21,425	$17,144	$12,952	$10,043	$10,155	$7,088	$5,311	$5,129
Unemployment compensation for Federal civilian employees:[4]													
Initial claims	12	12	11	13	15	17	18	20	16	17	17	12	13
Insured unemployment (average weekly volume)	36	31	27	25	25	25	29	32	36	39	40	40	38
Weeks of unemployment compensated	156	136	107	105	105	102	100	112	127	174	162	154	172
Total benefits paid	$15,561	$13,701	$11,023	$10,765	$10,805	$9,543	$10,495	$11,719	$13,491	$18,891	$18,040	$17,517	$19,629
Railroad unemployment insurance:													
Applications	5	6	6	26	41	13	15	21	13	19	22	11	9
Insured unemployment (average weekly volume)	44	41	35	30	28	29	34	40	44	54	75	67	85
Number of payments	115	94	79	66	32	63	74	86	83	117	153	140	154
Average amount of benefit payment	$214.93	$201.12	$199.43	$201.06	$189.63	$202.53	$207.98	$197.26	$207.06	$212.33	$213.39	$214.07	$215.71
Total benefits paid	$25,233	$19,230	$15,429	$16,286	$11,541	$7,071	15,046	15,984	$16,377	$25,292	$30,544	$29,011	$33,853
Employment service:[5]													
New applications and renewals	8,778	....	....	12,888	....	....	16,502	....	....	3,363	....	....	5,834
Nonfarm placements	1,585	....	....	2,446	....	....	3,509	....	....	602	....	....	960

[1] Initial claims and State insured unemployment include data under the program for Puerto Rican sugarcane workers.

[2] Includes interstate claims for the Virgin Islands. Excludes transition claims under State programs.

[3] Excludes data on claims and payments made jointly with other programs.

[4] Excludes data on claims and payments made jointly with State programs.

[5] Cumulative total for fiscal year (October 1-September 30). Data computed quarterly.

NOTE: Data for Puerto Rico and the Virgin Islands included. Dashes indicate data not available.

PRICE DATA

PRICE DATA are gathered by the Bureau of Labor Statistics from retail and primary markets in the United States. Price indexes are given in relation to a base period (1967 = 100, unless otherwise noted).

Definitions

The **Consumer Price Index** is a monthly statistical measure of the average change in prices in a fixed market basket of goods and services. Effective with the January 1978 index, the Bureau of Labor Statistics began publishing CPI's for two groups of the population. One index, a new CPI for All Urban Consumers, covers 80 percent of the total noninstitutional population; and the other index, a revised CPI for Urban Wage Earners and Clerical Workers, covers about half the new index population. The All Urban Consumers index includes, in addition to wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctor's and dentist's fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items is kept essentially unchanged between major revisions so that only price changes will be measured. Prices are collected from over 18,000 tenants, 24,000 retail establishments, and 18,000 housing units for property taxes in 85 urban areas across the country. All taxes directly associated with the purchase and use of items are included in the index. Because the CPI's are based on the expenditures of two population groups in 1972–73, they may not accurately reflect the experience of individual families and single persons with different buying habits.

Though the CPI is often called the "Cost-of-Living Index," it measures only price change, which is just one of several important factors affecting living costs. Area indexes do not measure differences in the level of prices among cities. They only measure the average change in prices for each area since the base period.

Producer Price Indexes measure average changes in prices received in primary markets of the United States by producers of commodities in all stages of processing. The sample used for calculating these indexes contains about 2,800 commodities and about 10,000 quotations per month selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The universe includes all commodities produced or imported for sale in commercial transactions in primary markets in the United States.

Producer Price Indexes can be organized by stage of processing or by commodity. The stage of processing structure organizes products by degree of fabrication (that is, finished goods, intermediate or semifinished goods, and crude materials). The commodity structure organizes products by similarity of end-use or material composition.

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States, from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire. Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

In calculating Producer Price Indexes, price changes for the various commodities are averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1972. The detailed data are aggregated to obtain indexes for stage of processing groupings, commodity groupings, durability of product groupings, and a number of special composite groupings.

Price indexes for the output of selected SIC industries measure average price changes in commodities produced by particular industries, as defined in the *Standard Industrial Classification Manual 1972* (Washington, U.S. Office of Management and Budget, 1972). These indexes are derived from several price series, combined to match the economic activity of the specified industry and weighted by the value of shipments in the industry. They use data from comprehensive industrial censuses conducted by the U.S. Bureau of the Census and the U.S. Department of Agriculture.

Notes on the data

Beginning with the May 1978 issue of the *Review*, regional CPI's cross classified by population size, were introduced. These indexes will enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes will be published bimonthly. (See table 21.)

For further details about the new and the revised indexes and a comparison of various aspects of these indexes with the old unrevised CPI, see *Facts About the Revised Consumer Price Index*, a pamphlet in the Consumer Price Index Revision 1978 series. See also *The Consumer Price Index: Concepts and Content Over the Years*, Report 517, revised edition (Bureau of Labor Statistics, May 1978).

For interarea comparisons of living costs at three hypothetical standards of living, see the family budget data published in the *Handbook of Labor Statistics, 1977*, Bulletin 1966 (Bureau of Labor Statistics, 1977), tables 122–133. Additional data and analysis on price changes are provided in the *CPI Detailed Report* and *Producer Prices and Price Indexes*, both monthly publications of the Bureau.

As of January 1976, the Wholesale Price Index (as it was then called) incorporated a revised weighting structure reflecting 1972 values of shipments. From January 1967 through December 1975, 1963 values of shipments were used as weights.

For a discussion of the general method of computing consumer, producer, and industry price indexes, see *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976), chapters 13–15. See also John F. Early, "Improving the measurement of producer price change," *Monthly Labor Review*, April 1978, pp. 7–15. For industry prices, see also Bennett R. Moss, "Industry and Sector Price Indexes," *Monthly Labor Review*, August 1965, pp. 974–82.

19. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967–81

[1967=100]

Year	All items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	116.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.2	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	[illegible]	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	6.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	267.2	11.3	203.7	8.5	213.6	8.8
1981	272.3	10.2	267.8	7.7	293.2	11.4	186.6	5.2	281.3	12.3	295.1	10.4	219.0	7.5	233.3	9.2

20. Consumer Price Index for All Urban Consumers and revised CPI for Urban Wage Earners and Clerical Workers, U.S. city average—general summary and groups, subgroups, and selected items

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981				1982			1981				1982		
	Mar.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Mar.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
All items	265.1	279.9	280.7	281.5	282.5	283.4	283.1	265.2	279.7	280.4	281.1	282.1	282.9	282.5
Food and beverages	265.0	270.3	269.9	270.5	273.6	275.8	275.6	265.5	270.7	270.3	270.8	273.9	276.0	275.9
Housing	282.6	303.5	304.2	305.2	306.1	307.3	306.7	282.2	303.3	303.8	304.7	305.6	306.7	306.2
Apparel and upkeep	185.1	191.5	191.3	190.5	187.3	188.0	191.1	184.3	190.6	190.5	189.4	186.5	187.3	190.5
Transportation	273.5	287.2	289.1	289.8	289.9	288.0	285.1	274.4	288.9	290.8	291.5	291.6	290.6	288.6
Medical care	284.7	304.8	308.2	310.2	313.4	316.2	318.8	287.0	304.0	307.1	309.1	312.0	314.9	317.4
Entertainment	218.2	225.5	226.8	227.3	229.2	231.2	232.8	216.1	223.4	224.3	224.4	226.1	228.1	229.5
Other goods and services	229.7	245.2	245.9	246.7	248.4	250.3	252.2	226.8	241.4	242.5	243.5	245.0	247.1	249.3
Commodities	249.8	257.9	258.0	258.4	258.8	259.5	258.8	250.2	258.4	258.5	258.8	259.3	259.9	259.1
Commodities less food and beverages	230.0	248.0	248.3	248.7	248.0	248.1	247.1	230.4	248.7	249.1	249.3	248.7	248.6	247.5
Nondurables less food and beverages	263.1	268.4	268.7	268.7	265.6	265.3	263.4	265.7	268.6	269.0	268.6	267.8	267.5	265.3
Durables	219.8	232.9	233.2	233.7	233.4	233.7	233.5	217.8	232.0	232.3	232.7	232.4	232.5	232.4
Services	292.5	318.6	320.6	321.8	323.9	325.3	325.5	293.1	319.2	321.1	322.4	324.3	325.5	325.8
Rent, residential	203.0	213.6	215.0	216.5	217.8	218.6	219.6	202.7	213.2	214.5	216.0	217.4	218.1	219.1
Household services less rent	348.8	387.2	389.2	390.4	392.4	393.7	392.5	351.8	391.8	393.6	394.8	396.5	397.7	396.6
Transportation services	262.5	281.0	283.2	284.2	286.6	287.6	288.8	261.3	279.0	282.3	283.6	285.9	286.7	287.9
Medical care services	307.5	329.7	333.7	335.7	339.4	342.4	345.1	310.2	329.3	332.0	334.0	337.5	340.6	343.0
Other services	233.2	247.8	248.7	249.5	251.7	253.0	254.0	233.0	246.6	247.2	248.0	250.0	251.3	252.4
Special indexes:														
All items less food	262.3	279.0	280.1	280.8	281.4	282.1	281.7	262.6	279.1	280.1	280.7	281.3	281.7	281.3
All items less mortgage interest costs	252.3	263.6	264.2	264.9	266.1	267.1	267.2	252.9	264.0	264.6	265.2	266.4	267.2	267.3
Commodities less food	237.0	245.9	246.2	246.5	245.9	246.0	245.2	237.4	246.6	247.0	247.2	246.6	246.6	245.6
Nondurables less food	257.5	260.7	261.1	261.1	260.2	260.1	258.4	259.9	263.0	263.4	263.3	262.4	262.2	260.2
Nondurables less food and apparel	297.3	299.5	300.1	300.7	301.0	300.5	298.6	299.5	301.5	302.0	302.5	302.6	302.0	297.6
Nondurables	265.2	269.5	269.5	269.8	270.8	271.7	270.7	266.6	270.7	270.7	270.9	271.9	272.8	271.6
Services less rent	308.5	338.7	340.8	342.0	344.2	345.7	345.7	310.4	339.7	341.6	342.9	345.0	346.3	348.4
Services less medical care	288.9	315.1	316.9	318.1	320.0	321.1	321.1	289.2	315.8	317.5	318.7	320.5	321.6	321.6
Domestically produced farm foods	255.4	259.5	258.3	258.1	262.4	265.1	263.8	254.9	258.6	257.8	259.2	261.4	264.0	262.7
Selected beef cuts	210.9	275.5	271.9	270.7	269.6	271.7	272.0	273.9	276.5	273.2	271.9	271.1	273.1	273.3
Energy	409.3	414.9	414.1	414.6	416.4	413.0	408.1	413.7	417.9	417.3	417.6	419.0	415.4	407.9
All items less energy	253.8	269.4	270.4	271.1	272.1	273.4	273.6	252.9	268.3	269.2	269.9	270.9	272.1	272.3
All items less food and energy	248.1	265.9	267.2	267.9	268.5	269.5	269.6	246.9	264.8	265.9	266.6	267.1	268.0	268.3
Commodities less food and energy	212.2	223.4	223.8	224.2	203.7	224.5	225.3	210.7	222.6	223.0	223.3	222.8	223.6	224.5
Energy commodities	460.0	448.2	448.2	448.0	446.4	440.1	424.5	460.9	448.9	449.0	448.7	447.0	440.7	425.0
Services less energy	288.9	315.3	317.7	318.9	320.5	321.9	321.5	290.6	316.0	318.2	319.5	321.0	322.2	321.8
Purchasing power of the consumer dollar, 1967 = $1	$0.377	$0.357	$0.356	$0.355	$0.354	$0.353	$0.353	$0.377	$0.358	$0.357	$0.356	$0.354	$0.353	$0.354

NOTE: The correct figure for the September 1981 "All items" Consumer Price Index for All Urban Consumers was 279.3, not 297.3 as previously reported.

20. Continued—Consumer Price Index—U.S. city average

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981				1982			1981				1982		
	Mar.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Mar.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
FOOD AND BEVERAGES	265.0	270.3	269.9	270.5	273.6	275.6	275.6	265.5	270.7	270.3	270.8	273.9	276.0	275.9
Food	272.2	277.8	277.1	277.8	281.0	283.3	283.0	272.6	277.8	277.4	277.9	281.1	283.4	283.1
Food at home	268.6	272.1	271.0	271.7	275.3	278.0	277.1	268.1	271.3	270.4	270.8	274.4	277.0	276.2
Cereals and bakery products	268.7	275.0	276.3	277.7	279.8	280.9	281.3	268.5	274.0	275.5	276.6	278.6	279.8	280.0
Cereals and cereal products (12/77 = 100)	145.2	150.0	149.9	151.5	153.0	154.0	153.9	145.5	151.5	152.1	152.5	153.9	155.0	154.8
Flour and prepared flour mixes (12/77 = 100)	138.5	138.3	138.4	137.8	139.1	139.1	139.2	138.4	140.0	140.2	139.4	139.6	139.6	139.6
Cereal (12/77 = 100)	149.9	156.1	157.4	160.2	163.1	164.8	165.2	149.5	157.9	158.9	162.1	165.1	166.8	167.2
Rice, pasta, and cornmeal (12/77 = 100)	148.9	151.1	149.6	151.7	151.1	152.4	151.2	150.5	152.7	153.9	152.9	152.4	153.6	152.4
Bakery products (12/77 = 100)	138.7	144.0	144.9	145.4	146.4	146.8	147.1	138.2	142.9	143.7	144.3	145.3	145.7	146.0
White bread	232.9	238.4	241.3	241.5	243.3	243.8	242.3	231.2	236.5	237.6	237.4	238.4	240.0	238.3
Other breads (12/77 = 100)	137.9	141.6	142.8	143.4	143.9	143.7	145.1	140.3	143.6	144.8	145.3	145.7	145.5	147.0
Fresh biscuits, rolls, and muffins (12/77 = 100)	140.1	144.8	145.2	145.9	146.5	146.4	148.4	138.4	141.7	141.9	141.9	142.5	142.8	144.6
Fresh cakes and cupcakes (12/77 = 100)	140.0	143.8	145.0	144.8	147.2	147.0	148.0	138.5	141.7	143.2	143.7	145.8	145.8	148.4
Cookies (12/77 = 100)	138.7	145.7	146.3	147.6	148.1	149.2	149.4	140.6	146.4	146.9	148.4	149.9	150.1	150.2
Crackers, bread, and cracker products (12/77 = 100)	129.1	133.2	133.1	134.2	133.4	135.4	135.3	129.6	134.0	133.4	135.6	134.7	136.8	136.5
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	141.1	144.4	144.8	145.4	146.2	147.0	148.3	140.7	144.9	145.8	147.8	149.0	148.3	148.7
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	141.9	148.9	149.2	149.3	151.2	151.5	153.5	137.6	142.6	143.1	142.9	144.7	144.9	146.8
Meats, poultry, fish, and eggs	250.5	259.4	254.2	253.7	253.7	258.8	258.9	249.9	259.0	254.9	253.1	253.3	258.4	258.4
Meats, poultry, and fish	256.2	262.2	259.2	258.4	259.1	261.2	262.1	255.7	261.7	259.9	257.7	258.6	260.7	261.5
Meats	254.4	262.5	259.6	258.7	257.8	260.2	261.2	254.2	262.1	259.3	257.9	257.3	259.7	260.6
Beef and veal	270.3	274.9	271.5	270.5	269.4	271.5	271.7	272.6	275.3	272.2	270.9	270.1	272.2	272.3
Ground beef other than canned	269.7	267.4	266.1	264.5	262.2	265.0	265.6	272.9	268.6	266.0	265.8	263.7	266.3	266.9
Chuck roast	284.1	287.6	282.6	282.2	279.6	285.6	284.3	285.6	287.2	282.6	281.5	280.5	285.0	283.1
Round roast	243.9	246.1	246.0	242.6	241.6	245.3	243.0	248.6	250.1	248.2	245.9	244.7	248.9	245.6
Round steak	256.1	256.0	256.7	254.6	257.5	256.1	256.6	252.3	254.9	254.6	252.2	256.1	254.4	256.4
Sirloin steak	259.6	273.3	262.0	260.1	259.2	257.1	260.6	264.5	275.1	260.7	260.7	259.9	257.8	262.2
Other beef and veal (12/77 = 100)	157.8	163.4	161.1	161.0	160.9	161.4	161.5	158.7	161.3	160.2	158.1	160.3	159.7	160.6
Pork	221.6	236.6	235.6	234.3	234.7	238.9	238.5	221.3	239.3	235.9	235.8	234.4	238.5	238.9
Bacon	218.5	240.1	236.1	237.2	235.5	245.6	248.6	221.6	245.1	242.9	240.5	239.3	249.3	253.3
Chops	209.3	223.1	217.0	212.4	210.2	222.1	216.3	208.9	221.3	216.2	211.0	217.6	220.2	214.7
Ham other than canned (12/77 = 100)	98.7	109.4	108.8	108.1	107.3	107.0	109.2	98.3	107.5	108.6	108.3	104.8	104.7	108.5
Sausage	281.0	299.7	298.1	299.1	297.6	300.0	305.6	282.7	302.1	299.2	300.0	299.8	301.0	306.6
Canned ham	236.6	241.9	243.1	244.3	245.4	246.1	247.6	237.9	244.7	247.0	247.7	249.0	249.9	251.2
Other pork (12/77 = 100)	124.2	134.1	131.1	130.0	129.5	133.8	132.6	124.3	134.5	130.9	129.2	128.6	133.1	131.7
Other meats	258.5	261.6	260.5	260.6	258.1	259.1	262.4	259.0	260.5	259.9	259.7	257.3	257.4	260.7
Frankfurters	257.8	261.2	259.9	261.0	256.7	258.0	260.5	257.2	262.4	260.0	260.0	256.1	257.1	260.0
Bologna, liverwurst, and salami (12/77 = 100)	147.0	147.6	146.7	146.4	145.4	146.1	148.2	144.7	146.9	146.0	146.3	145.4	146.2	148.4
Other lunchmeats (12/77 = 100)	128.1	131.8	132.1	132.6	132.2	131.7	133.7	129.4	130.2	130.6	130.6	130.2	129.7	131.7
Lamb and organ meats (12/77 = 100)	144.7	143.4	141.7	140.7	138.6	137.7	141.0	148.0	146.0	144.6	143.9	141.4	141.0	144.2
Poultry	201.6	198.6	192.3	191.7	194.2	195.7	194.7	200.6	194.7	190.6	189.5	192.4	193.8	192.8
Fresh whole chicken	203.1	194.0	190.9	190.1	193.1	196.2	195.1	200.9	189.9	188.5	187.8	189.8	191.4	190.8
Fresh and frozen chicken parts (12/77 = 100)	131.6	129.2	127.3	128.1	128.5	128.9	127.5	130.1	129.7	126.5	126.3	126.8	127.1	125.8
Other poultry (12/77 = 100)	127.6	127.2	122.2	120.7	123.2	123.2	123.9	128.8	126.1	121.5	119.8	123.0	122.6	123.3
Fish and seafood	358.6	360.8	368.9	358.6	373.3	373.5	379.3	361.5	368.2	369.6	368.6	372.4	373.2	375.6
Canned fish and seafood (12/77 = 100)	138.9	140.5	141.5	140.7	140.6	140.9	141.0	138.2	140.3	141.0	140.2	140.9	140.4	140.5
Fresh and frozen fish and seafood (12/77 = 100)	135.3	135.6	133.9	134.7	143.2	143.2	144.7	132.5	134.0	132.7	134.4	143.0	143.2	144.6
Eggs	180.5	185.9	184.7	196.0	189.4	205.1	195.2	180.5	187.2	188.7	196.6	190.6	206.1	196.3
Dairy products	242.6	244.6	245.0	245.5	245.8	246.5	246.5	242.7	244.2	244.7	244.9	245.2	245.8	245.8
Fresh milk and cream (12/77 = 100)	134.3	134.7	134.9	135.2	135.1	135.5	135.3	134.1	134.4	134.6	134.6	134.6	134.9	134.8
Fresh whole milk	219.9	220.2	220.6	221.2	221.2	221.5	221.7	219.4	219.5	220.1	220.2	220.2	220.6	220.8
Other fresh milk and cream (12/77 = 100)	134.4	135.2	134.9	135.3	135.1	135.8	135.1	134.6	135.2	134.9	134.9	134.7	135.5	134.6
Processed dairy products (12/77 = 100)	141.1	143.3	143.5	143.9	144.4	144.8	144.9	141.8	143.6	144.0	144.2	144.7	145.1	145.3
Butter	243.0	247.2	248.0	248.7	249.3	249.9	250.1	248.4	249.7	250.2	251.3	252.0	251.4	252.7
Cheese (12/77 = 100)	138.8	140.9	141.1	141.0	142.0	142.8	143.3	140.0	140.7	141.1	141.3	142.3	143.1	143.6
Ice cream and related products (12/77 = 100)	145.3	149.9	149.3	150.3	150.6	150.0	149.5	146.1	149.9	149.4	149.4	149.9	148.1	148.8
Other dairy products (12/77 = 100)	135.1	137.0	138.7	139.7	138.4	140.0	138.5	138.1	138.1	140.2	140.5	139.1	140.6	140.3
Fruits and vegetables	278.2	275.2	272.0	276.4	284.7	291.5	292.1	275.0	270.8	268.1	272.6	281.3	287.4	288.1
Fresh fruits and vegetables	283.9	273.5	267.8	274.9	300.0	313.6	302.1	280.4	267.2	261.9	269.4	293.1	312.4	298.1
Fresh fruits	265.2	281.4	276.1	269.6	276.7	291.2	287.8	259.9	279.5	268.0	268.5	267.0	280.1	287.3
Apples	227.9	237.0	249.7	261.2	273.0	279.5	289.7	225.7	236.5	249.1	261.2	272.6	279.8	288.5
Bananas	264.1	254.9	249.4	254.9	250.5	251.0	263.0	258.9	252.3	248.3	252.8	251.1	247.9	261.1
Oranges	287.4	328.5	314.0	286.6	280.1	313.1	316.3	288.4	299.9	289.0	252.8	265.1	281.1	285.9
Other fresh fruits (12/77 = 100)	141.1	160.9	144.7	141.0	145.0	154.5	157.2	139.9	154.7	139.7	138.7	141.0	149.0	151.8
Fresh vegetables	320.8	258.8	260.1	279.8	337.3	346.2	326.1	318.9	256.1	259.2	277.6	326.9	342.5	324.2
Potatoes	363.9	290.4	286.3	286.8	298.6	297.4	301.0	360.6	287.7	281.5	280.0	282.7	291.5	294.8
Lettuce	225.2	258.3	257.1	343.1	514.4	408.9	270.9	219.3	257.2	247.4	342.7	515.6	408.0	271.3
Tomatoes	367.8	307.3	306.9	204.6	345.6	288.5	258.1	364.0	309.4	309.7	207.8	348.8	293.2	261.8
Other fresh vegetables (12/77 = 100)	177.0	138.6	146.0	150.4	174.8	190.1	185.0	177.1	140.0	145.6	149.1	173.8	197.2	184.0
Processed fruits and vegetables	263.3	279.4	279.2	280.6	282.7	284.2	285.8	261.3	277.2	277.3	278.4	280.6	282.0	282.7
Processed fruits (12/77 = 100)	137.6	144.9	145.1	145.0	146.4	147.9	149.0	137.5	144.2	144.6	144.5	146.0	147.4	148.6
Frozen fruit and fruit juices (12/77 = 100)	135.3	144.7	144.9	142.3	143.5	147.8	149.2	134.6	143.4	144.1	141.2	142.8	146.6	148.2
Fruit juices other than frozen (12/77 = 100)	141.2	148.4	148.6	148.5	151.4	151.5	152.4	140.7	147.6	147.4	148.3	150.1	150.3	151.4
Canned and dried fruits (12/77 = 100)	136.7	141.2	141.6	142.6	143.6	144.3	145.3	136.3	141.1	141.8	143.0	144.0	144.8	145.9
Processed vegetables (12/77 = 100)	127.0	135.9	135.4	138.9	137.6	137.7	138.2	125.0	134.9	134.7	135.7	136.5	136.8	137.2
Frozen vegetables (12/77 = 100)	126.9	136.9	137.4	139.1	140.7	141.7	142.0	126.4	137.5	139.2	140.2	141.8	143.1	143.4

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981				1982			1981				1982		
	Mar.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Mar.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
FOOD AND BEVERAGES—Continued														
Food—Continued														
Food at home—Continued														
Fruits and vegetables—Continued														
Cut corn and canned beans except lima (12/77 = 100)	128.4	137.7	138.3	138.9	138.9	140.7	141.2	126.3	135.5	138.0	136.5	137.5	138.3	138.8
Other canned and dried vegetables (12/77 = 100)	128.4	134.6	133.1	134.8	135.0	134.1	134.8	125.3	133.3	131.8	133.2	133.5	132.6	133.3
Other foods at home	324.1	326.4	329.0	325.6	328.7	330.7	331.7	325.2	327.1	327.0	329.4	329.6	331.5	332.6
Sugar and sweets	383.2	388.9	388.1	389.3	381.6	384.2	385.5	384.6	380.2	388.0	389.3	381.6	384.1	385.4
Candy and chewing gum (12/77 = 100)	142.8	148.8	149.3	149.9	150.1	150.0	150.3	143.6	148.7	148.9	148.9	150.0	148.8	150.1
Sugar and artificial sweeteners (12/77 = 100)	209.7	157.1	155.2	153.4	155.6	160.0	161.0	209.6	158.4	157.0	154.6	157.0	161.3	162.4
Other sweets (12/77 = 100)	138.3	145.2	144.9	146.1	147.1	149.9	147.4	138.2	144.0	143.1	144.2	145.2	145.1	145.5
Fats and oils (12/77 = 100)	268.9	268.5	262.2	261.1	261.6	260.5	258.6	270.5	268.1	260.1	261.0	261.5	260.6	258.7
Margarine	265.7	256.6	255.2	256.7	257.8	256.7	256.7	257.7	255.9	254.9	254.9	257.2	258.1	254.1
Nondairy substitutes and peanut butter (12/77 = 100)	179.3	176.5	163.0	160.1	157.7	157.8	156.1	180.0	175.2	163.0	158.5	156.0	158.3	154.4
Other fats, oils, and salad dressings (12/77 = 100)	129.9	130.5	129.8	129.7	130.5	128.8	129.5	130.3	130.3	130.4	130.1	131.0	130.2	130.0
Nonalcoholic beverages	412.2	414.8	413.4	412.5	418.7	423.4	424.8	415.4	416.0	415.2	414.2	420.5	425.0	426.6
Cola drinks, excluding diet cola	295.9	301.1	298.8	298.1	302.4	304.6	305.6	295.4	297.7	295.1	295.7	300.0	302.0	303.8
Carbonated drinks, including diet cola (12/77 = 100)	140.5	142.3	141.4	139.3	141.9	143.8	143.4	138.7	139.6	139.3	137.2	139.7	141.7	141.4
Roasted coffee	350.4	343.1	341.0	344.4	353.3	364.4	366.8	355.0	338.9	337.3	340.1	348.8	358.9	362.2
Freeze dried and instant coffee	348.8	329.9	330.8	332.0	338.9	342.6	343.6	343.9	332.7	333.2	331.6	336.5	342.5	343.4
Other noncarbonated drinks (12/77 = 100)	132.4	135.6	136.4	137.0	138.0	138.4	138.9	132.7	135.5	136.4	137.1	138.2	138.6	139.1
Other prepared foods	249.4	260.5	262.7	262.8	264.6	265.3	266.5	250.0	262.3	264.5	264.4	266.3	266.9	268.1
Canned and packaged soup (12/77 = 100)	129.4	133.1	133.4	132.7	134.3	135.9	135.6	129.2	135.6	136.1	135.7	138.4	137.9	137.8
Frozen prepared foods (12/77 = 100)	142.3	144.1	148.5	145.9	147.8	148.2	147.0	139.6	142.8	145.1	145.3	147.4	145.6	148.5
Snacks (12/77 = 100)	143.9	152.0	152.5	152.2	152.6	153.4	153.4	145.5	155.3	155.6	154.2	154.6	155.2	155.4
Seasonings, olives, pickles, and relish (12/77 = 100)	138.1	146.2	148.9	148.8	149.7	151.3	153.2	137.9	144.8	147.4	147.7	148.6	150.3	152.2
Other condiments (12/77 = 100)	138.1	143.5	145.0	144.6	146.4	148.9	148.2	140.0	145.5	148.5	148.2	148.0	148.4	149.9
Miscellaneous prepared foods (12/77 = 100)	135.9	144.5	144.8	145.8	146.9	147.0	147.7	136.2	143.9	145.2	145.8	147.0	147.1	147.9
Other canned and packaged prepared foods (12/77 = 100)	134.1	140.5	141.8	142.5	142.5	143.0	143.2	134.4	141.9	143.0	143.9	143.9	144.5	144.5
Food away from home	286.1	296.2	297.2	297.7	299.8	301.2	302.4	288.6	299.0	299.6	300.7	302.6	304.2	305.4
Lunch (12/77 = 100)	139.2	143.9	144.4	144.6	146.1	146.6	147.0	140.3	145.3	145.6	146.3	147.7	148.2	149.6
Dinner (12/77 = 100)	138.8	143.2	143.6	144.0	144.8	145.2	145.7	140.1	144.8	145.1	145.6	146.4	146.8	147.3
Other meals and snacks (12/77 = 100)	137.9	143.9	144.6	144.7	145.4	146.9	147.9	139.3	144.8	145.1	145.4	146.2	147.6	148.7
Alcoholic beverages	197.1	201.4	202.3	202.7	204.0	205.6	206.6	198.7	204.3	204.6	204.9	206.0	207.6	208.8
Alcoholic beverages at home (12/77 = 100)	130.1	130.5	131.2	131.4	132.2	133.3	134.0	129.6	132.5	132.8	132.8	133.4	134.6	135.4
Beer and ale	199.2	202.5	204.0	204.1	205.0	207.4	209.2	198.5	203.1	203.6	203.5	204.3	206.5	208.3
Whiskey	141.6	144.0	144.8	145.0	145.9	146.8	147.0	142.3	146.4	146.2	145.9	148.8	147.7	147.8
Wine	224.3	229.2	227.5	230.0	232.2	234.2	235.3	233.6	236.1	237.4	239.0	239.8	241.8	243.3
Other alcoholic beverages (12/77 = 100)	118.0	118.3	117.3	117.3	117.6	117.8	118.1	114.0	115.7	116.8	117.4	117.5	117.8	118.0
Alcoholic beverages away from home (12/77 = 100)	131.1	135.5	135.7	135.8	137.0	137.6	138.2	129.9	136.4	136.6	137.3	138.6	139.1	139.7
HOUSING	282.6	303.5	304.2	305.2	306.1	307.3	308.7	282.2	303.3	303.8	304.7	305.8	306.7	308.2
Shelter	301.6	326.6	327.2	329.0	329.3	329.5	327.6	302.6	328.1	329.5	329.3	329.4	330.3	329.5
Rent, residential	203.0	213.6	215.0	216.5	217.8	218.6	219.6	202.7	213.2	214.5	216.0	217.4	218.1	219.1
Other rental costs	283.6	306.7	305.3	306.3	313.6	316.9	320.1	283.5	309.4	305.0	305.3	312.3	315.6	318.9
Lodging while out of town	304.8	324.2	318.6	318.9	331.1	335.9	340.9	303.2	323.3	317.9	318.0	329.4	333.0	337.9
Tenants' insurance (12/77 = 100)	130.1	140.0	140.4	140.7	141.8	143.5	144.1	130.8	140.1	140.3	140.6	142.0	143.8	144.3
Homeownership	336.8	368.7	367.2	367.8	367.5	368.7	365.7	338.8	369.7	369.8	370.4	369.9	370.8	367.9
Home purchase	261.1	272.5	270.2	270.5	269.3	270.4	269.2	260.2	271.4	269.6	269.7	267.4	268.3	267.1
Financing, taxes, and insurance	441.1	501.8	505.6	506.3	506.0	507.2	500.9	446.4	508.3	511.9	512.9	512.2	513.2	507.0
Property insurance	375.6	382.5	383.3	384.1	383.0	383.7	384.1	379.9	384.7	385.5	386.5	385.9	386.0	386.5
Property taxes	190.0	207.4	209.0	210.7	212.9	215.1	216.6	201.0	209.2	210.0	212.5	214.5	217.2	218.5
Contracted mortgage interest cost	570.9	661.3	666.8	666.6	665.2	666.1	655.5	572.0	662.5	667.7	668.1	666.3	668.6	656.4
Mortgage interest rates	216.0	239.5	244.1	243.9	244.4	243.9	240.7	216.7	240.5	245.3	245.3	245.7	245.4	242.3
Maintenance and repairs	306.1	320.6	322.8	324.1	325.7	328.2	327.2	302.7	319.2	319.8	321.0	323.3	324.6	323.7
Maintenance and repair services	332.6	351.1	353.8	355.4	358.2	359.4	357.8	331.3	354.2	354.9	356.5	358.2	360.1	358.6
Maintenance and repair commodities	243.9	249.3	249.7	250.3	252.5	254.6	256.0	239.9	244.0	244.5	244.9	246.4	248.2	248.6
Paint and wallpaper, supplies, tools, and equipment (12/77 = 100)	143.7	146.7	146.5	147.3	149.4	150.9	151.8	138.5	139.9	140.0	140.5	142.3	143.7	144.7
Lumber, awnings, glass, and masonry (12/77 = 100)	123.3	124.4	124.1	124.3	124.6	124.6	123.9	122.4	122.3	121.8	121.6	121.9	121.7	121.2
Plumbing, electrical, heating, and cooling supplies (12/77 = 100)	127.6	132.4	133.1	131.5	131.9	133.8	133.4	127.8	132.1	132.4	131.6	131.8	133.4	133.1
Miscellaneous supplies and equipment (12/77 = 100)	125.9	131.7	131.6	132.5	133.6	134.8	135.1	128.8	133.7	134.2	134.7	135.7	136.9	137.1
Fuel and other utilities	308.4	330.1	329.8	331.8	336.2	337.1	339.3	309.4	330.9	330.9	332.7	337.0	337.9	340.2
Fuels	393.7	419.0	417.6	420.0	426.9	427.6	430.5	389.4	418.4	417.4	419.6	426.2	425.8	429.9
Fuel oil, coal, and bottled gas	680.4	672.7	676.1	682.5	686.0	683.1	664.0	686.3	675.9	679.3	685.5	688.9	686.0	666.7
Fuel oil	730.9	704.3	708.8	713.5	716.8	713.8	692.3	733.2	707.1	708.6	716.0	718.3	716.3	694.4
Other fuels (6/78 = 100)	181.5	165.0	167.7	169.4	170.9	170.0	168.0	162.9	166.4	168.1	170.8	172.1	171.4	169.5
Gas (piped) and electricity	326.7	360.6	359.3	359.9	367.4	368.7	375.9	325.9	360.3	357.5	358.8	[illegible]	367.3	374.8
Electricity	273.9	303.0	298.6	300.3	306.6	306.8	313.3	273.5	302.7	297.7	298.3	305.3	305.5	312.3
Utility (piped) gas	365.2	434.5	437.0	438.2	447.2	450.8	458.6	362.8	430.8	436.0	436.4	445.2	448.7	456.8

30. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981				1982			1981				1982		
	Mar.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Mar.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
HOUSING—Continued														
Fuel and other utilities—Continued														
Other utilities and public services	174.0	180.4	180.7	181.9	182.7	183.9	186.0	174.4	180.8	181.0	182.2	183.1	184.3	185.4
Telephone services	142.5	154.3	155.6	156.8	157.2	157.9	158.5	142.6	154.5	155.8	156.9	157.3	158.0	158.6
Local charges (12/77 = 100)	113.6	121.5	123.5	124.4	124.0	125.3	125.6	113.7	121.8	123.8	124.6	124.2	125.4	125.7
Interstate toll calls (12/77 = 100)	101.8	116.6	116.7	116.7	116.8	116.6	117.7	101.9	116.6	116.8	116.8	116.9	116.7	117.8
Intrastate toll calls (12/77 = 100)	101.2	105.5	106.3	107.1	108.2	108.1	108.0	101.0	105.3	105.0	106.9	109.0	108.8	108.7
Water and sewerage maintenance	277.1	305.2	308.1	307.4	309.8	313.3	318.9	279.0	307.3	307.9	309.4	312.2	315.7	319.7
Household furnishings and operations	216.9	225.6	227.2	227.7	230.4	230.2	231.6	213.7	222.2	223.6	224.2	224.9	226.7	228.0
Housefurnishings	182.6	188.7	189.4	189.2	189.8	191.4	192.7	180.2	186.6	187.3	187.1	187.7	189.3	190.4
Textile housefurnishings	199.8	210.4	211.7	211.2	210.1	216.0	217.7	201.4	214.1	214.7	213.9	212.5	218.5	219.9
Household linens (12/77 = 100)	123.1	130.1	130.8	128.8	127.3	131.0	134.7	124.1	132.0	131.9	129.8	128.6	132.1	135.6
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	126.1	132.2	133.1	134.7	134.8	138.5	136.7	127.2	135.2	136.1	137.4	137.0	141.0	138.7
Furniture and bedding	201.6	207.9	209.2	209.7	209.5	209.4	212.1	199.0	203.6	205.3	206.0	205.9	205.5	208.2
Bedroom furniture (12/77 = 100)	131.2	137.4	139.6	139.6	139.7	140.5	140.8	129.4	132.3	135.2	135.2	136.5	137.1	137.2
Sofas (12/77 = 100)	115.8	119.3	118.7	119.4	117.3	116.4	118.0	114.1	119.0	118.8	119.5	117.6	116.5	118.2
Living room chairs and tables (12/77 = 100)	116.5	117.0	118.8	119.0	118.9	118.6	121.6	116.7	118.5	118.9	118.1	118.0	118.8	121.8
Other furniture (12/77 = 100)	130.8	137.3	137.1	138.4	138.5	138.1	140.5	128.3	133.0	133.1	134.0	133.9	133.4	135.8
Appliances including TV and sound equipment	144.2	147.8	148.2	147.9	148.6	149.6	150.1	143.4	147.2	147.7	147.5	148.5	149.6	149.7
Television and sound equipment (12/77 = 100)	108.0	109.1	109.0	108.9	108.8	109.2	109.1	108.4	108.1	108.3	108.0	107.9	108.4	109.2
Television	105.6	105.0	104.8	104.7	104.4	104.5	104.7	104.3	103.8	103.6	103.3	103.1	103.3	103.5
Sound equipment (12/77 = 100)	111.2	113.8	113.9	113.7	113.8	114.5	114.0	109.3	112.8	113.4	112.9	113.0	113.8	113.2
Household appliances	168.9	175.3	176.1	175.9	178.0	179.7	180.3	169.0	175.1	175.9	178.0	178.1	179.9	180.4
Refrigerators and home freezers	168.5	177.0	178.7	179.9	180.8	182.6	183.7	172.7	181.6	182.7	185.3	186.1	187.9	189.3
Laundry equipment (12/77 = 100)	124.5	130.5	130.7	130.5	132.2	133.5	133.3	124.3	129.8	130.8	130.3	132.4	133.8	133.5
Other household appliances (12/77 = 100)	115.9	118.9	119.4	118.7	120.6	121.6	122.2	114.5	117.1	117.4	118.8	118.5	119.7	120.0
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	115.1	118.2	118.7	117.9	119.4	121.0	121.9	115.2	115.9	116.8	116.2	117.4	118.9	119.3
Office machines, small electric appliances, and air conditioners (12/77 = 100)	116.9	119.8	120.1	119.6	121.9	122.4	122.5	113.7	118.4	118.1	117.3	119.7	120.5	120.7
Other household equipment (12/77 = 100)	129.1	134.2	134.4	134.0	134.9	136.7	137.3	126.9	132.4	132.4	131.9	132.9	134.7	135.3
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	130.7	135.4	136.1	135.9	136.3	139.1	140.9	123.2	129.6	129.7	128.3	128.6	131.0	133.3
Clocks, lamps, and decor items (12/77 = 100)	125.7	128.7	129.5	129.4	129.6	129.8	129.0	121.7	124.5	125.2	124.7	124.8	126.0	125.4
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	135.6	141.1	141.2	141.0	142.3	143.3	143.1	132.1	137.9	137.5	137.1	138.2	138.5	139.0
Lawn equipment, power tools, and other hardware (12/77 = 100)	125.8	127.2	126.9	126.3	127.8	130.3	132.1	125.1	131.2	131.6	131.5	133.2	135.5	137.3
Housekeeping supplies	264.2	274.3	275.4	277.4	279.1	282.4	284.2	261.2	271.2	271.9	274.1	275.7	278.8	280.4
Soaps and detergents	255.3	269.3	269.7	271.6	275.5	278.0	279.5	250.8	265.3	265.2	268.0	272.0	274.4	275.7
Other laundry and cleaning products (12/77 = 100)	129.7	136.7	137.3	138.8	139.6	141.0	142.1	130.3	136.6	137.0	137.5	138.4	139.8	140.9
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	137.9	141.8	143.6	144.5	145.1	145.7	145.7	138.1	142.4	143.9	144.4	145.1	145.6	146.4
Stationery, stationery supplies, and gift wrap (12/77 = 100)	122.3	128.1	128.5	128.8	128.8	130.4	130.7	123.7	130.8	131.3	131.6	131.7	123.4	123.8
Miscellaneous household products (12/77 = 100)	137.3	142.6	143.0	145.4	146.2	146.9	147.5	133.2	137.8	137.4	140.4	141.2	141.8	142.4
Lawn and garden supplies (12/77 = 100)	136.6	136.6	136.8	136.7	137.1	141.8	144.7	128.5	129.0	129.6	129.4	129.2	134.1	136.7
Housekeeping services	284.8	303.5	305.2	306.9	307.4	308.1	309.9	283.3	299.9	303.9	305.4	305.9	306.8	308.2
Postage	274.3	308.0	337.5	337.5	337.5	337.5	337.5	274.2	306.1	337.5	337.5	337.5	337.5	337.5
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	139.0	145.5	147.0	147.8	149.4	149.4	150.8	139.0	145.2	146.7	147.6	149.0	149.1	150.6
Appliance and furniture repair (12/77 = 100)	124.5	131.3	132.2	133.0	133.6	134.2	135.0	123.8	130.5	131.2	131.6	132.2	132.8	133.5
APPAREL AND UPKEEP	186.1	191.5	191.3	190.5	187.3	189.0	191.1	184.3	189.6	189.5	188.4	186.5	187.3	189.5
Apparel commodities	178.3	182.1	181.8	180.7	177.0	177.6	180.8	175.8	181.5	181.5	180.1	176.7	177.4	180.8
Apparel commodities less footwear	172.7	178.4	177.9	176.6	172.8	173.4	176.8	172.3	177.7	177.3	175.6	172.2	173.0	176.6
Men's and boys'	175.0	183.6	183.6	181.6	178.7	179.3	181.7	174.9	182.9	183.2	181.7	178.6	179.4	181.6
Men's (12/77 = 100)	110.2	115.9	115.9	114.5	112.9	113.0	114.5	110.1	115.8	115.9	115.0	113.3	113.5	114.7
Suits, sport coats, and jackets (12/77 = 100)	103.2	109.8	109.9	106.4	104.3	104.8	107.2	99.5	102.0	102.0	99.5	97.8	98.2	100.4
Coats and jackets (12/77 = 100)	97.9	102.4	102.8	101.4	96.4	95.8	97.1	99.9	104.9	105.1	104.1	97.6	97.2	99.7
Furnishings and special clothing (12/77 = 100)	127.2	134.3	133.6	134.2	133.6	134.7	136.8	121.5	130.0	129.8	130.6	129.8	131.1	133.1
Shirts (12/77 = 100)	118.0	123.0	123.0	122.7	120.7	118.3	119.9	119.2	125.5	125.4	125.3	123.3	121.8	122.3
Dungarees, jeans, and trousers (12/77 = 100)	104.7	109.2	108.8	108.5	108.2	108.6	108.6	110.0	114.7	115.5	114.1	113.6	114.1	114.2
Boys' (12/77 = 100)	113.7	118.1	118.0	117.2	114.6	116.0	117.8	112.9	116.4	116.5	115.4	112.9	114.3	116.1
Coats, jackets, sweaters, and shirts (12/77 = 100)	105.5	111.9	111.6	109.9	104.7	105.9	109.4	108.5	113.5	112.8	110.9	105.3	108.3	109.7
Furnishings (12/77 = 100)	121.2	125.6	127.0	127.5	127.3	128.2	128.7	117.4	121.8	123.3	123.5	123.3	124.2	124.7
Suits, trousers, sport coats, and jackets (12/77 = 100)	118.5	119.9	119.3	118.8	117.2	119.1	120.1	113.9	116.6	116.9	115.9	114.7	116.7	117.8
Women's and girls'	157.5	161.2	160.6	159.6	154.3	154.7	160.3	158.9	162.7	162.1	160.7	158.4	157.1	163.0
Women's (12/77 = 100)	104.4	106.8	106.3	105.8	102.3	102.9	106.8	105.5	108.1	107.6	107.1	103.9	104.8	109.0
Coats and jackets	157.9	167.3	164.0	161.8	158.4	156.4	162.0	156.9	171.4	166.3	167.3	161.6	163.1	173.1
Dresses	166.4	169.9	165.0	164.0	153.1	152.8	163.1	154.3	151.5	151.9	149.5	146.7	149.9	148.1
Separates and sportswear (12/77 = 100)	99.3	100.4	101.1	100.7	96.7	96.3	100.3	101.6	102.3	101.9	101.3	97.3	98.8	101.2
Underwear, nightwear, and hosiery (12/77 = 100)	117.8	123.0	124.1	124.8	124.0	126.2	127.1	117.7	123.4	124.0	124.5	123.7	126.0	126.9
Suits (12/77 = 100)	93.0	92.4	89.5	87.7	84.2	87.0	92.7	109.5	110.2	108.5	106.0	104.0	105.6	114.1
Girls' (12/77 = 100)	106.4	109.2	109.2	107.7	104.4	102.7	105.6	106.4	108.4	108.4	106.0	104.2	103.1	106.0
Coats, jackets, dresses, and suits (12/77 = 100)	101.2	99.8	100.3	98.4	93.4	92.6	98.2	98.4	99.8	99.9	95.1	91.2	91.5	97.2
Separates and sportswear (12/77 = 100)	108.2	112.0	111.3	108.9	106.3	103.4	104.6	109.1	110.6	110.2	107.5	108.2	106.0	105.9
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	115.6	119.6	120.0	120.7	118.2	118.0	119.6	114.6	118.5	119.0	119.5	118.2	117.0	118.7

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981				1982			1981				1982		
	Mar.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Mar.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
APPAREL AND UPKEEP—Continued														
Apparel commodities—Continued														
Apparel commodities less footwear—Continued														
Infants' and toddlers'	255.3	268.5	264.9	259.4	258.6	262.2	264.7	266.4	281.6	274.1	270.6	270.1	271.4	275.4
Other apparel commodities	212.2	216.2	214.8	214.5	212.9	214.3	212.7	204.5	208.2	206.1	200.2	201.4	202.8	201.6
Sewing materials and notions (12/77 = 100)	113.3	118.1	118.6	118.3	116.2	117.6	118.1	113.3	116.3	116.4	116.2	114.3	115.9	118.5
Jewelry and luggage (12/77 = 100)	147.3	149.0	147.5	147.4	146.7	147.4	145.7	140.9	141.1	141.0	138.4	137.5	138.1	138.7
Footwear	197.4	204.2	205.4	205.7	202.8	202.8	204.9	195.9	204.1	208.2	205.9	203.1	203.3	205.2
Men's (12/77 = 100)	125.2	129.3	130.3	130.7	130.3	130.7	132.5	125.4	130.3	132.3	132.5	132.2	132.6	134.5
Boys' and girls' (12/77 = 100)	127.6	131.1	132.1	132.1	130.1	129.5	129.2	127.3	132.2	134.0	134.8	132.5	132.3	132.1
Women's (12/77 = 100)	120.0	124.9	125.2	125.4	122.6	122.7	124.7	117.0	122.5	122.9	121.6	118.9	119.0	120.8
Apparel services	252.4	263.2	264.6	266.4	267.6	269.4	271.3	251.5	262.1	262.3	264.4	265.5	267.2	269.0
Laundry and drycleaning other than coin operated (12/77 = 100)	149.6	157.1	158.2	159.2	160.0	161.4	162.4	149.3	156.4	156.3	157.8	158.5	159.9	160.9
Other apparel services (12/77 = 100)	133.7	137.5	137.9	139.1	139.4	139.8	141.1	133.9	138.3	138.6	139.6	139.9	140.3	141.5
TRANSPORTATION	273.5	287.2	289.1	289.8	289.9	288.0	285.1	274.4	288.9	290.8	291.5	291.6	289.6	286.6
Private	271.7	283.9	285.8	286.5	286.6	284.5	281.3	273.2	286.4	288.3	289.0	289.0	286.9	283.7
New cars	182.9	182.5	195.3	197.0	197.4	195.5	194.4	182.7	192.7	195.2	196.9	197.3	195.3	194.2
Used cars	235.4	278.2	281.4	281.9	280.5	279.7	280.9	235.4	278.2	281.4	281.9	280.5	279.7	280.9
Gasoline	420.7	408.9	409.5	408.4	406.0	399.1	383.9	422.3	411.3	410.9	409.8	407.5	400.6	385.4
Automobile maintenance and repair	287.7	301.3	302.8	304.1	305.5	307.7	310.2	288.2	301.8	303.4	304.8	306.2	308.4	311.1
Body work (12/77 = 100)	140.3	148.7	149.9	150.6	151.5	153.7	154.5	140.2	147.2	148.3	148.9	149.8	152.1	152.7
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	137.7	144.0	144.2	144.7	145.7	146.5	148.7	140.2	146.5	147.3	148.5	149.5	150.2	152.8
Maintenance and servicing (12/77 = 100)	134.8	140.3	140.9	141.5	142.0	142.7	143.9	134.7	140.3	140.5	141.0	141.5	142.3	143.4
Power plant repair (12/77 = 100)	137.0	144.0	144.9	145.6	146.2	147.3	148.0	135.9	143.5	144.7	145.1	145.7	146.8	147.5
Other private transportation	234.7	247.5	249.5	250.6	253.3	253.4	254.5	237.3	250.6	253.0	254.2	256.9	256.8	257.8
Other private transportation commodities	208.2	212.7	213.4	214.5	215.5	214.8	215.6	208.0	216.1	216.8	216.9	218.0	217.3	218.2
Motor oil, coolant, and other products (12/77 = 100)	141.6	148.0	148.5	148.7	148.2	149.3	150.2	139.8	144.8	146.7	147.2	146.9	147.8	148.7
Automobile parts and equipment (12/77 = 100)	132.1	136.0	136.4	137.2	138.1	137.4	137.9	133.7	138.9	139.2	139.2	140.0	139.4	139.8
Tires	184.1	189.4	189.7	191.5	192.8	191.3	191.7	186.9	194.6	195.1	195.2	196.5	195.1	195.5
Other parts and equipment (12/77 = 100)	129.2	133.4	134.1	133.9	134.3	134.6	135.7	129.5	134.3	134.1	133.8	134.5	134.9	135.9
Other private transportation services	244.6	250.1	261.5	262.6	265.8	266.1	267.2	247.4	262.2	265.1	266.6	269.7	269.8	270.8
Automobile insurance	254.4	264.6	265.4	266.0	266.6	268.1	269.8	253.9	264.3	265.0	265.6	266.6	268.0	269.6
Automobile finance charges (12/77 = 100)	184.3	184.4	188.7	190.5	190.9	188.9	188.9	163.4	183.1	187.6	189.9	190.3	188.3	188.2
Automobile rental, registration, and other fees (12/77 = 100)	118.2	120.2	120.7	120.8	127.6	128.9	129.7	119.9	120.0	121.1	121.4	128.4	129.5	130.1
State registration	148.9	147.9	149.0	149.0	168.9	167.1	168.5	147.0	148.0	149.0	149.0	166.2	166.5	167.8
Drivers' licenses (12/77 = 100)	105.4	109.9	110.4	111.9	117.3	121.7	122.9	105.1	109.8	110.3	111.9	117.1	121.7	123.0
Vehicle inspection (12/77 = 100)	120.1	(¹)	(¹)	128.3	129.2	129.3	129.3	128.7	(¹)	(¹)	129.0	130.5	130.6	130.6
Other vehicle-related fees (12/77 = 100)	136.4	141.2	141.3	141.6	142.5	144.8	145.3	148.9	146.5	148.6	149.2	150.4	152.4	152.5
Public	293.9	330.8	333.2	333.8	334.9	336.8	336.7	295.1	328.6	328.2	328.6	329.4	331.0	331.0
Airline fare	343.7	372.0	374.5	374.7	375.5	379.3	379.0	342.3	372.9	373.1	372.8	372.7	376.3	373.3
Intercity bus fare	323.2	361.3	362.2	365.2	367.3	365.7	365.6	323.9	362.1	362.9	366.1	368.9	367.4	367.0
Intracity mass transit	250.8	301.7	304.4	304.6	305.9	306.7	306.6	249.1	301.3	303.6	303.9	305.1	305.8	305.7
Taxi fare	273.8	289.3	291.3	294.7	296.3	296.7	297.2	280.5	298.1	300.4	304.1	305.6	306.1	306.6
Intercity train fare	276.7	315.0	319.2	319.2	318.1	314.0	314.1	277.1	314.9	318.9	318.9	317.9	314.5	314.5
MEDICAL CARE	284.7	304.8	308.2	310.2	313.4	316.2	318.8	287.0	304.0	307.1	309.1	312.0	314.9	317.4
Medical care commodities	180.7	192.1	193.1	194.9	195.9	197.7	200.0	181.2	192.9	193.8	195.4	196.4	198.3	200.6
Prescription drugs	166.5	178.6	179.6	181.0	181.9	183.7	186.1	168.8	179.4	180.3	181.9	182.8	184.7	187.0
Anti-infective drugs (12/77 = 100)	130.5	136.8	138.3	137.8	138.2	138.4	139.3	131.0	130.6	138.9	139.7	140.1	140.4	141.1
Tranquilizers and sedatives (12/77 = 100)	132.8	141.9	143.6	144.8	145.4	148.8	146.8	131.5	141.3	143.3	144.4	144.9	146.5	148.3
Circulatories and diuretics (12/77 = 100)	122.2	129.5	130.4	131.9	132.2	134.0	135.7	123.7	130.5	131.0	131.8	132.1	134.0	135.6
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	148.2	161.9	163.3	164.6	165.6	168.4	170.8	147.8	162.8	164.1	165.9	168.9	169.7	172.0
Pain and symptom control drugs (12/77 = 100)	132.7	144.1	144.9	145.9	147.3	148.8	150.8	134.1	144.2	145.4	147.3	148.7	150.3	152.3
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	128.3	136.8	137.5	138.1	138.8	139.9	142.7	128.5	136.1	138.8	138.0	138.8	139.9	142.7
Nonprescription drugs and medical supplies (12/77 = 100)	128.9	137.0	137.8	139.2	139.9	141.1	142.5	130.5	137.9	138.5	139.7	140.4	141.6	143.2
Eyeglasses (12/77 = 100)	124.6	127.4	127.8	129.4	128.3	128.9	129.5	122.6	126.0	126.7	127.1	127.1	127.6	128.1
Internal and respiratory over-the-counter drugs	204.2	217.3	218.6	221.6	222.8	225.1	228.1	205.5	219.5	220.2	222.8	223.9	226.4	229.6
Nonprescription medical equipment and supplies (12/77 = 100)	125.0	132.7	133.7	134.6	135.9	137.1	138.1	127.1	133.8	134.7	135.2	136.6	137.7	138.8
Medical care services	307.5	329.7	333.7	335.7	339.4	342.4	345.1	310.2	328.3	332.0	334.0	337.5	340.6	343.0
Professional services	269.6	286.4	288.4	290.0	292.0	294.2	295.8	274.2	286.2	288.2	290.3	292.2	294.3	295.9
Physicians' services	280.3	307.9	311.3	313.0	315.5	318.8	320.3	298.3	310.9	314.1	316.0	318.6	321.7	323.2
Dental services	254.9	271.6	272.3	273.9	275.8	276.8	278.6	250.8	269.5	270.1	272.3	274.1	274.9	276.6
Other professional services (12/77 = 100)	131.5	138.9	139.5	140.3	140.3	141.5	142.4	129.9	134.9	136.2	137.2	137.2	138.5	139.4
Other medical care services	353.4	382.1	388.4	390.9	396.8	400.8	404.7	354.4	380.3	386.2	388.1	393.8	399.0	401.6
Hospital and other medical services (12/77 = 100)	147.1	159.0	161.9	162.7	165.6	167.1	168.5	146.7	157.9	160.6	161.1	164.0	165.7	166.9
Hospital room	460.9	503.0	515.4	518.3	529.4	533.8	538.5	459.2	498.9	509.6	512.6	522.0	527.0	531.0
Other hospital and medical care services (12/77 = 100)	146.7	157.2	159.2	159.6	162.2	163.8	165.2	146.3	156.1	158.3	158.4	161.2	163.0	164.2

20. Continued—Consumer Price Index—U.S. city average

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981				1982			1981				1982		
	Mar.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Mar.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
ENTERTAINMENT	218.2	225.5	226.8	227.3	229.2	231.2	232.8	218.1	223.4	224.3	224.4	226.1	228.1	229.5
Entertainment commodities	222.1	228.9	230.3	230.6	232.0	234.3	236.6	218.0	224.2	225.5	225.4	226.7	229.0	230.8
Reading materials (12/77 = 100)	133.2	138.7	139.8	139.6	142.9	144.1	146.1	133.0	138.3	139.3	139.1	142.1	143.3	145.3
Newspapers	256.6	267.1	267.6	267.7	270.5	273.1	276.4	256.7	266.9	267.5	267.6	270.1	272.8	276.0
Magazines, periodicals, and books (12/77 = 100)	136.2	141.9	143.9	143.5	149.0	149.9	152.4	136.3	141.9	143.7	143.4	148.8	149.7	152.2
Sporting goods and equipment (12/77 = 100)	126.1	128.3	130.2	130.0	129.5	131.5	132.3	120.3	121.4	122.8	122.4	122.4	123.9	124.3
Sport vehicles (12/77 = 100)	128.5	129.4	(1)	132.1	(1)	133.9	135.4	118.5	118.6	(1)	120.2	(1)	121.9	122.5
Indoor and warm weather sport equipment (12/77 = 100)	116.2	119.2	119.6	119.9	120.1	119.6	119.9	115.2	117.3	118.2	117.9	118.2	117.7	118.1
Bicycles	188.4	194.4	194.3	193.9	194.8	197.3	197.6	189.4	195.9	196.3	195.2	196.2	196.9	196.9
Other sporting goods and equipment (12/77 = 100)	121.2	126.6	126.7	126.2	125.3	127.0	125.6	119.3	126.2	126.9	126.3	125.2	127.4	126.0
Toys, hobbies, and other entertainment (12/77 = 100)	127.2	131.3	131.3	132.0	132.2	133.2	134.5	126.3	130.5	130.8	130.9	131.2	132.3	133.5
Toys, hobbies, and music equipment (12/77 = 100)	125.6	129.6	129.7	130.1	130.8	131.7	133.4	123.1	126.2	126.7	126.9	127.7	128.6	130.2
Photographic supplies and equipment (12/77 = 100)	124.0	126.0	125.5	125.2	125.2	126.9	128.3	125.5	127.8	127.5	126.3	126.3	127.9	129.5
Pet supplies and expenses (12/77 = 100)	132.3	138.3	138.3	140.2	139.7	140.6	140.8	132.8	139.9	140.1	140.9	140.5	141.6	141.7
Entertainment services	213.0	221.0	222.3	223.0	225.5	227.1	227.8	213.8	223.3	223.4	223.9	226.1	227.8	229.4
Fees for participant sports (12/77 = 100)	129.8	136.4	137.3	137.6	139.6	140.9	141.9	129.6	138.9	139.1	139.3	141.2	142.5	143.5
Admissions (12/77 = 100)	125.3	128.3	128.9	128.7	131.2	131.6	131.2	125.9	128.2	128.3	128.7	130.1	130.6	130.3
Other entertainment services (12/77 = 100)	121.0	123.1	123.4	123.7	124.2	125.0	125.1	121.7	124.2	124.1	124.3	124.7	125.9	125.9
OTHER GOODS AND SERVICES	229.7	245.2	245.9	246.7	248.4	250.3	252.2	226.8	241.4	242.5	243.5	245.0	247.1	249.3
Tobacco products	212.5	225.3	226.2	226.8	227.1	230.7	234.1	212.4	224.5	225.4	225.9	226.2	229.8	233.2
Cigarettes	214.8	228.1	228.9	229.7	230.0	233.6	237.3	214.9	227.2	228.1	228.7	229.1	232.7	236.3
Other tobacco products and smoking accessories (12/77 = 100)	128.0	134.0	134.7	134.4	134.7	136.8	138.1	128.1	134.7	135.0	134.7	135.0	136.9	138.2
Personal care	226.9	236.9	237.7	239.1	240.9	242.3	243.7	225.1	234.1	235.5	237.1	238.8	240.4	241.8
Toilet goods and personal care appliances	222.4	231.6	232.5	234.7	236.4	238.5	240.6	220.9	231.4	233.1	235.4	236.9	239.2	241.5
Products for the hair, hairpieces, and wigs (12/77 = 100)	131.4	134.9	135.4	136.5	137.2	138.4	140.8	128.4	131.8	133.3	135.8	136.4	137.8	140.0
Dental and shaving products (12/77 = 100)	135.3	139.8	140.5	141.2	144.0	145.6	148.0	133.3	138.0	139.3	139.8	142.6	144.2	146.6
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	123.9	131.2	131.8	133.2	134.1	135.0	135.1	123.4	131.6	132.2	133.7	134.5	135.8	136.1
Other toilet goods and small personal care appliances (12/77 = 100)	128.3	133.7	134.3	136.0	135.9	137.0	137.4	130.7	138.2	139.1	139.1	138.9	140.2	140.7
Personal care services	231.7	242.3	243.1	243.9	245.7	246.5	247.3	229.4	237.1	238.1	239.2	241.0	241.8	242.6
Beauty parlor services for women	233.6	243.9	244.8	245.2	246.9	247.7	248.9	230.8	236.7	237.8	238.8	240.5	241.3	242.5
Haircuts and other barber shop services for men (12/77 = 100)	129.2	135.6	135.9	136.8	138.0	138.4	138.4	128.4	134.5	134.9	135.7	136.8	137.2	137.2
Personal and educational expenses	255.2	284.6	284.9	285.1	288.1	289.2	290.4	256.0	284.8	285.6	285.9	288.9	290.2	201.7
Schoolbooks and supplies	230.5	254.5	254.6	254.5	260.7	262.9	263.3	234.4	258.3	258.3	258.5	264.8	267.1	267.5
Personal and educational services	261.2	291.7	292.1	292.3	294.8	295.8	297.1	261.6	291.6	292.5	292.8	295.2	296.3	298.0
Tuition and other school fees	132.8	149.0	149.1	149.1	150.5	150.6	151.1	133.0	149.3	149.4	149.4	150.7	150.9	151.7
College tuition (12/77 = 100)	132.3	148.2	148.3	148.3	149.9	150.1	150.7	132.3	148.1	148.1	148.1	149.6	149.8	150.9
Elementary and high school tuition (12/77 = 100)	134.4	151.6	152.0	152.0	152.1	152.2	152.2	134.4	152.2	152.7	152.7	152.8	152.9	152.9
Personal expenses (12/77 = 100)	138.7	152.3	152.8	153.4	154.3	156.1	157.4	138.1	150.4	152.1	152.7	153.7	155.3	156.7
Special indexes:														
Gasoline, motor oil, coolant, and other products	414.5	404.3	403.9	402.8	400.5	393.9	379.3	415.9	405.4	405.1	404.0	401.8	395.3	380.6
Insurance and finance	373.6	419.0	422.2	423.1	423.9	424.8	420.9	373.0	417.6	420.9	422.1	422.8	423.5	419.9
Utilities and public transportation	265.2	292.7	292.6	293.9	297.7	299.1	302.7	263.6	291.6	291.5	292.6	296.4	297.7	301.5
Housekeeping and home maintenance services	318.3	335.9	339.6	341.3	343.0	344.0	344.0	317.2	337.3	339.9	341.5	343.3	344.2	344.0

[1] Not available.

21. Consumer Price Index for All Urban Consumers: Cross classification of region and population size class by expenditure category and commodity and service group

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000-1.250 million)			Size class C (75,000-385,000)			Size class D (75,000 or less)		
	1991			1991			1991			1991		
	Oct.	Dec.	Feb.	Oct.	Dec.	Feb.	Oct.	Dec.	Feb.	Oct.	Dec.	Feb.
	Northeast											
EXPENDITURE CATEGORY												
All items	143.8	144.2	144.2	152.3	152.9	150.7	158.2	159.2	158.1	149.2	150.7	151.4
Food and beverages	139.7	139.6	143.3	139.9	139.6	142.7	142.6	142.8	145.7	137.4	137.0	140.4
Housing	147.8	148.0	146.0	161.4	161.9	155.7	170.1	176.3	172.5	156.6	159.3	159.5
Apparel and upkeep	118.9	117.5	117.0	124.8	123.1	120.5	124.8	125.8	123.1	126.5	125.4	119.9
Transportation	156.3	157.9	156.5	164.0	165.4	164.2	162.0	162.7	161.6	159.7	161.8	161.7
Medical care	140.0	142.0	145.1	143.6	146.6	147.0	146.5	146.3	148.7	142.3	143.0	144.8
Entertainment	131.8	131.9	133.3	129.6	131.0	132.4	129.5	133.7	136.1	133.2	134.3	137.6
Other goods and services	134.6	135.4	136.9	138.0	138.7	140.6	141.5	142.0	142.9	137.5	139.5	140.6
COMMODITY AND SERVICE GROUP												
Commodities	142.1	141.8	142.1	149.6	149.6	147.9	149.8	151.1	150.1	146.4	147.2	147.6
Commodities less food and beverages	143.7	143.2	141.4	154.3	154.5	150.5	153.1	154.9	152.2	150.7	152.1	151.0
Services	148.0	147.3	146.9	158.5	158.0	155.1	166.7	172.5	171.0	153.5	156.1	157.3
	North Central region											
EXPENDITURE CATEGORY												
All items	152.6	152.6	153.6	148.8	149.2	151.9	145.9	147.4	149.1	146.7	147.8	151.0
Food and beverages	139.7	139.8	141.6	139.3	139.3	140.8	140.3	140.7	143.1	143.3	143.4	144.7
Housing	164.4	163.3	164.9	153.6	153.8	159.9	147.5	150.0	152.7	148.3	149.1	155.5
Apparel and upkeep	115.5	113.7	112.7	127.2	128.0	121.1	123.4	122.4	121.8	123.1	123.6	119.5
Transportation	161.2	162.9	161.1	159.5	160.8	159.7	161.2	162.3	161.0	158.6	160.1	160.3
Medical care	142.8	144.6	149.4	145.6	146.8	150.8	145.3	147.7	150.3	147.7	151.2	154.5
Entertainment	132.2	134.1	137.1	123.8	124.4	126.4	131.3	132.6	136.1	128.4	129.2	132.5
Other goods and services	136.0	137.0	138.8	142.4	142.9	145.1	135.1	135.6	137.3	140.4	141.7	144.6
COMMODITY AND SERVICE GROUP												
Commodities	145.7	145.1	145.2	142.9	142.9	145.4	141.4	142.2	143.5	140.7	140.7	142.1
Commodities less food and beverages	148.5	147.6	146.9	144.4	144.4	147.3	141.9	142.8	143.6	139.6	139.5	141.0
Services	162.9	163.7	166.1	158.3	159.5	162.6	153.3	156.1	158.4	156.2	156.7	165.0
	South											
EXPENDITURE CATEGORY												
All items	150.9	152.0	152.6	153.4	155.9	157.2	149.2	152.3	154.0	149.4	150.8	152.3
Food and beverages	141.2	141.4	144.2	141.1	141.3	144.8	141.2	141.9	144.1	144.0	143.4	146.1
Housing	158.6	160.3	160.2	162.5	166.7	168.3	154.7	159.7	162.7	153.5	156.2	158.8
Apparel and upkeep	124.4	123.5	122.6	122.6	123.7	121.1	118.3	118.2	117.0	111.8	110.4	105.7
Transportation	160.6	161.9	161.5	162.3	164.1	162.8	160.2	162.3	160.7	160.6	161.6	159.9
Medical care	141.6	143.2	145.9	145.9	147.6	150.5	148.8	153.0	155.4	156.3	160.1	162.5
Entertainment	127.1	127.4	129.3	133.4	137.1	140.0	134.8	136.4	140.4	138.8	138.4	140.4
Other goods and services	139.2	139.7	141.2	139.5	139.5	140.7	138.5	139.9	142.0	139.5	140.5	147.9
COMMODITY AND SERVICE GROUP												
Commodities	145.0	145.9	146.8	145.7	147.5	148.4	143.6	145.3	146.0	144.1	145.1	145.0
Commodities less food and beverages	146.6	147.9	148.0	147.7	150.1	149.9	144.6	146.7	146.6	144.2	145.8	144.6
Services	159.3	160.5	160.7	164.9	168.6	170.4	157.9	163.1	166.3	157.4	159.5	163.3
	West											
EXPENDITURE CATEGORY												
All items	156.3	156.1	157.9	155.0	155.1	157.1	149.2	149.4	150.2	152.1	149.1	153.3
Food and beverages	140.3	140.8	143.9	144.9	145.4	147.9	141.4	140.1	143.4	145.5	145.8	148.1
Housing	167.1	165.5	167.2	162.6	161.6	164.9	153.5	153.8	154.4	153.9	146.1	153.9
Apparel and upkeep	121.8	121.9	121.7	127.6	127.1	126.4	116.5	117.1	118.8	135.9	135.6	131.9
Transportation	161.8	162.9	164.2	163.5	165.0	163.6	162.1	162.8	160.9	162.5	164.6	164.5
Medical care	150.5	155.7	157.8	148.1	151.3	153.7	149.4	151.1	154.8	150.4	152.8	157.9
Entertainment	133.0	133.6	135.1	132.5	133.9	135.5	131.4	129.4	130.4	144.4	145.6	147.8
Other goods and services	140.1	141.0	144.5	141.4	142.8	145.3	136.1	136.8	137.1	145.5	148.0	147.6
COMMODITY AND SERVICE GROUP												
Commodities	145.1	144.9	146.0	147.0	147.2	148.4	144.4	143.7	145.2	146.2	145.5	147.5
Commodities less food and beverages	147.1	146.6	146.9	147.8	148.0	148.6	145.6	145.1	145.9	146.5	145.4	147.3
Services	171.2	170.9	173.7	166.0	166.0	169.1	156.1	157.5	157.3	160.9	154.6	161.8

22. Consumer Price Index—U.S. city average, and selected areas

[1967=100 unless otherwise specified]

Area[1]	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981				1982			1981				1982		
	Mar.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Mar.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
U.S. city average[2]	265.1	279.9	280.7	281.5	282.5	283.4	283.1	265.2	279.7	280.4	281.1	282.1	282.9	282.5
Anchorage, Alaska (10/67=100)	241.1	...	253.7	...	253.0	...	260.0	236.2	...	249.3	...	248.6	...	254.5
Atlanta, Ga.	...	281.5	...	282.2	...	279.8	...	...	283.0	...	284.1	...	282.7	...
Baltimore, Md.	270.3	...	280.7	...	282.1	...	281.9	269.6	...	280.9	...	282.3	...	282.2
Boston, Mass.	262.3	...	274.2	...	274.0	...	280.8	261.8	...	274.3	...	273.4	...	280.8
Buffalo, N.Y.	...	282.5	...	284.3	...	259.9	...	...	281.2	...	282.7	...	258.0	...
Chicago, Ill.-Northwestern Ind.	259.7	276.1	277.0	273.9	275.4	274.9	276.4	258.9	276.3	277.3	274.4	275.9	275.4	276.5
Cincinnati, Ohio-Ky.-Ind.	266.1	...	278.6	...	285.7	...	284.9	267.7	...	279.0	...	286.4	...	287.2
Cleveland, Ohio	...	282.8	...	281.6	...	285.9	...	...	282.3	...	281.2	...	285.0	...
Dallas-Ft. Worth, Tex.	...	292.5	...	295.1	...	293.6	...	...	288.8	...	291.0	...	289.8	...
Denver-Boulder, Colo.	281.4	...	297.8	...	305.4	...	309.2	285.8	...	302.8	...	310.5	...	315.0
Detroit, Mich.	268.2	281.5	279.6	278.3	280.8	277.8	278.2	263.6	278.2	276.4	275.1	277.8	274.8	275.1
Honolulu, Hawaii	...	259.3	...	258.3	...	262.2	...	...	259.1	...	259.3	...	263.2	...
Houston, Tex.	...	300.0	...	302.7	...	304.1	...	...	295.9	...	298.8	...	300.3	...
Kansas City, Mo.-Kansas	...	272.6	...	273.5	...	276.0	...	...	271.3	...	272.0	...	274.1	...
Los Angeles-Long Beach, Anaheim, Calif.	263.3	281.3	281.8	282.3	285.8	285.6	286.6	266.5	284.9	285.5	286.1	289.8	289.4	290.4
Miami, Fla. (11/77=100)	140.0	...	153.6	...	155.2	...	155.1	141.7	...	154.7	...	156.4	...	156.4
Milwaukee, Wis.	269.9	...	287.5	...	291.3	...	289.3	274.6	...	291.5	...	295.3	...	292.5
Minneapolis-St. Paul, Minn.-Wis.	...	291.6	...	298.7	...	306.0	...	...	291.6	...	298.3	...	305.3	...
New York, N.Y.-Northeastern N.J.	253.9	268.0	267.8	267.9	268.5	269.0	267.4	253.7	267.0	266.9	266.9	267.5	267.8	265.9
Northeast, Pa. (Scranton)	257.6	...	272.2	...	272.5	...	267.2	260.6	...	275.2	...	274.5	...	266.4
Philadelphia, Pa.-N.J.	258.3	274.7	274.1	274.9	275.7	275.5	274.7	259.5	275.2	274.5	274.1	275.1	275.1	274.3
Pittsburgh, Pa.	...	277.7	...	281.8	...	278.6	...	...	278.4	...	282.6	...	280.0	...
Portland, Oreg.-Wash.	268.1	...	278.7	...	288.4	...	286.7	267.0	...	276.3	...	285.5	...	283.9
St. Louis, Mo.-Ill.	259.3	...	273.8	...	278.4	...	280.7	259.4	...	273.0	...	277.1	...	279.3
San Diego, Calif.	293.1	...	321.3	...	323.1	...	319.0	288.0	...	315.1	...	317.4	...	313.9
San Francisco-Oakland, Calif.	...	297.0	...	294.0	...	295.8	...	...	295.6	...	292.7	...	294.9	...
Seattle-Everett, Wash.	271.1	...	289.2	...	295.9	...	293.4	267.9	...	285.7	...	291.9	...	289.6
Washington, D.C.-Md.-Va.	262.3	...	275.5	...	278.0	...	278.8	264.2	...	279.3	...	281.8	...	283.8

[1] The areas listed include not only the central city but the entire portion of the Standard Metropolitan Statistical Area, as defined for the 1970 Census of Population, except that the Standard Consolidated Area is used for New York and Chicago.

[2] Average of 85 cities.

23. Producer Price Indexes, by stage of processing

[1967=100]

Commodity grouping	Annual average 1981	1981 Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.[1]	1982 Jan.	Feb.	Mar.	Apr.
FINISHED GOODS														
Finished goods	269.8	268.5	269.6	270.5	271.8	271.5	271.5	274.3	274.7	r275.4	277.4	277.4	278.8	278.9
Finished consumer goods	271.2	270.6	271.5	272.3	273.5	273.0	273.1	275.1	276.2	r275.8	277.4	278.1	277.2	278.8
Finished consumer foods	253.5	251.9	252.8	253.8	257.6	256.3	256.2	254.0	252.7	r252.9	256.4	258.2	257.1	258.8
Crude	263.6	279.3	263.1	258.9	262.7	256.9	253.5	253.8	260.0	r273.9	260.1	262.0	262.9	266.1
Processed	250.6	247.4	248.8	251.3	255.0	254.2	254.4	252.0	249.9	r248.0	252.2	253.9	254.4	257.1
Nondurable goods less foods	319.4	320.4	321.0	322.0	322.5	322.1	324.2	324.3	325.4	r326.3	328.1	328.3	328.0	324.9
Durable goods	218.5	216.6	218.1	218.2	218.1	218.3	215.8	224.5	224.7	r225.4	225.8	223.5	223.5	223.8
Consumer nondurable goods less food and energy	208.6	207.3	207.7	208.4	209.5	210.4	211.8	212.6	213.6	r213.9	216.2	218.8	219.6	221.4
Capital equipment	264.3	260.8	262.5	263.8	265.4	266.8	265.3	271.5	273.0	r274.1	276.1	274.8	275.7	277.1
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	306.0	305.8	306.7	307.2	308.5	310.1	309.7	309.4	309.0	r309.4	311.3	311.3	310.9	310.1
Materials and components for manufacturing	286.2	284.1	285.1	285.8	287.9	289.8	290.2	290.2	289.5	r289.3	290.8	291.3	290.8	290.8
Materials for food manufacturing	260.9	263.1	259.0	262.4	260.5	261.0	254.6	250.9	248.8	r245.6	252.9	254.3	252.0	254.3
Materials for nondurable manufacturing	285.9	284.3	287.0	287.7	289.2	291.0	291.2	290.9	289.4	r288.8	289.4	288.5	288.5	288.1
Materials for durable manufacturing	312.2	310.6	311.2	310.7	314.4	316.0	317.1	316.7	314.9	r314.0	314.2	313.5	311.2	311.2
Components for manufacturing	259.2	255.4	258.3	257.3	259.5	261.8	263.8	265.1	268.9	r267.8	269.7	271.1	272.0	272.9
Materials and components for construction	287.5	288.0	288.5	289.6	290.4	290.7	290.0	290.1	290.2	r291.1	291.9	292.8	293.3	293.8
Processed fuels and lubricants	595.0	608.5	608.7	605.7	602.0	607.8	601.4	596.9	595.1	r598.1	605.7	597.1	583.5	578.8
Manufacturing industries	498.2	509.0	510.7	505.4	500.3	508.3	500.5	497.5	496.4	r499.0	507.7	498.7	487.1	487.6
Nonmanufacturing industries	680.5	698.2	695.2	694.3	692.0	695.6	680.5	684.7	682.2	r685.6	692.0	683.9	678.4	680.9
Containers	276.2	274.3	276.4	277.2	278.8	280.3	280.6	280.9	280.6	r280.2	282.2	285.2	286.5	287.4
Supplies	263.9	262.4	264.0	264.6	266.0	266.1	266.1	266.6	267.2	r268.3	268.8	270.7	270.9	272.3
Manufacturing industries	253.2	250.6	252.3	253.4	255.0	256.0	256.8	258.2	259.2	r261.0	262.5	263.5	264.8	266.6
Nonmanufacturing industries	269.6	268.7	270.2	270.5	272.0	271.6	271.1	271.2	271.6	r272.4	273.9	274.8	274.4	276.0
Feeds	230.4	239.2	242.9	235.4	232.8	229.1	221.3	215.9	212.0	r214.6	215.2	212.7	208.8	212.9
Other supplies	278.4	272.9	273.8	276.3	278.7	279.3	280.7	282.3	283.7	r284.1	285.8	287.6	288.1	288.1
CRUDE MATERIALS														
Crude materials for further processing	329.1	336.3	334.4	335.4	337.3	333.0	327.4	319.9	313.8	r311.5	318.2	321.5	319.8	322.8
Foodstuffs and feedstuffs	257.4	263.5	260.6	264.3	267.2	261.8	253.4	245.7	238.3	233.7	242.5	248.3	247.9	254.3
Nonfood materials	481.6	492.1	492.4	487.4	487.2	485.3	486.0	479.2	476.3	r478.6	481.1	479.3	475.0	470.4
Nonfood materials except fuel	413.9	432.5	428.3	418.1	413.1	413.9	410.2	404.1	397.8	r398.2	399.7	395.1	387.4	379.0
Manufacturing industries	429.6	450.2	445.5	434.2	429.7	429.6	425.4	418.6	411.7	r409.8	413.2	407.6	398.5	388.0
Construction	262.4	261.5	261.7	262.6	262.6	263.1	263.6	264.7	264.8	r265.2	268.6	272.1	275.1	275.3
Crude fuel	676.5	716.6	738.4	759.2	781.2	766.7	789.7	779.0	792.5	r813.0	810.0	823.5	837.7	853.7
Manufacturing industries	865.4	821.9	850.6	877.2	902.6	883.0	911.4	898.4	915.8	r942.5	936.3	953.4	972.8	982.4
Nonmanufacturing industries	674.3	645.8	662.2	678.5	698.1	687.8	704.8	697.8	708.2	r724.0	723.6	734.4	744.5	757.8
SPECIAL GROUPINGS														
Finished goods excluding foods	273.2	272.1	273.3	274.1	274.7	274.6	274.7	279.1	280.0	r280.9	282.3	281.8	281.5	280.6
Finished consumer goods excluding foods	276.3	276.1	277.0	277.7	277.9	277.7	277.9	281.6	282.4	r283.2	284.4	284.1	283.3	281.7
Finished consumer goods less energy	233.9	231.8	232.8	233.4	235.0	235.0	234.9	237.2	237.2	r237.6	239.8	240.8	240.7	242.4
Intermediate materials less foods and feeds	310.1	309.5	310.7	311.2	312.7	314.5	314.6	314.8	314.5	r314.9	316.6	316.6	316.3	315.3
Intermediate materials less energy	285.2	283.7	284.7	285.5	287.2	288.5	288.7	288.8	288.5	r288.7	290.1	290.9	290.7	291.2
Intermediate foods and feeds	250.7	254.9	253.1	253.2	251.1	250.2	243.5	239.3	235.2	r236.2	240.4	240.6	237.8	240.7
Crude materials less agricultural products	545.8	558.0	557.5	551.3	550.6	549.1	551.4	543.4	540.7	r543.5	545.7	543.9	538.2	532.2
Crude materials less energy	254.0	261.1	257.9	259.7	261.8	258.0	250.4	243.2	235.8	231.6	239.2	243.4	242.8	247.3

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[1] Data for December 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r=revised.

24. Producer Price indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981									1982			
			Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.[1]	Jan.	Feb.	Mar.	Apr.
	All commodities	293.4	293.4	294.1	294.8	296.2	296.4	295.7	296.1	295.5	r295.8	298.2	298.5	297.9	297.8
	All commodities (1957-59 = 100)	311.3	311.3	312.0	312.8	314.3	314.5	313.7	314.2	313.5	r313.8	316.4	316.7	316.1	316.1
	Farm products and processed foods and feeds	251.5	253.8	252.9	254.3	258.8	254.2	250.3	246.0	242.5	r241.0	246.2	248.5	247.5	251.4
	Industrial commodities	304.1	303.5	304.7	305.1	306.2	307.2	307.4	309.0	309.3	r310.0	311.7	311.4	311.0	309.8
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	254.9	263.3	258.6	260.7	263.3	257.9	251.1	243.1	237.4	r234.6	242.1	247.1	244.6	250.6
01-1	Fresh and dried fruits and vegetables	267.0	296.1	275.3	263.3	265.6	256.1	252.8	248.8	254.0	r280.5	288.3	289.3	296.4	296.7
01-2	Grains	248.4	284.7	257.7	257.1	257.4	242.7	227.0	227.6	226.5	213.6	225.2	223.2	220.9	226.0
01-3	Livestock	248.0	246.6	251.8	263.0	266.5	262.0	257.3	244.5	231.1	225.0	236.8	251.2	255.6	267.6
01-4	Live poultry	201.2	195.4	207.2	210.0	215.3	210.3	198.7	186.7	175.0	171.4	188.8	187.3	197.7	186.2
01-5	Plant and animal fibers	242.0	274.2	258.3	259.6	251.3	232.5	208.5	211.7	198.5	188.4	198.2	193.6	188.7	207.4
01-6	Fluid milk	287.4	287.2	283.6	286.0	284.3	286.0	287.3	284.3	288.2	286.7	287.6	285.8	282.5	280.3
01-7	Eggs	187.1	198.2	185.0	174.6	185.1	180.7	183.2	183.8	209.7	195.5	187.0	200.6	204.0	192.1
01-8	Hay, hayseeds, and oilseeds	274.1	298.3	290.0	285.3	290.0	284.3	267.2	230.4	221.1	218.8	218.4	217.6	213.7	222.8
01-9	Other farm products	274.3	295.9	259.7	242.7	250.2	253.0	269.9	263.3	273.1	280.2	280.1	273.7	273.0	274.2
02	Processed foods and feeds	248.7	247.6	248.2	248.9	252.2	251.2	248.9	248.6	244.3	r243.6	247.4	248.3	248.1	250.8
02-1	Cereal and bakery products	255.5	253.9	258.3	256.4	258.3	257.7	258.5	256.9	256.5	r255.1	256.6	255.3	254.2	253.8
02-2	Meats, poultry, and fish	246.2	238.1	245.2	248.6	257.1	264.4	253.3	246.6	240.8	r236.1	244.2	247.4	249.7	257.1
02-3	Dairy products	245.7	245.4	244.6	245.2	245.1	245.3	245.5	246.8	246.9	247.2	247.7	248.0	248.0	248.4
02-4	Processed fruits and vegetables	261.1	258.0	259.4	262.5	265.9	267.3	270.0	271.7	270.5	r271.8	272.8	274.7	275.7	274.5
02-5	Sugar and confectionery	276.8	284.5	262.8	274.8	268.0	267.3	248.8	248.7	244.1	r247.6	260.8	260.3	255.0	256.4
02-6	Beverages and beverage materials	247.5	248.0	247.6	248.1	249.0	249.4	249.1	250.0	251.4	r251.9	253.5	254.2	256.7	256.6
02-7	Fats and oils	227.5	232.4	229.2	227.3	234.8	229.5	224.3	223.4	221.5	r219.1	217.0	218.1	214.1	218.6
02-8	Miscellaneous processed foods	250.1	249.9	251.1	251.5	252.2	252.1	253.0	249.9	250.1	250.1	250.5	250.9	249.6	249.5
02-9	Prepared animal feeds	230.3	237.7	241.0	234.3	232.2	228.9	222.9	218.1	214.7	r217.2	217.7	215.4	212.0	216.1
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	199.6	197.6	199.2	200.1	201.3	202.4	202.9	204.0	203.6	r203.4	203.7	204.2	205.0	204.7
03-1	Synthetic fibers (12/75 = 100)	156.7	151.5	156.4	157.9	159.7	161.2	161.0	162.7	161.6	r161.5	163.7	164.1	163.8	162.1
03-2	Processed yarns and threads (12/75 = 100)	137.8	135.0	138.6	139.3	140.3	142.0	142.3	144.4	140.3	r136.6	135.3	134.9	140.8	140.4
03-3	Gray fabrics (12/75 = 100)	146.7	146.6	145.8	147.4	148.2	148.0	148.1	148.0	147.4	r147.2	148.3	147.4	147.1	145.8
03-4	Finished fabrics (12/75 = 100)	125.2	124.9	125.7	125.6	126.0	126.8	126.8	126.7	126.5	r125.6	126.7	126.9	125.7	125.5
03-81	Apparel	185.5	184.3	185.2	186.2	187.2	187.8	189.0	189.9	190.0	r191.0	190.1	191.0	191.7	192.2
03-82	Textile housefurnishings	229.2	222.1	224.0	223.9	227.1	228.8	232.2	233.0	233.4	r233.6	241.9	245.5	246.2	248.5
04	Hides, skins, leather, and related products	261.5	263.5	263.7	261.6	261.1	261.3	261.7	260.0	259.8	r260.7	264.5	263.3	262.7	264.4
04-2	Leather	318.5	337.8	330.0	321.0	319.0	313.7	313.2	313.7	311.3	r312.3	320.3	317.8	315.5	313.2
04-3	Footwear	241.2	241.1	241.4	241.5	242.4	242.5	242.9	239.6	239.8	r240.1	241.4	239.2	240.6	243.7
04-4	Other leather and related products	243.5	238.5	244.2	244.3	242.9	245.1	245.0	245.0	245.4	r245.4	252.7	253.3	253.3	253.2
05	Fuels and related products and power	694.4	707.2	709.0	707.6	704.9	704.3	703.5	698.1	698.1	r702.5	705.8	697.6	690.1	671.2
05-1	Coal	497.3	486.1	487.3	491.7	505.5	507.0	510.2	510.8	512.7	r515.2	526.1	529.1	527.0	532.5
05-2	Coke	456.5	430.1	467.9	469.7	469.7	469.7	469.7	469.7	469.7	r469.7	470.3	470.3	468.1	468.1
05-3	Gas fuels[2]	939.8	907.8	933.9	954.6	980.4	949.3	976.6	985.6	983.0	r1,003.7	990.2	987.9	983.8	996.6
05-4	Electric power	366.8	355.5	360.4	368.6	374.6	385.8	383.8	378.4	378.3	r384.2	392.5	392.6	404.1	408.7
05-61	Crude petroleum[3]	803.6	842.5	839.9	815.9	798.9	796.8	798.8	788.2	785.9	r787.2	787.4	770.4	745.0	718.0
05-7	Petroleum products, refined[4]	805.8	840.9	835.3	828.1	816.3	813.4	806.1	802.3	798.3	r798.6	802.9	789.4	770.5	733.4
06	Chemicals and allied products	287.8	286.0	288.6	290.5	291.3	293.3	293.3	292.4	292.0	r291.8	293.4	294.5	294.8	294.5
06-1	Industrial chemicals[5]	363.8	362.4	368.5	369.7	370.4	371.5	371.8	367.9	363.7	r362.8	363.8	362.8	362.6	358.6
06-21	Prepared paint	249.9	248.1	250.0	250.0	250.7	250.7	250.7	250.7	254.5	r256.4	259.3	259.3	259.3	259.3
06-22	Paint materials	300.2	295.4	300.3	300.8	304.5	308.5	308.0	308.1	308.3	r305.8	308.7	308.6	306.8	306.8
06-3	Drugs and pharmaceuticals	193.4	191.0	192.4	193.2	195.5	195.0	197.8	198.5	198.2	r198.9	200.9	203.0	204.8	206.6
06-4	Fats and oils, inedible	295.6	312.7	312.1	303.1	290.9	305.6	285.6	277.7	282.5	280.4	272.8	274.2	280.1	282.6
06-5	Agricultural chemicals and chemical products	284.8	277.8	279.1	288.9	288.9	293.4	292.6	293.1	295.7	r294.9	295.8	297.9	297.0	296.3
06-6	Plastic resins and materials	289.2	285.1	287.9	290.0	295.9	297.5	296.8	299.5	293.2	r294.2	293.8	295.9	296.8	296.1
06-7	Other chemicals and allied products	254.4	255.3	254.8	256.3	254.8	257.3	257.4	258.9	259.9	r260.0	262.8	265.0	267.7	269.0
07	Rubber and plastic products	232.8	230.8	231.8	233.4	232.1	234.1	235.7	237.3	238.0	r238.3	238.5	241.0	241.8	241.9
07-1	Rubber and rubber products	256.7	253.0	254.4	256.8	254.7	258.9	260.3	262.9	264.4	r264.6	267.3	268.7	268.3	268.7
07-11	Crude rubber	281.7	279.8	283.2	285.2	284.2	284.7	283.1	279.8	279.0	r280.8	281.8	282.1	282.8	283.2
07-12	Tires and tubes	250.9	250.7	251.2	251.2	246.8	249.9	258.5	257.1	255.9	r255.4	256.6	256.6	256.3	254.4
07-13	Miscellaneous rubber products	252.4	243.8	245.7	250.9	251.4	253.1	253.9	261.1	266.7	r267.2	272.6	274.9	278.1	278.8
07-2	Plastic products (6/78 = 100)	128.4	128.2	128.6	129.1	128.7	129.8	129.9	130.3	130.3	r130.6	130.5	130.9	132.0	132.4
08	Lumber and wood products	292.8	299.4	298.4	298.1	296.5	294.5	289.3	284.3	282.1	r285.4	285.7	285.4	285.4	286.1
08-1	Lumber	325.2	333.6	336.3	335.8	332.4	329.9	320.2	311.7	306.6	r309.9	310.6	308.3	308.1	311.5
08-2	Millwork	273.4	276.5	274.8	272.2	273.6	272.3	271.4	271.3	271.8	r273.7	276.6	278.4	276.4	276.4
08-3	Plywood	245.7	256.0	248.3	251.5	247.8	245.6	240.8	234.3	233.5	r230.7	236.8	235.7	237.1	234.1
08-4	Other wood products	239.2	238.3	238.2	239.8	240.7	239.8	240.5	239.9	239.3	r239.4	239.4	239.8	239.6	237.7

See footnotes at end of table.

24. Continued—Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1980	1981									1982			
			Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.[1]	Jan.	Feb.	Mar.	Apr.
	INDUSTRIAL COMMODITIES—Continued														
09	Pulp, paper, and allied products	273.7	271.4	272.1	272.9	274.9	275.9	277.8	279.2	280.4	r281.0	283.9	285.4	286.3	287.9
09-1	Pulp, paper, and products, excluding building paper and board	271.0	269.6	269.9	271.2	272.3	273.7	274.8	275.7	275.8	r275.6	276.1	277.0	277.3	278.4
09-11	Woodpulp	388.1	394.1	394.2	394.2	394.2	394.2	394.2	402.3	413.7	r413.7	412.8	412.8	414.1	392.3
09-12	Wastepaper	175.7	184.2	182.7	182.9	182.1	182.1	178.5	165.1	144.5	143.4	135.2	128.8	129.2	129.1
09-13	Paper	280.0	275.2	275.9	278.5	279.7	282.1	285.9	287.8	287.4	r287.2	288.8	289.5	289.5	291.7
09-14	Paperboard	258.2	255.7	258.8	259.2	259.4	260.6	261.6	261.7	261.6	r260.0	259.7	261.4	261.1	261.2
09-15	Converted paper and paperboard products	256.0	257.3	258.8	259.9	261.2	262.4	262.8	263.2	263.1	r263.2	263.9	264.9	265.5	265.0
09-2	Building paper and board	231.3	232.5	237.3	237.4	235.5	234.2	234.2	233.3	232.1	r230.3	233.2	231.1	237.5	235.5
10	Metals and metal products	300.4	298.8	299.1	298.4	302.0	304.1	304.9	305.3	304.2	r303.3	305.1	306.0	307.6	303.8
10-1	Iron and steel	333.6	331.0	330.4	330.1	338.8	338.9	338.8	341.3	340.0	r338.9	343.1	343.0	342.4	342.6
10-13	Steel mill products	337.6	331.8	331.8	332.2	344.9	344.9	345.3	348.7	348.6	348.9	350.8	350.5	350.5	352.2
10-2	Nonferrous metals	296.0	290.4	287.7	284.5	282.8	287.3	289.4	285.4	281.1	r277.1	275.4	274.2	267.6	268.1
10-3	Metal containers	315.8	314.1	314.1	314.1	315.2	318.7	318.8	318.2	318.1	r318.8	323.4	325.4	326.1	329.7
10-4	Hardware	252.4	258.5	259.4	259.7	263.8	265.3	267.8	269.5	271.5	r272.0	271.3	272.5	275.7	276.2
10-5	Plumbing fixtures and brass fittings	267.4	265.3	266.2	268.9	270.9	271.2	271.6	272.9	273.1	r274.0	274.4	276.1	278.9	280.3
10-6	Heating equipment	223.9	219.8	222.3	223.5	226.4	227.9	228.5	229.0	228.8	r229.9	232.2	231.9	233.5	235.8
10-7	Fabricated structural metal products	295.4	93.1	294.0	295.0	297.9	299.3	300.0	302.6	303.2	r303.0	303.1	303.5	304.5	305.0
10-8	Miscellaneous metal products	270.8	267.2	269.7	269.4	272.0	272.9	273.7	276.1	276.0	r278.3	284.3	284.0	284.6	285.3
11	Machinery and equipment	263.1	258.6	260.7	262.1	264.6	266.2	268.1	269.3	270.4	r272.0	273.5	274.9	275.7	277.3
11-1	Agricultural machinery and equipment	287.7	282.5	285.7	286.8	288.1	290.3	292.6	295.5	300.6	r302.8	302.2	303.7	304.6	306.1
11-2	Construction machinery and equipment	320.8	317.0	318.4	320.1	323.8	325.0	326.5	329.3	329.6	332.0	337.0	338.1	337.4	341.4
11-3	Metalworking machinery and equipment	301.2	296.7	299.9	301.3	302.9	303.5	305.3	306.6	307.9	r312.9	313.7	315.8	317.0	318.7
11-4	General purpose machinery and equipment	288.5	284.4	285.9	287.0	290.6	292.3	293.9	295.1	296.2	r297.9	298.6	300.8	301.5	302.9
11-6	Special industry machinery and equipment	308.0	303.2	307.2	308.8	311.0	310.3	312.8	314.6	315.0	r316.4	319.5	320.3	320.6	323.1
11-7	Electrical machinery and equipment	220.1	217.4	217.5	219.2	221.1	222.8	224.2	225.3	226.0	r227.0	228.3	229.4	230.5	231.6
11-9	Miscellaneous machinery	252.3	248.5	248.8	250.1	254.0	256.0	256.5	258.0	258.8	r260.4	261.3	263.4	264.1	265.4
12	Furniture and household durables	198.4	196.4	197.4	197.3	198.5	199.6	201.0	201.3	202.1	r202.9	202.7	203.9	204.7	205.6
12-1	Household furniture	219.4	216.5	216.4	218.6	220.0	220.7	222.2	222.8	225.1	r226.6	228.2	228.3	228.5	230.6
12-2	Commercial furniture	257.6	254.5	257.7	257.9	258.7	259.1	261.6	262.1	263.3	r263.9	266.6	271.6	273.9	274.5
12-3	Floor coverings	178.6	175.3	178.5	180.7	182.8	181.9	181.7	180.9	182.3	r181.4	179.6	179.8	179.8	180.3
12-4	Household appliances	188.8	185.1	185.5	186.1	188.8	189.1	190.1	190.8	190.9	r191.3	192.0	193.6	195.9	196.3
12-5	Home electronic equipment	89.1	90.9	90.8	86.7	87.4	87.6	87.8	88.1	88.0	r89.6	87.5	87.5	88.8	88.2
12-6	Other household durable goods	260.8	275.3	276.7	276.4	282.1	280.9	285.8	285.8	285.3	r286.2	282.8	283.0	284.3	283.5
13	Nonmetallic mineral products	309.5	310.8	312.0	313.6	314.3	314.1	313.2	313.3	313.7	r313.5	315.1	318.4	319.7	320.0
13-11	Flat glass	212.9	210.2	210.2	210.3	218.3	218.3	218.3	218.5	218.5	r216.1	216.0	216.1	216.2	216.2
13-2	Concrete ingredients	296.3	297.4	297.5	297.5	297.7	298.0	298.5	298.4	298.5	r298.7	305.9	308.1	309.5	309.2
13-3	Concrete products	291.2	289.9	291.2	293.5	293.4	293.4	292.9	293.3	293.4	r293.6	294.8	295.6	296.0	297.3
13-4	Structural clay products, excluding refractories	249.7	246.0	250.1	250.7	250.9	250.9	256.3	256.2	256.5	r257.5	257.1	257.4	257.4	260.7
13-5	Refractories	302.5	298.4	304.0	307.1	307.1	307.1	307.1	307.8	308.9	r311.3	315.4	330.9	336.4	336.7
13-6	Asphalt roofing	407.0	415.9	407.4	428.5	421.9	420.9	401.6	402.9	410.2	r405.6	399.7	398.8	382.8	385.2
13-7	Gypsum products	258.2	256.8	261.1	260.7	259.7	255.3	252.9	252.4	251.3	249.7	250.4	255.0	260.7	262.8
13-8	Glass containers	328.5	326.7	335.3	335.3	335.5	335.5	335.5	335.5	335.5	r335.5	334.7	349.6	355.2	357.4
13-9	Other nonmetallic minerals	463.9	479.1	477.6	476.8	476.2	475.3	474.3	473.3	473.5	r474.7	474.9	479.0	480.1	478.8
14	Transportation equipment (12/68 = 100)	235.4	231.9	233.6	234.3	235.0	235.9	231.8	244.5	246.3	r246.8	248.3	244.7	244.9	245.8
14-1	Motor vehicles and equipment	237.5	233.9	236.0	236.7	237.4	238.4	232.8	247.8	248.9	r248.5	250.4	246.1	246.4	246.6
14-4	Railroad equipment	338.2	335.7	331.2	331.4	338.1	338.7	338.7	338.7	341.3	r340.1	352.4	352.4	352.8	353.9
15	Miscellaneous products	266.6	266.0	266.9	266.3	263.2	262.6	267.0	268.5	269.5	r267.6	268.4	273.7	272.9	273.3
15-1	Toys, sporting goods, small arms, ammunition	212.2	211.3	211.4	211.2	213.2	212.7	213.6	213.0	212.7	r213.3	219.3	221.0	221.6	221.9
15-2	Tobacco products	268.3	268.7	268.7	268.7	268.8	268.8	274.5	278.2	278.2	r278.2	277.9	306.4	306.4	306.5
15-3	Notions	250.6	248.4	267.8	268.0	267.5	267.7	267.8	268.7	268.7	268.7	270.5	270.7	271.8	271.8
15-4	Photographic equipment and supplies	210.1	212.4	212.5	212.5	211.4	207.1	208.7	208.9	209.0	r209.1	210.3	210.8	212.5	214.6
15-5	Mobile homes (12/74 = 100)	(6)	(6)	(6)	(6)	158.1	158.3	158.7	159.1	159.3	r159.3	159.1	159.6	161.6	162.0
15-9	Other miscellaneous products	346.9	349.0	349.4	346.9	333.1	334.6	345.5	348.5	344.8	r344.6	341.9	340.9	334.3	333.5

[1] Data for December 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Prices for natural gas are lagged 1 month.

[3] Includes only domestic production.

[4] Most prices for refined petroleum products are lagged 1 month.

[5] Some prices for industrial chemicals are lagged 1 month.

[6] Not available.

r = revised.

25. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1981	1981									1982			
		Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.[1]	Jan.	Feb.	Mar.	Apr.
All commodities — less farm products	295.7	295.0	296.1	296.7	298.0	298.7	298.5	299.5	299.4	[r]300.0	301.9	301.8	301.4	300.9
All foods	251.9	251.4	250.3	252.2	255.2	253.7	251.7	249.1	247.4	[r]247.6	252.0	253.5	251.5	254.4
Processed foods	252.2	250.3	250.5	253.1	256.0	256.0	252.8	250.0	247.6	[r]248.5	251.0	252.2	252.1	254.9
Industrial commodities less fuels	....	261.8	262.9	263.5	265.0	266.1	266.4	268.7	269.0	269.4	270.9	271.4	271.8	272.2
Selected textile mill products (Dec. 1975 = 100)	135.9	134.5	135.7	135.9	136.8	137.2	138.1	138.2	138.4	[r]137.9	138.3	140.0	139.0	139.9
Hosiery	134.3	134.2	134.6	136.7	135.8	135.3	135.5	136.5	136.5	136.7	137.0	137.9	137.5	138.1
Underwear and nightwear	203.5	202.1	202.3	203.5	204.7	204.7	204.7	204.7	205.7	[r]208.3	212.1	216.0	216.4	216.4
Chemicals and allied products, including synthetic rubber and fibers and yarns	279.6	276.1	279.0	281.2	282.3	284.0	284.4	283.8	283.2	[r]283.1	284.9	286.0	285.8	285.7
Pharmaceutical preparations	188.8	184.0	185.7	186.6	189.0	188.4	191.6	192.8	192.5	[r]193.3	195.5	198.0	200.0	204.4
Lumber and wood products, excluding millwork	303.1	312.3	311.5	312.2	308.7	306.2	298.0	290.1	286.4	[r]290.7	290.2	288.3	288.6	289.9
Special metals and metal products	279.4	276.8	277.9	277.9	280.2	281.9	280.1	286.7	286.6	286.6	286.0	286.1	285.5	285.7
Fabricated metal products	280.0	277.0	278.5	279.0	281.7	283.1	283.9	286.0	287.0	[r]287.1	290.0	290.4	291.5	292.5
Copper and copper products	204.0	207.7	206.6	203.7	202.5	206.2	205.1	201.9	198.9	[r]195.4	195.1	194.1	191.0	190.5
Machinery and motive products	256.7	253.1	254.4	255.6	257.4	258.6	257.7	264.3	265.8	[r]266.0	268.5	267.6	268.2	269.3
Machinery and equipment, except electrical	289.3	284.3	285.9	287.3	290.4	291.7	293.8	295.0	296.4	[r]298.4	300.1	301.6	302.2	304.1
Agricultural machinery, including tractors	298.2	289.6	293.7	294.8	295.6	298.2	301.6	305.7	312.5	[r]314.7	313.7	314.6	315.5	317.7
Metalworking machinery	329.4	325.9	327.1	328.3	330.1	331.4	333.9	336.7	338.3	[r]341.2	342.1	343.3	346.4	348.8
Numerically controlled machine tools (Dec. 1971 = 100)	239.4	235.7	237.3	241.4	241.7	241.8	241.8	241.8	242.2	[r]242.0	240.5	240.1	240.3	240.2
Total tractors	324.0	316.8	322.0	322.5	325.5	327.8	330.7	338.3	342.2	[r]342.3	346.2	346.2	346.4	351.7
Agricultural machinery and equipment less parts	289.0	283.2	286.7	287.9	288.6	291.1	294.0	297.6	303.5	[r]305.8	305.3	306.3	307.3	309.2
Farm and garden tractors less parts	298.9	289.3	297.7	298.0	298.0	301.4	305.5	313.0	319.6	[r]319.7	318.5	318.5	318.8	322.3
Agricultural machinery, excluding tractors less parts	294.4	290.2	290.8	292.5	293.9	295.8	298.7	299.9	303.5	[r]310.9	310.0	311.6	307.3	314.3
Industrial valves	314.8	314.0	314.3	315.3	317.5	319.8	322.7	322.4	323.4	[r]325.3	325.2	326.8	327.1	327.7
Industrial fittings	302.1	302.7	303.0	303.0	303.0	303.0	304.3	304.1	304.1	304.1	304.1	304.1	304.1	309.1
Construction materials	283.0	283.9	284.2	285.0	286.7	285.5	284.4	284.6	284.1	[r]285.2	286.4	286.9	287.4	288.1

[1] Data for December 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

26. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1981	1981									1982			
		Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.[1]	Jan.	Feb.	Mar.	Apr.
Total durable goods	269.8	267.8	268.6	269.1	270.8	271.9	271.8	275.0	275.4	[r]276.0	277.4	277.3	277.3	278.1
Total nondurable goods	312.4	314.2	314.8	315.7	316.8	316.2	315.0	312.8	311.4	[r]311.4	314.7	315.3	314.2	313.5
Total manufactures	285.9	285.3	286.2	286.9	288.0	288.6	288.3	289.8	289.7	[r]289.9	291.8	291.9	291.9	290.9
Durable	269.6	267.2	268.2	268.9	270.6	271.7	271.7	275.1	275.8	[r]276.5	277.8	277.7	277.8	278.7
Nondurable	303.6	304.9	305.7	306.4	306.9	306.9	306.3	305.5	304.5	[r]304.3	308.8	307.2	305.8	303.9
Total raw or slightly processed goods	330.7	334.6	334.2	335.4	337.9	335.8	332.7	326.4	323.3	[r]323.6	329.0	330.6	329.9	332.2
Durable	271.4	286.0	280.4	272.4	271.2	275.9	270.4	263.7	253.4	[r]247.8	254.4	254.4	250.7	245.9
Nondurable	334.0	337.1	337.1	338.9	341.8	339.1	336.3	330.0	327.4	[r]328.2	333.4	335.1	334.7	337.5

[1] Data for December 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

27. Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981									1982			
			Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.[1]	Jan.	Feb.	Mar.	Apr.
	MINING														
1011	Iron ores (12/75 = 100)	167.3	168.1	168.1	168.1	168.1	168.1	168.1	168.1	171.3	171.3	171.3	171.3	171.3	171.3
1092	Mercury ores (12/75 = 100)	346.0	354.1	347.9	352.0	358.3	365.4	364.5	354.1	354.1	343.7	347.9	313.7	325.0	327.0
1211	Bituminous coal and lignite	493.9	483.5	484.5	488.4	502.1	503.4	506.0	506.2	507.8	[r]510.3	521.3	524.7	521.9	527.2
1311	Crude petroleum and natural gas	898.8	908.6	919.7	713.7	911.5	900.3	913.6	900.8	907.5	[r]921.7	917.6	913.5	904.7	894.9
1442	Construction sand and gravel	277.3	278.0	278.4	278.4	278.4	278.2	279.2	279.7	279.8	[r]280.7	287.0	289.5	292.7	292.2
1455	Kaolin and ball clay (6/76 = 100)	138.7	137.1	137.1	137.1	137.1	137.1	137.1	143.4	143.4	143.4	147.1	149.6	149.6	151.7
	MANUFACTURING														
2011	Meatpacking plants	243.1	237.8	243.6	245.9	252.6	250.9	252.7	244.1	237.0	[r]234.1	236.6	243.8	247.0	253.3
2013	Sausages and other prepared meats	241.3	227.5	230.4	238.1	246.0	254.0	253.9	252.2	248.9	[r]247.0	245.7	250.5	248.2	253.4
2016	Poultry dressing plants	192.0	186.7	196.2	198.3	203.6	201.2	188.8	175.5	172.8	166.7	([2])	([2])	([2])	([2])
2021	Creamery butter	274.8	273.4	273.4	273.5	273.8	273.7	275.0	279.2	279.5	275.0	275.0	276.4	276.8	275.3

See footnotes at end of table.

27. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981 Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.[1]	1982 Jan.	Feb.	Mar.	Apr.
	MANUFACTURING — Continued														
2022	Cheese, natural and processed (12/72 = 100)	218.8	216.2	218.2	218.1	213.8	214.5	215.0	215.4	215.0	[1]218.4	216.0	217.0	216.8	218.8
2024	Ice cream and frozen desserts (12/72 = 100)	211.9	211.6	212.4	212.4	212.7	212.7	212.7	212.5	212.5	[1]212.7	212.8	212.8	210.8	214.2
2033	Canned fruits and vegetables	248.5	244.0	245.9	248.9	251.8	252.8	254.3	257.0	258.4	[1]258.9	258.6	262.2	262.7	261.5
2034	Dehydrated food products (12/73 = 100)	177.8	174.2	175.3	175.0	180.5	178.7	183.4	182.1	181.4	182.1	184.0	181.8	181.5	181.5
2041	Flour mills (12/71 = 100)	195.0	201.5	199.4	199.3	198.5	191.8	195.3	191.1	191.5	[1]189.2	191.4	187.4	187.3	188.5
2044	Rice milling	277.2	308.9	303.3	303.3	287.4	284.3	268.2	247.3	235.4	215.1	205.8	182.2	183.5	177.9
2048	Prepared feeds, n.e.c. (12/75 = 100)	124.6	128.5	128.8	127.5	125.9	124.8	119.6	117.3	116.4	[1]110.0	118.6	118.5	114.8	115.4
2061	Raw cane sugar	273.5	275.7	284.8	283.3	272.2	254.6	212.3	218.9	224.3	230.8	247.6	246.1	233.0	242.9
2063	Beet sugar	320.6	350.5	334.4	338.7	274.1	287.5	270.7	250.3	230.4	[1]250.5	260.5	262.6	272.4	272.6
2067	Chewing gum	308.8	303.1	303.1	303.1	303.1	303.2	303.2	303.2	303.2	303.2	303.3	303.3	303.4	303.4
2074	Cottonseed oil mills	198.0	218.4	218.6	212.3	212.0	208.0	182.3	172.0	167.2	[1]182.4	184.9	170.6	158.2	164.8
2075	Soybean oil mills	245.8	258.1	258.1	248.4	253.7	245.8	234.2	228.7	221.2	[1]221.9	222.6	219.9	217.8	225.0
2077	Animal and marine fats and oils	288.1	301.7	304.3	291.3	288.6	294.1	281.2	274.0	272.3	268.6	260.3	262.8	271.8	273.3
2083	Malt	282.5	286.1	286.1	286.1	286.1	286.1	275.4	275.4	275.4	275.4	287.1	287.1	287.1	258.1
2085	Distilled liquor, except brandy (12/75 = 100)	134.7	133.8	134.3	134.6	134.6	135.5	135.5	135.5	137.9	137.9	140.1	137.9	140.2	140.2
2091	Canned and cured seafoods (12/73 = 100)	187.8	187.7	187.3	187.5	187.4	188.4	188.8	189.2	189.3	188.5	187.2	187.0	187.7	189.2
2092	Fresh or frozen packaged fish	369.6	363.5	378.2	375.5	367.6	347.1	353.5	358.9	380.8	[1]380.5	388.3	390.8	420.7	433.8
2095	Roasted coffee (12/72 = 100)	238.0	238.5	238.6	238.6	238.4	235.7	237.3	238.2	238.2	240.4	245.0	247.1	248.7	250.7
2098	Macaroni and spaghetti	252.0	243.6	248.6	248.6	250.5	250.5	250.5	250.5	250.5	250.5	250.5	258.5	258.5	258.5
2111	Cigarettes	277.7	278.3	278.3	278.3	278.3	278.3	284.2	288.4	288.4	288.4	288.4	318.7	318.7	318.7
2121	Cigars	169.1	168.5	168.5	168.5	169.7	169.7	174.5	174.5	174.5	[1]174.5	171.8	175.6	175.6	176.8
2131	Chewing and smoking tobacco	309.8	320.8	320.8	320.8	321.0	321.3	305.3	328.1	328.1	[1]328.1	328.0	348.4	348.4	348.4
2211	Weaving mills, cotton (12/72 = 100)	234.1	235.3	233.5	234.3	234.7	237.4	238.0	233.2	229.8	[illegible]	227.5	228.0	228.5	228.1
2221	Weaving mills, synthetic (12/77 = 100)	136.6	134.9	135.7	137.1	138.0	138.3	138.5	138.4	138.8	138.5	138.8	138.8	138.9	138.2
2251	Women's hosiery, except socks (12/75 = 100)	113.5	114.1	114.2	115.6	115.5	115.0	115.0	115.2	115.1	[1]115.2	115.6	115.6	116.2	116.3
2254	Knit underwear mills	210.2	209.8	210.0	210.0	210.7	210.8	210.9	210.9	212.8	[1]213.0	228.7	224.7	235.5	236.6
2257	Circular knit fabric mills (6/76 = 100)	110.8	110.8	110.5	110.4	111.0	112.0	111.9	112.0	112.4	[1]111.8	111.8	112.3	110.6	110.1
2261	Finishing plants, cotton (6/76 = 100)	144.9	148.9	147.0	146.2	146.3	146.2	145.4	144.9	143.5	141.4	140.5	140.3	140.8	141.8
2262	Finishing plants, synthetics, silk (6/76 = 100)	126.5	125.2	126.6	126.6	127.1	127.8	129.0	129.1	129.1	128.6	129.3	129.7	128.3	128.1
2272	Tufted carpets and rugs	154.3	151.5	154.5	155.6	158.3	157.4	157.3	155.7	157.0	[1]156.7	155.1	155.3	155.7	156.1
2281	Yarn mills, except wool (12/71 = 100)	221.8	220.0	224.1	225.8	225.1	225.4	223.8	222.4	218.8	[1]217.2	218.0	215.3	215.8	214.8
2282	Throwing and winding mills (6/76 = 100)	138.6	131.5	138.1	138.3	142.7	148.8	148.0	154.5	145.6	148.0	135.3	135.2	150.8	150.8
2284	Thread mills (6/76 = 100)	151.4	150.8	150.8	151.1	151.1	151.1	154.8	157.0	157.0	156.8	156.8	156.8	156.8	156.7
2298	Cordage and twine (12/77 = 100)	136.8	132.7	134.3	134.3	134.3	134.3	138.3	138.3	138.3	140.7	141.0	141.0	141.0	141.0
2311	Men's and boys' suits and coats	223.8	209.3	220.4	224.6	225.9	226.2	228.5	227.4	228.4	[1]230.5	230.7	232.1	233.0	234.3
2321	Men's and boys' shirts and nightwear	208.8	207.6	207.1	207.5	210.5	210.6	211.5	212.4	212.6	[1]213.4	189.9	191.7	192.7	193.1
2322	Men's and boys' underwear	230.6	231.0	231.0	230.7	230.8	230.8	230.8	230.8	233.0	233.0	237.6	246.9	247.4	247.4
2323	Men's and boys' neckwear (12/75 = 100)	114.6	115.4	115.4	115.4	113.9	113.9	113.9	113.9	113.9	113.9	115.3	117.3	117.3	117.3
2327	Men's and boys' separate trousers	186.1	186.0	186.1	186.1	186.4	186.4	186.4	186.8	186.9	[1]187.1	187.0	187.0	188.2	188.8
2328	Men's and boys' work clothing	249.4	247.0	248.2	248.3	250.8	251.1	251.2	253.1	253.2	[1]253.3	251.8	251.8	252.0	253.8
2331	Women's and misses' blouses and waists (6/78 = 100)	119.8	118.3	118.4	118.5	121.0	121.2	121.3	126.4	126.7	[1]126.7	123.8	123.8	123.8	125.8
2335	Women's and misses' dresses (12/77 = 100)	121.1	115.4	122.3	122.5	123.0	124.3	123.5	123.4	124.1	[1]122.7	122.6	122.0	123.6	122.9
2341	Women's and children's underwear (12/72 = 100)	169.0	169.0	169.2	170.5	170.6	170.6	170.6	170.6	171.6	[1]171.8	175.3	175.4	175.7	176.7
2342	Brassieres and allied garments (12/75 = 100)	138.8	135.0	135.0	136.9	138.8	138.8	138.8	138.8	138.9	[1]140.1	145.5	149.2	149.2	149.2
2361	Children's dresses and blouses (12/77 = 100)	120.3	120.7	120.5	120.5	121.6	121.7	121.7	122.0	122.5	[1]123.2	122.0	122.0	122.0	121.0
2381	Fabric dress and work gloves	289.3	289.1	292.1	292.1	289.2	289.2	289.2	289.2	289.2	289.2	293.8	297.4	295.5	295.5
2394	Canvas and related products (12/77 = 100)	132.1	129.3	130.0	130.1	130.1	133.1	134.6	137.6	137.6	[1]138.7	145.5	145.5	147.8	148.3
2396	Automotive and apparel trimmings (12/77 = 100)	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
2421	Sawmills and planing mills (12/71 = 100)	229.2	233.3	234.8	234.8	233.5	231.2	225.2	218.5	218.5	[1]218.6	218.5	217.8	217.1	218.4
2436	Softwood veneer and plywood (12/75 = 100)	142.0	152.6	145.7	148.1	143.6	139.6	135.4	129.3	128.0	[1]134.5	132.0	131.1	132.3	129.2
2439	Structural wood members, n.e.c. (12/75 = 100)	156.6	158.3	158.2	158.2	157.6	156.9	156.6	154.8	154.2	[1]153.2	153.2	153.2	152.3	152.9
2448	Wood pallets and skids (12/75 = 100)	152.5	153.1	153.1	153.0	153.1	152.9	152.8	152.0	150.4	[1]149.9	149.8	148.9	148.1	145.8
2451	Mobile homes (12/74 = 100)	156.8	155.8	156.9	158.1	158.1	158.3	158.7	159.2	159.3	[1]160.3	160.2	160.7	162.7	162.9
2492	Particleboard (12/75 = 100)	172.8	180.9	184.5	182.3	179.6	173.6	170.5	169.0	166.9	[1]170.3	171.3	170.2	173.4	176.8
2511	Wood household furniture (12/71 = 100)	197.4	195.4	196.2	197.5	198.6	199.2	200.1	201.0	202.0	[1]202.8	203.3	204.2	204.8	207.0
2512	Upholstered household furniture (12/71 = 100)	174.8	171.8	169.7	173.9	175.1	175.1	175.3	175.6	179.5	[1]182.1	184.1	182.0	182.0	184.8
2515	Mattresses and bedsprings	193.7	190.5	192.4	190.5	191.3	194.6	195.2	195.2	197.5	[1]198.0	207.5	210.0	210.0	210.1
2521	Wood office furniture	254.6	254.5	255.4	254.6	254.7	254.7	257.1	257.1	257.0	[1]257.6	262.9	271.8	271.9	271.9
2611	Pulp mills (12/73 = 100)	253.2	251.2	251.3	251.3	251.3	251.3	251.3	260.0	262.5	[1]262.5	260.9	260.9	262.9	268.8
2621	Paper mills, except building (12/74 = 100)	156.3	153.9	154.3	155.7	157.0	157.4	158.8	158.8	159.7	[1]158.6	161.8	162.0	161.9	161.8
2631	Paperboard mills (12/74 = 100)	151.8	151.0	152.1	152.3	151.7	152.4	153.7	153.6	153.5	152.7	152.6	153.6	153.2	153.0
2647	Sanitary paper products	343.8	343.2	344.3	344.4	344.2	344.3	344.3	344.0	344.1	[1]344.8	345.8	345.6	345.6	346.5
2654	Sanitary food containers	245.3	238.2	238.2	242.2	248.0	252.9	253.2	253.4	253.3	[1]253.3	255.3	258.3	261.4	261.4
2655	Fiber cans, drums, and similar products (12/75 = 100)	163.0	160.8	160.9	160.9	163.2	163.2	163.2	167.6	167.6	[1]170.0	175.3	176.5	176.5	176.5
2812	Alkalies and chlorine (12/73 = 100)	305.3	294.4	302.2	309.3	309.2	310.4	316.0	317.7	317.0	[1]324.8	329.3	333.7	336.0	332.1
2821	Plastics materials and resins (6/76 = 100)	150.9	149.1	149.7	150.7	155.0	155.6	156.0	156.3	153.7	[1]154.3	154.2	156.4	151.7	151.2
2822	Synthetic rubber	292.9	288.1	293.3	296.3	297.3	298.4	299.3	301.0	301.4	302.7	304.0	306.2	305.6	306.6
2824	Organic fiber, noncellulosic	155.7	149.8	156.2	156.8	159.2	160.3	160.6	164.2	162.5	161.9	161.0	161.1	162.4	161.7
2873	Nitrogenous fertilizers (12/75 = 100)	142.7	147.1	148.5	143.4	143.5	143.9	142.1	142.9	144.2	[1]142.9	142.4	142.5	142.2	142.7
2874	Phosphatic fertilizers	254.1	251.6	251.5	250.9	249.4	260.0	258.4	258.4	258.5	258.0	261.4	265.5	261.7	258.5
2875	Fertilizers, mixing only	270.2	271.1	273.6	273.1	275.3	273.0	272.0	273.8	273.7	[1]270.5	260.1	275.5	278.1	278.4
2892	Explosives	312.0	324.8	314.5	312.6	315.7	319.8	316.5	318.7	316.5	[1]315.6	315.6	312.9	316.3	322.2
2911	Petroleum refining (6/76 = 100)	294.4	308.0	304.1	302.6	298.1	297.5	295.8	294.6	293.3	[1]293.1	293.5	288.6	281.9	287.5
2951	Paving mixtures and blocks (12/75 = 100)	194.3	188.1	188.8	189.4	187.1	196.3	196.0	196.3	196.4	[1]196.0	197.2	196.4	196.8	197.1
2952	Asphalt felts and coatings (12/75 = 100)	176.7	180.4	176.3	185.7	182.8	182.3	174.3	174.9	176.1	[1]178.1	173.5	173.2	170.5	167.4
3011	Tires and inner tubes (12/73 = 100)	215.9	215.5	216.2	216.2	213.1	215.5	220.6	221.0	220.1	[1]221.2	222.0	224.4	222.3	220.8

27. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981 Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.[1]	1982 Jan.	Feb.	Mar.	Apr.
3021	Rubber and plastic footwear (12/71 = 100)	184.4	183.6	184.0	184.1	185.0	185.4	185.3	185.0	185.0	186.2	186.1	188.5	188.1	189.0
3031	Reclaimed rubber (12/73 = 100)	183.4	187.7	187.7	187.7	192.9	200.3	200.3	200.3	200.3	r200.3	198.1	198.1	204.9	208.0
3079	Miscellaneous plastic products (6/78 = 100)	128.8	128.7	129.1	128.6	129.2	130.2	130.3	130.8	130.8	r131.0	130.9	131.3	132.5	132.9
3111	Leather tanning and finishing (12/77 = 100)	150.6	158.6	154.7	150.7	151.3	148.5	148.3	148.2	148.8	r147.5	150.7	148.2	148.2	147.5
3143	Men's footwear, except athletic (12/75 = 100)	168.1	168.7	168.9	169.6	170.7	171.4	170.9	170.5	170.8	r171.3	172.6	171.6	173.6	174.9
3144	Women's footwear, except athletic	217.8	218.7	219.3	218.5	218.9	217.8	218.2	212.5	212.7	r212.4	213.8	211.3	211.6	215.6
3171	Women's handbags and purses (12/75 = 100)	155.5	149.7	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4
3211	Flat glass (12/71 = 100)	175.6	174.5	174.5	174.6	180.0	180.0	180.0	180.1	180.1	r177.4	177.3	177.4	177.5	177.5
3221	Glass containers	329.4	328.8	335.2	335.2	335.4	335.4	335.4	335.4	335.4	r335.4	334.7	349.5	355.1	357.3
3241	Cement, hydraulic	328.5	332.4	332.3	331.0	331.6	331.8	332.0	330.3	330.3	r330.3	338.4	338.2	338.3	337.9
3251	Brick and structural clay tile	298.9	299.0	297.4	298.5	298.9	298.9	298.9	298.9	300.5	r300.5	291.4	291.8	291.8	295.0
3253	Ceramic wall and floor tile (12/75 = 100)	132.5	129.6	132.1	132.1	132.1	132.1	140.4	140.4	140.4	r140.4	138.8	138.8	138.8	137.1
3255	Clay refractories	310.4	308.6	311.0	312.2	312.3	312.3	312.5	313.9	315.2	r318.9	327.0	348.5	357.5	357.0
3259	Structural clay products, n.e.c.	222.7	212.7	223.9	223.0	223.9	223.9	227.5	231.7	231.7	r238.0	198.4	198.7	198.8	202.4
3261	Vitreous plumbing fixtures	254.9	252.0	252.5	255.9	258.7	259.6	259.0	259.0	259.3	260.1	261.1	260.8	260.7	261.9
3262	Vitreous china food utensils	335.0	333.2	336.6	336.6	336.6	336.6	336.8	336.8	344.7	344.7	347.7	347.7	347.3	338.2
3263	Fine earthenware food utensils	300.9	308.2	308.6	308.6	308.6	308.6	313.8	313.8	315.0	r315.0	314.5	314.5	314.4	312.8
3269	Pottery products, n.e.c. (12/75 = 100)	160.1	158.6	160.6	160.7	160.7	160.7	161.8	161.8	160.7	r163.7	164.2	164.2	164.1	161.4
3271	Concrete block and brick	270.4	267.4	271.2	271.2	271.2	274.0	274.2	274.3	274.2	r275.1	274.6	276.0	276.3	276.4
3273	Ready-mixed concrete	298.7	298.5	299.4	301.7	303.7	300.0	299.2	299.5	299.4	r299.6	301.1	301.4	302.0	303.3
3274	Lime (12/75 = 100)	172.5	172.4	172.6	173.0	173.1	173.8	173.7	173.7	173.5	r173.8	178.1	184.0	186.0	186.6
3275	Gypsum products	257.3	257.1	261.4	260.9	261.8	258.0	252.9	251.5	252.5	250.6	250.9	253.8	260.5	262.2
3291	Abrasive products (12/71 = 100)	232.5	232.7	233.2	234.1	236.0	235.1	237.3	237.6	241.0	r241.0	238.9	245.0	247.8	248.9
3297	Nonclay refractories (12/74 = 100)	185.3	179.9	186.6	189.7	189.7	189.7	189.7	189.7	190.2	r190.3	191.1	198.1	200.5	202.4
3312	Blast furnaces and steel mills	342.6	336.7	337.3	338.2	350.1	350.0	350.3	353.1	353.0	r353.3	354.9	354.6	354.5	356.1
3313	Electrometallurgical products (12/75 = 100)	121.8	120.8	120.6	120.7	121.2	121.5	121.4	125.4	125.4	125.3	125.5	123.4	120.3	120.3
3316	Cold finishing of steel shapes	318.2	308.2	308.2	308.5	325.0	325.7	326.2	326.4	326.4	326.7	327.0	327.0	327.0	327.6
3317	Steel pipes and tubes	341.5	333.1	334.1	338.3	348.2	360.6	360.5	362.0	362.3	r363.0	363.8	364.2	366.0	365.8
3321	Gray iron foundries (12/68 = 100)	299.5	297.0	298.4	298.4	298.8	299.9	302.0	303.3	305.2	r306.1	308.0	310.4	310.6	310.4
3333	Primary zinc	326.5	311.9	332.7	335.1	335.4	353.8	350.0	337.0	337.5	r315.7	308.0	309.8	298.6	273.4
3334	Primary aluminum	333.5	332.8	334.2	332.5	334.2	334.4	333.6	333.5	332.5	332.8	332.4	327.9	320.7	318.5
3351	Copper rolling and drawing	212.4	213.1	212.6	210.6	209.4	212.9	214.1	212.3	209.2	r207.1	205.6	204.1	198.6	198.6
3353	Aluminum sheet, plate, and foil (12/75 = 100)	175.9	173.8	174.4	176.1	177.3	177.4	178.0	178.9	180.2	r180.8	181.5	181.6	181.4	180.1
3354	Aluminum extruded products (12/75 = 100)	180.1	180.6	180.7	182.6	181.2	181.3	181.2	181.3	181.4	181.1	180.7	180.8	180.5	179.9
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	158.1	157.3	157.4	157.3	157.2	157.2	157.7	160.0	166.2	166.1	166.1	166.6	165.9	162.9
3411	Metal cans	305.3	304.7	304.7	304.7	306.5	309.7	308.8	307.0	308.0	r304.9	310.3	314.4	315.1	318.6
3425	Hand saws and saw blades (12/72 = 100)	201.3	198.1	200.2	200.2	204.1	204.2	204.6	204.8	206.0	r208.0	211.0	214.2	214.3	214.9
3431	Metal sanitary ware	265.0	262.8	264.8	265.2	269.2	269.7	270.2	270.3	271.6	r271.8	270.9	271.8	273.8	275.8
3465	Automotive stampings (12/75 = 100)	146.4	145.0	145.0	145.2	146.2	146.4	146.8	147.4	148.7	r148.1	154.6	152.5	152.6	152.7
3482	Small arms ammunition (12/75 = 100)	160.5	157.8	157.8	157.8	157.8	159.8	159.9	159.9	159.9	r163.0	173.2	173.2	173.2	171.9
3493	Steel springs, except wire	245.1	241.2	241.7	241.9	243.7	248.9	252.4	253.9	254.1	r256.1	256.4	257.2	256.6	256.0
3494	Valves and pipe fittings (12/71 = 100)	248.4	247.6	247.9	248.5	250.0	251.0	252.7	252.9	253.5	r255.7	255.8	257.1	257.4	258.6
3498	Fabricated pipe and fittings	361.4	358.8	358.9	361.6	364.6	370.0	375.1	377.7	378.6	r379.3	378.6	377.7	378.5	385.5
3519	Internal combustion engines, n.e.c.	311.0	308.0	308.2	307.2	312.0	314.2	322.1	323.2	326.4	r325.4	327.3	330.0	330.7	332.6
3531	Construction machinery (12/76 = 100)	157.0	154.4	155.3	158.9	159.0	159.5	160.1	161.0	161.6	r159.7	164.8	168.1	163.2	164.1
3532	Mining machinery (12/72 = 100)	262.3	279.5	280.0	280.8	282.7	285.3	286.0	289.5	290.6	r292.8	293.9	297.5	298.6	301.4
3533	Oilfield machinery and equipment	385.4	382.2	384.8	393.3	401.3	408.5	411.3	415.6	418.2	r420.3	427.1	428.1	430.7	436.2
3534	Elevators and moving stairways	250.5	251.2	251.2	251.2	252.1	252.8	254.6	257.0	260.7	r265.6	268.0	268.8	269.9	270.6
3542	Machine tools, metal forming types (12/71 = 100)	308.4	303.0	304.5	305.7	307.6	309.5	312.0	311.7	312.3	r319.3	313.5	318.8	324.5	326.5
3546	Power driven hand tools (12/76 = 100)	147.1	146.4	147.0	147.1	148.2	148.4	148.8	148.5	148.5	r150.0	153.3	153.4	153.4	154.0
3552	Textile machinery (12/69 = 100)	243.4	240.4	241.2	244.4	248.2	245.4	248.2	248.0	247.9	r249.9	249.6	250.7	253.4	258.2
3553	Woodworking machinery (12/72 = 100)	224.5	205.5	218.1	218.7	224.0	225.4	228.0	227.9	229.1	r229.1	229.4	229.2	229.6	235.0
3576	Scales and balances, excluding laboratory	228.2	270.2	230.2	230.3	228.6	228.6	226.1	226.2	226.3	r226.5	228.2	228.0	228.8	229.6
3592	Carburetors, pistons, rings, valves (6/76 = 100)	177.9	172.0	172.0	178.5	180.6	181.3	182.1	185.4	187.2	r187.3	185.0	189.4	190.2	182.6
3612	Transformers	209.7	206.0	207.6	208.8	210.7	212.8	214.5	217.3	222.0	r222.0	220.3	221.9	222.4	223.2
3623	Welding apparatus, electric (12/72 = 100)	227.2	224.3	225.9	227.2	228.3	229.6	231.6	232.5	233.2	r235.8	235.9	236.0	231.5	232.9
3631	Household cooking equipment (12/75 = 100)	141.1	140.5	140.7	141.0	140.5	141.5	141.6	141.6	141.9	142.6	144.6	146.3	146.9	146.2
3632	Household refrigerators, freezers (6/76 = 100)	132.3	129.4	129.5	130.8	135.5	136.6	136.4	137.8	137.9	r137.9	138.6	138.6	140.8	142.5
3633	Household laundry equipment (12/73 = 100)	174.2	173.5	173.0	173.6	174.1	174.6	177.2	177.0	178.4	178.8	178.8	180.4	186.2	186.9
3635	Household vacuum cleaners	158.8	158.4	158.5	158.6	160.6	158.0	158.8	161.3	161.0	r160.8	158.7	158.3	158.0	158.2
3636	Sewing machines (12/75 = 100)	148.6	131.8	153.8	153.8	153.8	153.8	153.8	158.0	158.0	r158.0	155.4	155.2	155.2	153.7
3641	Electric lamps	277.5	275.5	276.1	278.5	276.2	280.0	283.1	285.9	284.8	r281.3	282.0	280.2	283.5	280.7
3644	Noncurrent-carrying wiring devices (12/72 = 100)	250.4	242.6	242.8	251.5	253.3	258.8	258.5	258.7	262.1	r262.1	261.5	261.5	261.5	259.5
3646	Commercial lighting fixtures (12/75 = 100)	154.4	150.1	150.2	150.2	154.4	158.5	157.6	158.9	158.3	r158.2	158.0	161.1	160.2	163.6
3648	Lighting equipment, n.e.c. (12/75 = 100)	155.7	153.2	153.3	153.7	153.8	161.3	161.7	162.0	162.4	r163.1	162.7	167.6	168.8	170.2
3671	Electron tubes receiving type	309.7	285.0	285.1	312.5	327.4	327.5	327.5	327.5	327.8	r342.2	371.8	374.9	376.1	378.2
3674	Semiconductors and related devices	90.4	91.2	90.6	90.3	90.2	90.2	91.4	91.6	92.0	r91.7	90.8	90.8	91.2	90.1
3675	Electronic capacitors (12/75 = 100)	170.3	168.7	168.5	171.2	171.4	170.8	172.4	171.5	168.1	r166.6	168.4	168.3	168.6	167.8
3676	Electronic resistors (12/75 = 100)	141.3	140.0	140.8	141.2	142.1	142.8	142.7	142.7	143.0	r142.8	142.9	143.9	144.0	144.7
3678	Electronic connectors (12/75 = 100)	154.8	154.4	153.7	154.3	155.0	155.6	155.5	156.8	155.8	r155.8	157.2	156.9	157.1	158.7
3692	Primary batteries, dry and wet	182.2	182.6	181.0	181.0	181.6	182.7	182.7	182.7	182.7	182.7	182.1	185.0	191.2	186.4
3711	Motor vehicles and car bodies (12/75 = 100)	150.2	148.4	148.6	150.3	150.3	150.1	143.4	158.6	158.7	r158.1	159.5	154.5	154.7	154.5
3942	Dolls (12/75 = 100)	131.1	132.4	130.9	130.9	130.9	130.9	130.9	130.9	130.9	r130.9	134.9	136.2	136.2	136.5
3944	Games, toys, and children's vehicles	220.5	221.2	221.3	221.9	222.0	222.0	222.2	222.2	222.6	r223.9	225.8	229.9	231.4	231.4
3955	Carbon paper and inked ribbons (12/75 = 100)	138.6	138.9	138.9	140.4	140.4	140.6	140.6	140.2	140.2	r140.3	140.3	140.3	140.3	140.3
3995	Burial caskets (6/76 = 100)	138.5	138.1	138.3	138.3	138.3	140.6	143.6	143.4	143.4	142.7	142.7	143.8	145.3	145.3
3996	Hard surface floor coverings (12/75 = 100)	151.8	151.5	151.5	151.5	153.3	153.6	153.7	153.7	153.7	153.7	156.1	156.2	158.1	158.1

[1] Data for December 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

r = revised.

PRODUCTIVITY DATA

Productivity data are compiled by the Bureau of Labor Statistics from establishment data and from estimates of compensation and output supplied by the U.S. Department of Commerce and the Federal Reserve Board.

Definitions

Output is the constant dollar gross domestic product produced in a given period. Indexes of **output per hour of labor input**, or labor productivity, measure the value of goods and services produced per hour of labor. **Compensation per hour** includes wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. The data also include an estimate of wages, salaries, and supplementary payments for the self-employed, except for nonfinancial corporations, in which there are no self-employed. **Real compensation per hour** is compensation per hour adjusted by the Consumer Price Index for All Urban Consumers.

Unit labor cost measures the labor compensation cost required to produce one unit of output and is derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from the current dollar gross domestic product and dividing by output. In these tables, **unit nonlabor costs** contain all the components of unit nonlabor payments except unit profits. **Unit profits** include corporate profits and inventory valuation adjustments per unit of output.

The **implicit price deflator** is derived by dividing the current dollar estimate of gross product by the constant dollar estimate, making the deflator, in effect, a price index for gross product of the sector reported.

The use of the term "man hours" to identify the labor component of productivity and costs, in tables 28 through 31, has been discontinued. **Hours of all persons** is now used to describe the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all-employee hour** is now used to describe labor productivity in nonfinancial corporations where there are no self-employed.

Notes on the data

In the private business sector and the nonfarm business sector, the basis for the output measure employed in the computation of output per hour is Gross Domestic Product rather than Gross National Product. Computation of hours includes estimates of nonfarm and farm proprietor hours.

Output data are supplied by the Bureau of Economic Analysis, U.S. Department of Commerce, and the Federal Reserve Board. Quarterly manufacturing output indexes are adjusted by the Bureau of Labor Statistics to annual estimates of output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are from the Bureau of Economic Analysis and the Bureau of Labor Statistics.

Beginning with the September 1976 issue of the *Review*, the productivity tables were revised to reflect changeover to the new series—private business sector and nonfarm business sector—which differ from the previously published total private economy and nonfarm sector in that output imputed for owner-occupied dwellings and the household and institutions sectors, as well as the statistical discrepancy, are omitted. For a detailed explanation, see J. R. Norsworthy and L. J. Fulco, "New sector definitions for productivity series," *Monthly Labor Review*, October 1976, pages 40–42.

28. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950–81

[1977 = 100]

Item	1950	1955	1960	1965	1970	1974	1975	1976	1977	1978	1979	1980	1981
Private business sector:													
Output per hour of all persons	50.3	58.2	65.1	78.2	86.1	92.7	94.8	97.9	100.0	99.8	99.5	99.3	100.4
Compensation per hour	20.0	26.3	33.9	41.7	58.2	78.0	85.5	92.9	100.0	108.4	119.3	131.5	144.6
Real compensation per hour	50.4	59.6	69.4	80.0	90.8	95.9	96.3	98.8	100.0	100.7	99.6	96.7	^{r}98.3
Unit labor cost	39.8	45.2	52.1	53.3	67.6	84.2	90.2	94.8	100.0	108.6	119.9	132.4	144.0
Unit nonlabor payments	43.5	47.8	50.8	57.8	63.4	78.9	90.7	94.4	100.0	105.1	110.9	118.3	^{r}130.6
Implicit price deflator	41.0	46.1	51.7	54.8	66.2	82.4	90.4	94.7	100.0	107.4	116.9	127.6	138.4
Nonfarm business sector:													
Output per hour of all persons	58.2	62.7	68.2	80.4	86.7	93.1	95.0	98.1	100.0	99.8	99.1	98.8	99.7
Compensation per hour	21.8	28.3	35.9	42.8	58.6	78.4	86.0	93.0	100.0	108.5	119.0	130.8	143.9
Real compensation per hour	55.0	63.9	73.0	82.2	91.5	96.4	96.8	99.0	100.0	100.7	99.3	96.2	95.9
Unit labor cost	38.8	45.1	52.3	53.2	67.6	84.3	90.5	94.8	100.0	108.7	120.0	132.4	144.3
Unit nonlabor payments	42.8	47.9	50.5	58.2	64.0	76.1	88.9	94.0	100.0	103.8	108.5	117.6	^{r}130.4
Implicit price deflator	40.2	46.0	51.7	54.9	66.4	81.6	89.9	94.5	100.0	107.0	116.2	127.4	^{r}139.7
Nonfinancial corporations:													
Output per hour of all employees	(1)	(1)	68.3	79.9	85.4	91.3	94.4	97.4	100.0	100.4	100.4	101.0	103.5
Compensation per hour	(1)	(1)	38.3	43.0	58.3	77.8	85.5	92.5	100.0	108.2	118.7	130.7	143.9
Real compensation per hour	(1)	(1)	74.2	82.6	91.0	95.4	96.3	98.5	100.0	100.5	99.1	96.2	95.9
Unit labor cost	(1)	(1)	54.7	53.8	68.3	85.1	90.6	95.0	100.0	107.8	118.2	129.4	^{r}139.0
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	75.7	90.9	95.0	100.0	103.8	108.3	117.3	132.3
Implicit price deflator	(1)	(1)	54.7	56.2	66.5	81.8	90.7	95.0	100.0	106.4	114.8	125.2	136.7
Manufacturing:													
Output per hour of all persons	49.5	56.5	60.1	74.6	79.2	90.9	93.5	97.7	100.0	100.9	102.0	101.7	^{r}104.0
Compensation per hour	21.5	26.8	36.7	42.9	57.6	76.4	85.5	92.4	100.0	108.2	119.8	131.6	148.2
Real compensation per hour	54.1	65.2	75.1	82.3	89.9	93.9	96.3	98.3	100.0	100.5	99.2	96.8	97.4
Unit labor cost	43.4	51.0	61.1	57.4	72.7	84.1	91.4	94.6	100.0	107.3	116.5	129.4	^{r}140.6
Unit nonlabor payments	55.1	59.4	62.0	70.3	66.0	70.4	88.5	95.1	100.0	104.7	105.7	108.7	^{p}122.6
Implicit price deflator	46.8	53.4	61.3	61.2	70.7	80.1	90.6	94.7	100.0	106.5	113.4	123.4	^{p}135.4

[1] Not available.

r = revised.

29. Annual changes in productivity, hourly compensation, unit costs, and prices, 1971-81

Item	Year											Annual rate of change	
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1950-81	1960-81
Private business sector:													
Output per hour of all persons	3.6	3.5	2.7	-2.3	2.3	3.3	2.1	-0.2	-0.3	-0.7	1.1	2.4	2.1
Compensation per hour	6.6	6.5	8.0	9.4	9.6	8.9	7.7	8.4	10.1	10.2	10.0	6.2	7.2
Real compensation per hour	2.2	3.1	1.7	-1.6	0.6	2.7	1.2	0.7	-1.1	-3.0	-0.3	2.3	1.7
Unit labor cost	2.9	2.9	5.2	11.9	7.2	5.1	5.5	8.8	10.4	10.9	8.8	3.9	5.0
Unit nonlabor payments	7.8	4.5	5.9	4.4	15.0	4.1	8.8	5.1	5.5	0.6	[r]10.4	2.3	4.5
Implicit price deflator	4.4	3.4	5.4	8.4	9.7	4.7	5.6	7.4	8.9	9.2	9.3	3.5	4.9
Nonfarm business sector:													
Output per hour of all persons	3.3	3.7	2.5	-2.4	2.1	3.2	3.0	-0.2	-0.7	-0.3	0.8	2.1	1.8
Compensation per hour	6.6	6.7	7.6	9.4	9.6	8.1	7.8	8.5	9.7	9.9	[r]10.0	5.9	7.0
Real compensation per hour	2.2	3.3	1.3	-1.4	0.4	2.2	1.9	0.7	-1.6	-3.2	-0.3	2.0	1.5
Unit labor cost	3.1	2.8	4.9	12.1	7.4	4.7	5.5	8.7	10.4	10.3	9.0	3.7	5.0
Unit nonlabor payments	7.4	3.2	1.3	5.0	16.7	5.7	8.4	3.8	4.8	8.4	[r]10.0	3.3	4.4
Implicit price deflator	4.5	3.0	3.7	10.1	10.3	5.1	5.8	7.0	8.8	8.7	9.6	3.6	4.8
Nonfinancial corporations:													
Output per hour of all employees	4.8	3.0	2.6	-3.4	3.4	3.2	2.7	0.4	0.0	0.8	[r]2.4	(1)	2.0
Compensation per hour	6.5	5.8	7.7	9.7	10.1	8.2	8.1	8.2	9.7	10.1	[r]10.0	(1)	6.9
Real compensation per hour	2.1	2.5	1.4	-1.1	0.8	2.3	1.5	0.5	-1.4	-3.0	-0.3	(1)	1.4
Unit labor cost	1.8	2.8	4.9	13.6	6.5	4.8	5.3	7.6	9.7	9.6	7.4	(1)	4.8
Unit nonlabor payments	7.4	2.7	1.5	7.1	20.1	4.6	5.2	3.8	4.6	8.8	10.8	(1)	4.0
Implicit price deflator	3.5	2.8	3.6	11.4	10.9	4.8	5.2	6.4	7.9	9.1	8.2	(1)	4.5
Manufacturing:													
Output per hour of all persons	6.1	5.0	5.3	-2.4	2.9	4.4	2.4	0.9	1.1	-0.3	2.7	2.6	2.9
Compensation per hour	6.1	5.4	7.2	10.6	11.9	8.0	8.3	8.2	9.8	10.7	11.1	5.8	6.9
Real compensation per hour	1.8	2.0	0.9	-0.3	2.5	2.1	1.7	0.5	-1.3	-2.5	0.7	2.0	1.4
Unit labor cost	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.3	8.6	11.0	[r]8.7	3.1	4.1
Unit nonlabor payments	11.2	0.8	-3.3	-1.0	25.9	7.4	5.2	4.7	0.8	2.8	[r]12.7	[r]2.9	[r]4.3
Implicit price deflator	3.1	0.5	0.3	9.0	12.1	4.8	5.6	6.5	6.4	0.8	[r]8.7	[r]3.1	[r]4.3

[1] Not available.

r = revised.

30. Quarterly indexes of productivity, hourly compensation, unit costs, and prices, seasonally adjusted

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1979		1980				1981				1982
	1980	1981	III	IV	I	II	III	IV	I	II	III	IV	I
Private business sector:													
Output per hour of all persons	99.3	100.4	99.4	99.1	99.5	99.1	99.4	99.1	100.3	101.2	100.9	99.2	[p]98.8
Compensation per hour	131.5	144.6	120.7	123.2	126.4	130.1	133.1	136.9	139.8	143.3	146.5	148.5	[p]151.4
Real compensation per hour	96.7	[r]95.3	99.2	98.0	96.7	96.8	96.8	96.0	95.1	95.0	95.3	95.8	[p]96.0
Unit labor cost	132.4	144.0	121.4	124.3	127.0	131.3	133.9	137.1	139.4	141.6	145.2	149.7	[p]153.0
Unit nonlabor payments	118.3	[r]130.6	111.5	112.2	115.2	116.0	119.7	122.7	127.6	129.3	132.4	[r]132.8	[p]129.0
Implicit price deflator	127.6	139.4	118.1	120.2	123.0	126.1	129.1	132.2	135.4	137.5	140.9	143.9	[p]144.9
Nonfarm business sector:													
Output per hour of all persons	98.9	99.7	98.9	98.6	99.0	98.2	99.0	99.0	100.0	100.4	99.9	99.2	[p]98.3
Compensation per hour	130.8	143.9	120.2	123.0	126.0	129.4	132.3	135.4	139.2	142.6	145.7	147.9	[p]150.9
Real compensation per hour	96.2	95.9	98.8	97.8	96.4	96.0	96.3	95.7	95.7	95.3	95.5	95.4	[p]95.6
Unit labor cost	132.4	144.3	121.5	124.4	127.4	131.8	133.6	136.8	139.1	141.9	145.8	[r]150.7	[p]153.6
Unit nonlabor payments	117.6	[r]130.4	108.2	110.1	113.9	115.1	119.2	122.9	127.8	128.7	132.2	[r]132.8	[p]129.2
Implicit price deflator	127.4	[r]139.7	117.4	119.7	122.9	126.3	129.6	131.9	135.3	137.5	141.2	[r]144.7	[p]145.5
Nonfinancial corporations:													
Output per hour of all employees	101.6	103.5	100.5	99.8	100.2	100.1	101.6	101.8	[r]102.4	[r]104.0	103.9	[p]102.4	(1)
Compensation per hour	130.7	143.9	120.1	122.7	125.7	129.3	132.5	136.5	[r]138.3	[r]142.4	145.5	[p]149.0	(1)
Real compensation per hour	96.2	95.9	98.7	97.5	96.2	96.0	96.5	95.7	95.7	[r]96.3	[r]95.7	[p]95.9	(1)
Total unit costs	129.7	140.9	118.2	121.3	124.2	129.2	131.1	134.1	136.9	138.7	142.2	[p]147.9	(1)
Unit labor cost	129.4	[r]139.6	119.5	122.8	125.4	129.1	130.2	133.1	134.7	137.0	140.2	[p]144.6	(1)
Unit nonlabor costs	130.2	146.1	114.6	117.2	120.8	129.3	133.9	136.9	138.5	143.6	147.7	[p]153.0	(1)
Unit profits	90.2	103.6	97.5	92.2	95.5	83.4	89.1	92.4	106.8	102.6	106.7	[p]98.6	(1)
Implicit price deflator	125.2	138.7	115.8	118.1	121.0	124.1	128.4	129.5	132.7	134.7	138.2	[p]141.4	(1)
Manufacturing:													
Output per hour of all persons	101.7	[r]104.0	102.0	102.1	[r]102.1	[r]100.8	100.7	[r]103.1	[r]103.6	[r]104.6	[r]105.0	[r]102.0	[p]100.5
Compensation per hour	131.6	146.2	119.8	122.3	125.4	130.0	133.9	137.3	141.1	144.8	148.0	[r]150.8	[p]154.7
Real compensation per hour	96.8	97.4	99.5	97.2	96.0	96.5	97.5	97.0	97.1	97.8	97.3	[r]97.2	[p]99.0
Unit labor cost	129.4	[r]140.6	117.5	119.8	[r]122.8	129.0	133.0	[r]133.2	[r]136.2	[r]138.4	[r]141.0	[r]147.8	[p]154.0

[1] Not available.

r = revised.

31. Percent change from preceding quarter and year in productivity, hourly compensation, unit costs, and prices, seasonally adjusted at annual rate

[1977 = 100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	III 1980 to IV 1980	IV 1980 to I 1981	I 1981 to II 1981	II 1981 to III 1981	III 1981 to IV 1981	IV 1981 to I 1982	IV 1979 to IV 1980	I 1980 to I 1981	II 1980 to II 1981	III 1980 to III 1981	IV 1980 to IV 1981	I 1981 to I 1982
Private business sector:												
Output per hour of all persons	−1.1	4.7	3.5	−1.1	−0.5	^{p}−1.0	0.0	0.8	2.1	1.5	0.0	^{p}−1.4
Compensation per hour	8.6	11.9	10.4	9.3	5.5	^{p}8.1	10.3	10.0	10.1	10.1	9.3	^{p}8.3
Real compensation per hour	−3.8	0.5	3.2	−2.3	−2.1	^{p}4.7	−2.2	−0.8	0.3	−0.6	−0.2	^{p}0.8
Unit labor costs	9.8	6.9	6.6	10.6	12.9	^{p}9.1	10.3	9.7	7.8	8.5	9.2	^{p}9.8
Unit nonlabor payments	10.2	17.1	5.3	10.1	0.0	^{p}−10.3	9.3	10.9	11.5	10.6	^{r}8.1	^{p}1.1
Implicit price deflator	9.9	10.6	6.2	10.4	8.7	^{p}2.8	10.0	10.1	9.0	9.1	^{r}8.9	^{p}7.0
Nonfarm business sector:												
Output per hour of all persons	−0.2	4.4	1.4	−1.7	−0.8	^{p}0.3	0.2	1.2	2.3	0.9	−0.9	^{p}−1.9
Compensation per hour	9.8	11.7	9.8	9.5	6.2	^{p}8.4	10.1	10.5	10.0	10.2	^{r}9.3	^{p}8.4
Real compensation per hour	−2.7	0.3	2.5	−2.2	−1.5	^{p}5.0	−2.2	−0.7	0.3	−0.8	−0.2	^{p}0.9
Unit labor costs	10.1	7.0	8.1	11.5	14.0	^{p}8.1	9.9	9.2	7.6	9.2	10.1	^{p}10.4
Unit nonlabor payments	9.9	20.2	3.0	11.3	−1.6	^{p}−10.2	10.8	12.2	11.8	10.9	8.8	^{p}1.2
Implicit price deflator	10.0	11.0	6.5	11.4	10.0	^{p}2.2	10.2	10.1	8.9	9.7	9.7	^{p}7.5
Nonfinancial corporations:												
Output per hour of all employees	0.0	^{r}6.6	2.2	−0.5	^{p}−5.5	(1)	1.9	^{r}3.2	3.8	2.0	^{p}0.6	(1)
Compensation per hour	9.4	^{r}11.7	9.3	^{r}9.1	^{p}8.9	(1)	10.4	10.8	10.1	^{r}9.9	^{p}9.2	(1)
Real compensation per hour	−3.1	^{r}0.5	2.1	−2.5	^{p}0.9	(1)	−1.9	^{r}−0.4	^{r}0.4	^{r}−0.8	^{p}−0.3	(1)
Total unit costs	9.4	5.6	8.4	10.3	^{p}14.4	(1)	10.5	9.5	7.4	8.4	^{p}9.6	(1)
Unit labor costs	9.4	4.8	7.0	9.7	^{p}13.2	(1)	8.4	7.4	6.1	7.7	^{p}8.6	(1)
Unit nonlabor costs	9.5	7.9	12.3	11.8	^{p}17.6	(1)	16.8	15.4	11.1	10.4	^{p}12.3	(1)
Unit profits	15.7	77.9	−13.9	15.7	^{p}−32.6	(1)	0.3	11.8	23.3	18.7	^{p}4.5	(1)
Implicit price deflator	9.9	10.4	6.2	10.7	^{p}9.8	(1)	9.6	9.7	8.6	9.3	^{p}8.2	(1)
Manufacturing:												
Output per hour of all persons	^{r}3.8	^{r}1.9	^{r}4.1	1.2	^{r}−0.8	^{p}−5.8	^{r}1.0	^{r}1.5	^{r}3.8	^{r}4.2	^{r}−1.1	^{p}−3.0
Compensation per hour	10.5	11.8	10.8	9.3	^{r}7.6	^{p}10.9	12.3	12.5	11.4	10.5	9.9	^{p}8.6
Real compensation per hour	−2.2	−0.2	3.5	−2.4	^{r}−0.2	^{p}7.4	−0.2	1.1	1.5	−0.2	0.3	^{p}2.0
Unit labor costs	0.6	^{r}9.2	^{r}6.4	^{r}7.9	20.7	^{p}17.6	^{r}11.2	^{r}10.9	^{r}7.3	^{r}6.0	^{r}1.9	^{p}13.0

(1) Not available.

r = revised.

WAGE AND COMPENSATION DATA

Data for the Employment Cost Index are reported to the Bureau of Labor Statistics by a sample of 2,000 private nonfarm establishments and 750 State and local government units selected to represent total employment in those sectors. The sample covers approximately 10,000 occupations in the private sector and about 3,700 in State and local governments.

Data on negotiated wage and benefit changes are obtained from contracts on file at the Bureau, direct contact with the parties, and secondary sources.

Definitions

The **Employment Cost Index** (ECI) is a quarterly measure of the average change in the cost of employing labor. The rate of total compensation, which comprises wages, salaries, and employer costs for employee benefits, is collected for workers performing specified tasks. Employment in each occupation is held constant over time for all series produced in the ECI, except those by region, bargaining status, and area. As a consequence, only changes in compensation are measured. Industry and occupational employment data from the 1970 Census of Population are used in deriving constant weights for the ECI. While holding total industry and occupational employment fixed, in the estimation of indexes by region, bargaining status, and area, the employment in those measures is allowed to vary over time in accord with changes in the sample. The rate of change (in percent) is available for wages and salaries, as well as for total compensation. Data are collected for the pay period including the 12th day of the survey months of March, June, September, and December. The statistics are neither annualized nor adjusted for seasonal influence.

Wages and salaries consist of earnings before payroll deductions, excluding premium pay for overtime, work on weekends and holidays, and shift differentials. Production bonuses, incentive earnings, commissions, and cost-of-living adjustments are included; nonproduction bonuses are included with other supplemental pay items in the benefits category; and payments-in-kind, free room and board, and tips are excluded. *Benefits* include supplemental pay, insurance, retirement and savings plans, and hours-related and legally required benefits.

Data on negotiated wage changes apply to private nonfarm industry collective bargaining agreements covering 1,000 workers or more. Data on compensation changes apply only to those agreements covering 5,000 workers or more. *First-year* wage or compensation changes refer to average negotiated changes for workers covered by settlements reached in the period and implemented within the first 12 months after the effective date of the agreement. *Changes over the life of the agreement* refer to all adjustments specified in the contract, expressed as an average annual rate. These measures exclude wage changes that may occur under cost-of-living adjustment (COLA) clauses, that are triggered by movements in the Consumer Price Index. *Wage-rate changes* are expressed as a percent of straight-time hourly earnings: *compensation changes* are expressed as a percent of total wages and benefits.

Effective wage adjustments reflect all negotiated changes implemented in the reference period, regardless of the settlement date. They include changes from settlements reached during the period, changes deferred from contracts negotiated in an earlier period, and cost-of-living adjustments. The data also reflect contracts providing for no wage adjustment in the period. Effective adjustments and each of their components are prorated over all workers in bargaining units with at least 1,000 workers.

Notes on the data

The Employment Cost Index data series began in the fourth quarter of 1975, with the quarterly percent change in wages and salaries in the private nonfarm sector. Data on employer costs for employee benefits were included in 1980, to produce a measure of the percent change in employers' cost for employees' total compensation. State and local government units were added to the ECI coverage in 1981, providing a measure of total compensation change in the civilian nonfarm economy.

Data for the broad white-collar, blue-collar, and service worker groups, and the manufacturing, nonmanufacturing, and service industry groups are presented in the ECI. Additional occupation and industry detail are provided for the wages and salaries component of total compensation in the private nonfarm sector. For State and local government units, additional industry detail is shown for both total compensation and its wages and salaries component.

Historical indexes (June 1981 = 100) of the quarterly rates of changes presented in the ECI are also available.

For a more detailed discussion of the ECI, see chapter 25, "The Employment Cost Index," of the BLS *Handbook of Methods* (Bulletin 1910), and the *Monthly Labor Review* articles: "Employment Cost Index: a measure of change in the 'price of labor'," July 1975; "How benefits will be incorporated into the Employment Cost Index," January 1978; and "The Employment Cost Index: recent trends and expansion," May 1982.

Additional data for the ECI and other measures of wage and compensation changes appear in *Current Wage Developments*, a monthly periodical of the Bureau.

32. Employment Cost Index, total compensation

[June 1981 = 100]

Series	1979	1980				1981				Percent change		
										12 months ended	3 months ended	12 months ended
	Dec.	March	June	Sept.	Dec.	March	June	Sept.	Dec.	Dec. 1980	Dec. 1981	
Civilian nonfarm workers[1]	-	-	-	-	-	-	100.0	102.6	104.5	-	1.9	-
Workers, by occupational group												
White-collar workers	-	-	-	-	-	-	100.0	102.7	104.9	-	2.1	-
Blue-collar workers	-	-	-	-	-	-	100.0	102.3	104.1	-	1.8	-
Service workers	-	-	-	-	-	-	100.0	102.8	104.2	-	1.4	-
Workers, by industry division												
Manufacturing	-	-	-	-	-	-	100.0	102.1	104.0	-	1.9	-
Nonmanufacturing	-	-	-	-	-	-	100.0	102.8	104.8	-	1.9	-
Services	-	-	-	-	-	-	100.0	104.4	107.1	-	2.6	-
Public administration[2]	-	-	-	-	-	-	100.0	104.3	106.0	-	1.6	-
Private nonfarm workers[3]	86.3	88.6	90.7	92.8	94.7	98.1	100.0	102.0	104.0	9.8	2.0	9.8
Workers, by occupational group												
White-collar workers	86.3	88.7	90.8	92.6	94.5	98.3	100.0	101.8	104.0	9.5	2.2	10.1
Blue-collar workers	86.2	88.3	90.5	93.0	94.9	97.8	100.0	102.2	104.0	10.1	1.8	9.6
Service workers	86.2	88.0	90.8	92.7	94.3	98.3	100.0	101.9	103.1	9.4	1.2	9.3
Workers, by industry division												
Manufacturing	86.3	88.7	90.5	92.6	94.7	98.0	100.0	102.1	104.0	9.8	1.9	9.8
Nonmanufacturing	86.3	88.6	90.8	92.9	94.7	98.2	100.0	102.0	103.9	9.8	1.9	9.7
State and local government workers	-	-	-	-	-	-	100.0	105.3	107.4	-	2.0	-
Workers, by occupational group												
White-collar workers	-	-	-	-	-	-	100.0	105.7	107.8	-	2.0	-
Blue-collar workers	-	-	-	-	-	-	100.0	104.2	105.9	-	1.6	-
Workers, by industry division												
Services	-	-	-	-	-	-	100.0	105.8	107.9	-	2.0	-
Schools	-	-	-	-	-	-	100.0	106.0	107.9	-	1.8	-
Elementary and secondary	-	-	-	-	-	-	100.0	106.3	108.3	-	1.9	-
Hospitals and other services[4]	-	-	-	-	-	-	100.0	105.0	107.8	-	2.7	-
Public administration[2]	-	-	-	-	-	-	100.0	104.3	106.0	-	1.6	-

[1] Excludes private household and Federal workers.
[2] Consists of legislative, judicial, administrative, and regulatory activities.
[3] Excludes private household workers.
[4] Includes, for example, library, social, and health services.

NOTE: Dashes indicate data not available.

33. Employment Cost Index, wages and salaries, by bargaining status, region, and area size

[June 1981 = 100]

Series	1979	1980				1981				Percent change		
										12 months ended	3 months ended	12 months ended
	Dec.	March	June	Sept.	Dec.	March	June	Sept.	Dec.	Dec. 1980	Dec. 1981	
Workers, by bargaining status[1]												
Union	86.4	88.4	90.8	93.5	95.8	97.4	100.0	102.7	105.0	10.9	2.2	9.6
Manufacturing	86.6	88.8	91.3	93.8	96.1	97.7	100.0	102.6	104.7	11.0	2.0	8.9
Nonmanufacturing	86.2	88.0	90.4	93.1	95.5	97.1	100.0	102.8	105.2	10.8	2.3	10.2
Nonunion	88.0	90.2	91.8	93.4	95.1	98.2	100.0	101.6	103.2	8.0	1.6	8.5
Manufacturing	88.4	91.0	92.3	93.4	95.4	97.9	100.0	101.7	103.3	7.9	1.6	8.3
Nonmanufacturing	87.9	89.9	91.5	93.4	95.0	98.4	100.0	101.6	103.2	8.1	1.6	8.6
Workers, by region[1]												
Northeast	88.4	90.6	92.5	94.2	96.0	98.3	100.0	101.7	104.4	8.6	2.7	8.8
South	87.3	89.7	91.4	93.2	94.9	98.0	100.0	101.9	102.8	8.8	.9	8.3
North Central	87.6	89.7	91.6	93.3	95.3	98.1	100.0	101.6	103.3	8.8	1.7	8.4
West	86.0	88.2	90.4	93.5	95.3	97.9	100.0	103.2	105.1	10.8	1.8	10.3
Workers, by area[1]												
Metropolitan	87.6	89.4	91.4	93.5	95.4	97.9	100.0	102.1	104.0	9.0	1.9	9.0
Other	87.0	90.1	91.5	92.9	95.1	98.3	100.0	101.8	103.1	9.4	1.3	8.4

[1] The indexes are calculated differently from those for the occupation and industry groups. For a detailed description of the index calculation, see BLS *Handbook of Methods*, Bulletin 1910.

34. Employment Cost Index, wages and salaries, by occupation and industry group

[June 1981 = 100]

Series	1979	1980				1981				Percent change		
										12 months ended	3 months ended	12 months ended
	Dec.	March	June	Sept.	Dec.	March	June	Sept.	Dec.	Dec. 1980	Dec. 1981	
Civilian nonfarm workers[1]	-	-	-	-	-	-	100.0	102.5	104.4	-	1.9	-
Workers, by occupational group												
White-collar workers	-	-	-	-	-	-	100.0	102.6	104.7	-	2.0	-
Blue-collar workers	-	-	-	-	-	-	100.0	102.4	104.0	-	1.6	-
Service workers	-	-	-	-	-	-	100.0	102.5	103.6	-	1.1	-
Workers, by industry division												
Manufacturing	-	-	-	-	-	-	100.0	102.1	104.0	-	1.9	-
Nonmanufacturing	-	-	-	-	-	-	100.0	102.7	104.5	-	1.8	-
Services	-	-	-	-	-	-	100.0	104.4	106.6	-	2.1	-
Public administration[2]	-	-	-	-	-	-	100.0	103.8	105.5	-	1.6	-
All private nonfarm workers[3]	87.5	89.6	91.5	93.5	95.4	98.0	100.0	102.0	103.8	9.0	1.8	8.8
Workers, by occupational group												
White-collar workers	87.6	89.7	91.4	93.3	95.2	98.1	100.0	101.8	103.9	8.7	2.1	9.1
Professional and technical workers	86.3	89.2	90.8	93.2	95.3	98.2	100.0	103.3	105.5	10.5	2.1	10.7
Managers and administrators	88.3	90.6	92.0	93.5	94.7	98.6	100.0	101.6	102.8	7.2	1.2	8.6
Salesworkers	88.9	88.5	90.7	92.2	94.8	96.2	100.0	98.0	101.9	6.7	4.0	7.5
Clerical workers	87.7	90.3	91.9	93.8	95.7	98.6	100.0	102.7	104.2	9.1	1.5	8.9
Blue-collar workers	87.4	89.3	91.6	93.8	95.7	97.7	100.0	102.3	103.9	9.6	1.6	8.6
Craft and kindred workers	87.8	89.3	91.4	94.0	96.1	97.8	100.0	102.9	104.3	9.4	1.4	8.5
Operatives, except transport	86.6	89.4	91.5	93.6	95.5	97.8	100.0	102.1	104.1	10.2	2.0	9.0
Transport equipment operatives	88.1	89.1	92.2	93.5	95.3	96.8	100.0	101.0	102.7	8.2	1.7	7.8
Nonfarm laborers	87.4	89.6	91.8	93.9	95.7	97.5	100.0	101.5	103.3	9.5	1.8	7.9
Service workers	87.7	90.8	91.9	93.4	94.8	99.2	100.0	101.8	102.7	8.1	.9	8.3
Workers, by industry division												
Manufacturing	87.5	89.9	91.8	93.6	95.7	97.9	100.0	102.1	104.0	9.4	1.9	8.7
Durables	87.1	89.3	91.2	93.5	95.7	97.9	100.0	102.1	104.5	9.8	2.4	9.2
Nondurables	88.1	91.0	92.7	93.8	95.7	97.8	100.0	102.0	103.1	8.6	1.1	7.7
Nonmanufacturing	87.5	89.5	91.3	93.4	95.2	98.1	100.0	102.0	103.8	8.8	1.8	9.0
Construction	88.2	89.3	91.9	94.5	95.9	97.6	100.0	103.0	104.3	8.8	1.3	8.8
Transportation and public utilities	86.0	88.2	90.2	93.1	95.6	97.7	100.0	102.0	103.6	11.1	1.6	8.4
Wholesale and retail trade	88.2	90.5	92.2	93.6	95.1	98.2	100.0	101.3	102.3	7.8	1.0	7.6
Wholesale trade	87.2	89.7	92.1	93.0	95.9	98.5	100.0	102.0	103.4	10.0	1.4	7.8
Retail trade	88.6	90.8	92.2	93.8	94.8	98.1	100.0	101.0	101.9	7.0	.9	7.5
Finance, insurance, and real estate	88.7	87.1	89.4	91.2	93.1	95.7	100.0	98.3	102.3	7.4	4.1	9.9
Services	88.0	90.5	91.9	94.2	95.7	99.6	100.0	103.6	105.8	8.7	2.1	10.6
State and local governments	-	-	-	-	-	-	100.0	105.0	107.0	-	1.9	-
Workers, by occupational group												
White-collar workers	-	-	-	-	-	-	100.0	105.4	107.5	-	2.0	-
Blue-collar workers	-	-	-	-	-	-	100.0	103.9	105.5	-	1.5	-
Workers, by industry division			-	-	-							
Services	-	-				-	100.0	105.5	107.6	-	2.0	-
Schools	-	-	-	-	-	-	100.0	105.7	107.7	-	1.9	-
Elementary and secondary	-	-	-	-	-	-	100.0	106.0	107.9	-	1.8	-
Hospitals and other services[4]	-	-	-	-	-	-	100.0	104.6	107.3	-	2.6	-
Public administration[2]	-	-	-	-	-	-	100.0	103.3	105.5	-	1.6	-

[1] Excludes private household and Federal workers.

[2] Consists of legislative, judicial, administrative, and regulatory activities.

[3] Excludes private household workers.

[4] Includes for example, library, social, and health services.

NOTE: Dashes indicate data not available.

35. Wage and compensation change, major collective bargaining settlements, 1977 to date

[In percent]

Measure	Annual average				Quarterly average								
					1980				1981				1982
	1978	1979	1980	1981	I	II	III	IV	I	II	III	IV	I^p
Total compensation changes covering 5,000 workers or more, all industries:													
First year of contract	8.3	9.0	10.4	10.2	8.8	10.2	11.4	8.5	7.7	11.6	10.5	11.0	1.8
Annual rate over life of contract	6.3	6.6	7.1	8.3	6.7	7.4	7.2	8.1	7.2	10.8	8.1	5.8	1.1
Wage rate changes covering at least 1,000 workers, all industries:													
First year of contract	7.6	7.4	9.5	9.8	8.2	9.1	10.5	8.3	7.1	11.8	10.8	9.0	2.2
Annual rate over life of contract	6.4	6.0	7.1	7.9	6.5	7.3	7.4	6.5	6.2	9.7	8.7	5.7	2.0
Manufacturing:													
First year of contract	8.3	6.9	7.4	7.2	7.2	6.7	8.4	7.8	6.4	8.2	9.0	6.6	1.9
Annual rate over life of contract	6.6	5.4	5.4	6.1	5.7	5.1	5.6	5.8	5.5	6.7	7.5	5.4	1.8
Nonmanufacturing (excluding construction):													
First year of contract	8.0	7.6	9.5	9.8	9.4	10.3	9.5	8.2	8.0	11.8	8.6	9.6	1.8
Annual rate over life of contract	6.5	6.2	6.6	7.3	7.6	8.5	5.9	6.6	7.3	9.1	7.2	5.6	1.4
Construction:													
First year of contract	6.5	8.8	13.6	13.5	10.8	12.2	15.4	14.3	11.4	12.9	16.4	11.4	9.3
Annual rate over life of contract	6.2	8.3	11.5	11.3	9.1	10.4	13.0	12.0	10.3	11.1	12.4	11.7	8.9

36. Effective wage adjustments in collective bargaining units covering 1,000 workers or more, 1977 to date

Measure	Year					Year and quarter								
						1980				1981				1982^p
	1977	1978	1979	1980	1981	I	II	III	IV	I	II	III	IV	I
Average percent adjustment (including no change):														
All industries	8.0	8.2	9.1	9.9	9.5	1.6	3.3	3.5	1.3	1.7	3.2	3.3	1.5	.9
Manufacturing	8.4	8.6	9.6	10.2	9.4	2.0	3.4	2.9	1.7	2.3	2.4	3.1	1.9	.8
Nonmanufacturing	7.6	7.9	8.8	9.7	9.5	1.3	3.2	4.0	1.1	1.2	3.8	3.4	1.1	1.0
From settlements reached in period	3.0	2.0	3.0	3.6	2.5	.4	1.0	1.7	.5	.4	1.1	.5	.4	.1
Deferred from settlements reached in earlier period	3.2	3.7	3.0	3.5	3.8	.5	1.4	1.2	.3	.5	1.4	1.5	.4	.5
From cost-of-living clauses	1.7	2.4	3.1	2.8	3.2	.7	.8	.7	.6	.7	.7	1.2	.6	.2
Total number of workers receiving wage change (in thousands)[1]	—	—	—	—	8,648	—	—	—	—	3,855	4,701	4,364	3,225	2,713
From settlements reached in period	—	—	—	—	2,270	—	—	—	—	579	909	540	604	153
Deferred from settlements reached in earlier period	—	—	—	—	6,267	—	—	—	—	888	2,055	3,023	882	1,033
From cost-of-living clauses	—	—	—	—	4,583	—	—	—	—	2,639	2,688	2,934	2,179	1,750
Number of workers receiving no adjustments (in thousands)	—	—	—	—	145	—	—	—	—	4,937	4,092	4,426	5,588	6,176

---

[1] The total number of workers who received adjustments does not equal the sum of workers that received each type of adjustment, because some workers received more than one type of adjustment during the period.

WORK STOPPAGE DATA

WORK STOPPAGES include all known strikes or lockouts involving 1,000 workers or more and lasting a full shift or longer. Data are based largely on newspaper accounts and cover all workers idle one shift or more in establishments directly involved in a stoppage. They do not measure the indirect or secondary effect on other establishments whose employees are idle owing to material or service shortages.

Estimates of days idle as a percent of estimated working time measures only the impact of larger strikes (1,000 workers or more). Formerly, these estimates measured the impact of strikes involving 6 workers or more; that is, the impact of virtually *all* strikes. Due to budget stringencies, collection of data on strikes involving 6 workers or more was discontinued with the December 1981 data.

37. Work stoppages involving 1,000 workers or more, 1947 to date

Month and year		Number of stoppages		Workers involved		Days idle	
		Beginning in month or year	In effect during month or year	Beginning in month or year (in thousands)	In effect during month (in thousands)	Number (in thousands)	Percent of estimated working time
1947		270	....	1,629	....	25,720	
1948		245	....	1,435	....	26,127	.22
1949		262	....	2,537	....	43,420	.38
1950		424	....	1,698	....	30,390	.26
1951		415	....	1,462	....	15,070	.12
1952		470	....	2,746	....	48,820	.38
1953		437	....	1,623	....	18,130	.14
1954		265	....	1,075	....	16,630	.13
1955		363	....	2,055	....	21,180	.16
1956		287	....	1,370	....	26,840	.20
1957		279	....	887	....	10,340	.07
1958		332	....	1,587	....	17,900	.13
1959		245	....	1,381	....	60,850	.43
1960		222	....	896	....	13,260	.09
1961		195	....	1,031	....	10,140	.07
1962		211	....	793	....	11,760	.08
1963		181	....	512	....	10,020	.07
1964		246	....	1,183	....	16,220	.11
1965		268	....	999	....	15,140	.10
1966		321	....	1,300	....	16,000	.10
1967		381	....	2,192	....	31,320	.18
1968		392	....	1,855	....	35,567	.20
1969		412	....	1,576	....	29,397	.16
1970		381	....	2,468	....	52,761	.29
1971		298	....	2,516	....	35,538	.19
1972		250	....	975	....	16,764	.09
1973		317	....	1,400	....	16,260	.08
1974		424	....	1,796	....	31,809	.16
1975		235	....	965	....	17,563	.09
1976		231	....	1,519	....	23,962	.12
1977		298	....	1,212	....	21,258	.10
1978		219	....	1,006	....	23,774	.11
1979		235	....	1,021	....	20,409	.09
1980		187	....	795	....	20,844	.09
1981		145	....	729	....	16,908	.07
1981:	January	6	12	12.0	29.6	257.9	.01
	February	7	10	10.7	20.9	118.5	.01
	March	16	20	201.6	207.8	861.8	.04
	April	17	27	48.0	223.5	4,085.2	.20
1982 p:	January	2	4	6.1	11.4	109.9	.01
	February	2	6	2.5	13.9	238.9	.01
	March	2	7	7.1	20.1	330.6	.02
	April	8	14	34.7	53.1	451.9	.02

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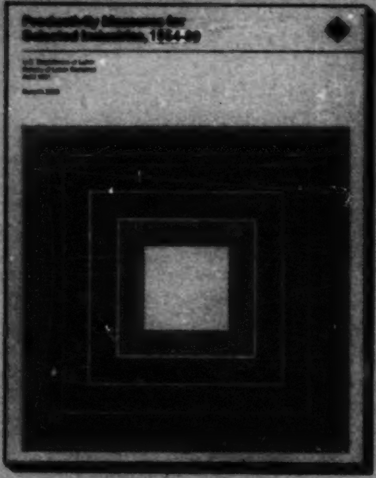

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U.S. Department of Labor
Bureau of Labor Statistics
July 1982

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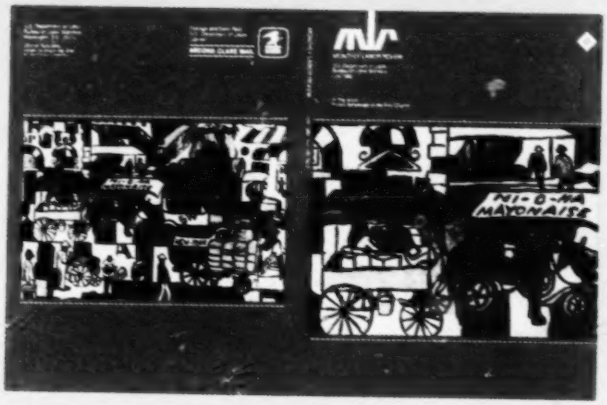

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Labor Month In Review

WORK FORCE REDUCTIONS. Around the world, many firms have found it necessary to reduce the number of workers on their payrolls. The problem has caused governments, business, and workers to essay new solutions through legislation, administrative action, and collective bargaining. To assess the significance of recent developments, the International Labor Office invited a number of experts to prepare studies of current law and practice in their countries. This year, the ILO issued a volume of selected studies. The following excerpts are taken from the comparative survey of national practices by Edward Yemin, editor of the volume and head of the Labor Legislation Section of the ILO:

Change. In the industrialized market economies, a decade of growth and relative full employment in the 1960's was followed by a decade in which recurrent recessions threw large numbers of persons out of work in circumstances in which the fight against inflation muted recourse to classical Keynesian solutions for growing unemployment. At the same time, the introduction of technological innovations caused redundancies in certain industries. In addition, certain important industries in some countries went through periods of crisis and contraction due to structural problems and international competition.

Definition. By work force reduction or redundancy, we mean dismissal or long-term layoff of workers for economic, structural, or technological reasons intended either to reduce the number of workers employed or to alter the composition of the work force. Work force reductions may be effectuated by different methods from the legal point of view. The distinctions between these methods, derived from the law governing contracts of employment in the countries concerned, have become more sharply drawn in Europe and Japan, where a more formal legal view of the employment relationship has grown up, than in Canada and the United States, where the relationship still tends to be rather informal.

Comparisons. Work force reductions affect the contracts of employment of the workers concerned, involving a termination or suspension of such contracts. In European countries and in Japan, contracts of employment are either of an indefinite duration (in which case they may be terminated by giving prior notice, usually subject to rules protecting workers against unjustified dismissal), or they are for a fixed duration or specified task (in which case they terminate upon expiration of the agreed period or completion of the given task). In these countries, indefinite-duration contracts of employment tend to prevail, recourse to fixed-term contracts being limited in practice, sometimes as a result of legal restrictions on their use. In Canada and the United States, contracts of employment are generally deemed to be from day to day or even from hour to hour and may be terminated by either party at will in the absence of a contrary stipulation in the contract or in an applicable collective agreement.

In European countries, work force reductions tend to be carried out mainly through termination of the contracts of employment of the workers concerned (by dismissal, induced resignation or mutual agreement) and to a much lesser degree through nonrenewal of fixed-term contracts (few workers being employed under such contracts). Suspensions of the contract are sometimes resorted to in situations which clearly require very short interruptions of work and, when used in times of economic difficulties, are more closely associated with work-sharing arrangements such as short-time work.

In Japan, in situations where the "life-time employment" system is implemented, employers avoid as far as possible termination of their regular work force, preferring to effectuate any needed work force reduction by nonrenewal of a relatively small body of temporary workers employed under short fixed-term contracts. Where this is not sufficient, they still prefer to use other methods, including a form of temporary layoff with part pay, detachment to related companies, or induced voluntary departure. Dismissals of regular workers tend to be used only as a last resort in situations of very severe difficulty.

In Canada and the United States, work force reductions are generally carried out by layoff; however, this term is not used with conceptual precision and is employed to describe work force reductions intended to be of very brief duration and of a somewhat longer duration, and reductions that are intended to be permanent, as well as to reductions the length of which the employer is unable to foresee. Layoff may thus be intended at the outset to be either a suspension of the employment relationship or a termination; but it may also be a suspension which at some point in time becomes, either according to the terms of the applicable agreement or at the election of one of the parties, a termination. This can also occur in other countries, such as Great Britain, where a suspension of the employment relationship may be treated by the worker as a dismissal under certain circumstances.

The 214-page study, *Work force Reductions in Undertakings*: Policies and measures for the protection of redundant workers in seven industrialized market economy countries, is available from major booksellers or ILO local offices in various countries, or direct from ILO Publications, International Labour Office, CH-1211 Geneva 22, Switzerland. □

Inflation continues to abate during the first quarter

The rate of price increases decelerated in both the retail and primary markets, with the Consumer Price Index posting its lowest quarterly rise since 1965

CRAIG HOWELL, DAVID CALLAHAN, AND MARY BURNS

After slowing substantially in 1981, inflation continued to decelerate in both the retail and primary markets during the first quarter of 1982. The Consumer Price Index for All Urban Consumers (CPI-U) advanced at a seasonally adjusted annual rate of increase of 1.0 percent, the lowest quarterly rise since 1965.[1] (See table 1.) The recession and a continued abundance of oil were among the principal influences pushing inflation down. The housing and auto industries, particularly hard hit by slumping demand, showed significant price decreases. Retail gasoline prices fell at a record rate, as supplies remained high.

One measure of the underlying rate of inflation—the CPI for all items less food, energy, and mortgage interest costs—increased at an annual rate of 5.7 percent in the first quarter. This was slightly more than in the preceding 3 months but was somewhat slower than the 8.0-percent rise in 1981. Replacing the present homeownership component with the future rental equivalence measure (CPI-U-X1),[2] the index would have advanced at a rate of 2.7 percent, compared with 8.5 percent in 1981.

At the primary market level, the Producer Price Index (PPI) for Finished Goods edged up at a seasonally adjusted annual rate of 0.6 percent, the slowest quarterly advance for this index since it dipped during the first quarter of 1976. The finished energy goods index fell at a rate of 18.5 percent, a drop approached only by a 14.2-percent rate of decline in the first quarter of 1976. Price increases for capital equipment and for finished consumer goods other than foods and energy both slowed to rates below 4 percent, considerably less than in other recent quarters. The index for finished consumer foods moved up moderately. Prices for intermediate goods declined slightly in the first 3 months of 1982, the first decrease since the second quarter of 1975. Because of higher raw foodstuff prices, the crude materials index rose at a rate of 1.0 percent, following sharp declines in the third and fourth quarters of 1981.

The continuing deterioration of the economy and the persistence of the highest levels of real (that is, inflation-adjusted) interest rates since the Great Depression restrained inflation in many retail and primary markets. Consumer reluctance to expand purchases of goods and services reflected such factors as fears of possible unemployment, the rising burden of interest costs on debts incurred in more inflationary times, and the difficulty of obtaining home mortgages. Some business firms canceled or postponed capital expenditures in the face of uncertain demand and their own strained profit and cash flow positions. Many companies liquidated excessive inventories because of poor

---

Craig Howell, David Callahan, and Mary Burns are economists in the Office of Prices and Living Conditions, Bureau of Labor Statistics. They were assisted by Jesse Thomas, Andrew Clem, John Wetmore, and Eddie Lamb, economists in the same office.

sales and high interest costs, or delayed rebuilding inventories until an end to the recession was more apparent. By boosting the value of the American dollar in international currency markets, high interest rates tended to price American exports out of foreign markets, while improving the competitive standing of imports in this country.

New car prices decline

Retail prices for commodities other than food and energy increased at a seasonally adjusted annual rate of 4.5 percent, a larger increase than in the fourth quarter of 1981, but somewhat below the 1981 yearly rate of 5.9 percent. (See table 2.) Prices of most commodities

Table 1. Changes in selected components of the Consumer and Producer Price Indexes, 1981–82

Grouping	Relative importance Dec. 1981	Percent change Mar. 1981 to Mar. 1982	Compound annual rates, seasonally adjusted except as noted, for 3 months ended—			
			1981			1982
			June	Sept.	Dec.	Mar.
Consumer Price Index for All Urban Consumers (CPI-U)[1]						
All items	100.0	6.8	8.1	12.8	5.4	1.0
Food and beverages	17.5	4.0	2.3	7.6	1.8	4.2
Food at home	11.3	3.2	0.3	7.8	–0.3	4.9
Food away from home	5.2	5.7	6.6	7.1	6.1	2.8
Alcoholic beverages	1.0	4.8	5.6	7.0	1.4	5.6
Housing	46.0	8.5	13.0	16.9	3.6	1.3
Shelter	31.9	8.6	15.1	19.8	1.8	–0.9
Rent, residential[2]	5.1	8.2	7.7	10.2	9.0	5.9
Homeownership	26.1	8.6	16.9	21.5	0.3	–2.4
Home purchase[2]	9.6	3.1	8.7	12.4	–5.7	–1.9
Financing, taxes and insurance[2]	12.9	13.6	25.9	33.1	3.6	–4.2
Maintenance and repairs	3.6	6.9	10.7	8.9	5.6	2.4
Fuel and utilities	6.9	10.0	8.6	14.8	9.3	7.5
Household furnishings and operation	7.2	6.8	7.8	6.9	6.8	5.7
Apparel and upkeep	4.6	3.2	2.6	6.4	0.8	3.2
Apparel commodities	4.0	2.6	1.8	5.5	–0.2	3.2
Apparel services	.7	7.5	8.9	9.8	7.7	3.6
Transportation	19.3	4.2	2.3	11.6	11.6	–7.2
Private transportation	18.0	3.5	1.6	10.0	12.0	–8.3
Public transportation[2]	1.3	14.6	14.3	37.5	5.8	3.5
Medical care	4.9	12.0	11.8	14.4	11.7	10.2
Medical care commodities	.8	10.7	12.3	11.9	9.1	9.5
Medical care services	4.1	12.2	11.6	14.9	12.3	10.4
Entertainment	3.6	6.7	5.1	6.9	7.3	7.4
Other goods and services	4.0	10.3	11.3	10.8	8.4	10.1
All items	100.0	6.8	8.1	12.8	5.4	1.0
Food	16.6	4.0	2.2	7.7	1.7	3.9
Commodities less food and energy	32.8	6.2	8.7	9.5	2.2	4.5
Energy[2]	11.1	–.8	4.7	3.0	–2.4	–8.0
Services less energy	39.5	10.9	14.8	19.1	7.6	2.4
All items	100.0	6.8	8.1	12.8	5.4	1.0
Services	43.2	11.3	14.8	19.2	7.8	3.5
Commodities	56.8	3.6	3.2	8.5	3.6	–0.8
All items less food, energy and mortgage interest costs	61.5	7.7	8.6	11.4	5.2	5.7
All items (X-1 approach)	—	6.4	5.9	10.1	7.5	2.7
Producer Price Index (PPI) by stage of processing[1]						
Finished goods	100.0	4.1	7.1	3.4	5.2	0.6
Finished energy goods	12.7	–2.8	3.5	–3.6	9.7	–18.5
Finished consumer foods	21.9	1.8	3.5	1.6	–3.7	5.8
Finished goods less foods	78.1	4.8	8.1	4.0	7.7	–.7
Finished goods less foods and energy	65.3	6.3	9.0	5.6	7.4	3.2
Finished consumer goods less foods	57.2	4.0	7.6	3.2	7.2	–1.7
Finished consumer goods less foods and energy	44.5	6.0	8.8	5.4	6.4	3.6
Capital equipment	20.8	6.8	10.0	5.7	9.7	2.1
Intermediate materials, supplies and components	100.0	2.9	7.4	3.8	2.0	–1.2
Intermediate energy goods	17.0	–.5	1.9	–2.1	4.2	–5.6
Intermediate foods and feeds	5.3	–7.0	–.3	–18.3	–12.9	5.6
Intermediate materials less foods and feeds	94.7	3.6	8.0	5.2	2.8	–1.5
Intermediate materials less foods and energy	77.6	4.6	8.8	7.1	2.4	.3
Crude materials for further processing	100.0	–4.3	10.8	–9.7	–16.6	1.0
Crude energy materials[2]	33.6	.4	4.3	1.1	2.9	–6.5
Crude foodstuffs and feedstuffs	50.6	–5.4	6.4	–18.2	–25.5	23.3
Crude nonfood materials	49.4	–2.7	16.1	1.1	–5.6	–18.4
Crude nonfood materials less energy	15.8	–9.7	47.7	1.2	–22.5	–40.3

[1] See "Definition" and "Notes" preceding tables 19–27 of Current Labor Statistics in this *Review*.

[2] Not seasonally adjusted.

NOTE: PPI data shown above and elsewhere in this article may differ from those previously reported because PPI data through November 1981 have been revised to reflect the availability of late reports and corrections by respondents.

related to the depressed housing and automotive industries decelerated or declined. The home purchase component of the index decreased for the second consecutive quarter. Furniture price advances slowed, as the low level of new housing construction contributed to sluggish demand. Prices for textile housefurnishings also rose less than in the previous 3 months. However, price increases accelerated for many household appliances and equipment, reflecting the annual introduction of new models at higher prices.

New car prices dropped at a rate of 3.0 percent primarily because of rebates by domestic manufacturers. Despite the rebates and lower automobile finance charges, demand remained low throughout the quarter. Used car price increases slowed considerably, following large increases in the second half of 1981. Advances in tire prices continued to decelerate, reflecting the year-long slump in the market.

Retail prices of apparel other than footwear rose at an annual rate of 3.9 percent, after declining in the fourth quarter. The upturn reflected the end of discounts and higher prices for spring merchandise. Price increases for tobacco products, toilet goods, housekeeping supplies, and school books accelerated to double-digit rates.

The PPI for finished consumer goods other than foods and energy moved up at a seasonally adjusted annual rate of 3.6 percent. This represented a substantial slowdown from the 6.4-percent rate of advance at the end of 1981 and the 6.9-percent increase from December 1980 to December 1981. Unusually large rebates for some passenger cars and light motor trucks accounted for much of this deceleration. Continued rapid declines in precious metal prices were reflected in sharply lower prices for gold jewelry, silver flatware, and photographic film (which requires much silver to manufacture). Primary market prices for leather footwear, floor coverings, and televisions and radios also dropped in the first quarter. Price increases slowed markedly for soaps and detergents, books, and household furniture, while prices for sanitary paper products, tires and tubes, and glassware continued to show little or no change.

In contrast, inflation accelerated to double-digit rates in the PPI for a number of consumer products, including newspapers, periodicals, tobacco products, textile housefurnishings, cosmetics, household appliances, and prescription drugs. Each of these indexes climbed at a faster pace during the first 3 months of 1982 than in 1981 as a whole.

Table 2. Changes in retail prices for selected commodities less food and energy, 1981–82

CPI grouping	Relative importance Dec. 1981	Percent change Mar. 1981 to Mar. 1982	Compound annual rate, seasonally adjusted except as noted, for 3 months ended—			
			1981			1982
			June	Sept.	Dec.	Mar.
Commodities less food and energy	100.0	6.2	8.7	9.5	2.2	4.5
Alcoholic beverages	2.9	4.8	5.6	7.0	1.4	5.6
Home purchase[1]	29.2	3.1	8.7	12.4	–5.7	–1.9
Maintenance and repair commodities[1]	1.0	4.6	6.2	1.8	2.6	7.7
Textile housefurnishings	1.5	9.0	8.4	10.3	11.7	5.4
Furniture and bedding	3.5	5.2	3.2	9.0	5.1	3.5
Appliances, including radio and TV[1]	4.0	4.1	6.0	3.9	.5	6.1
Other household equipment[1]	2.7	6.4	6.0	6.6	2.7	10.2
Housekeeping supplies[1]	4.4	7.6	8.8	5.3	6.1	10.2
Apparel commodities less footwear	10.2	2.4	1.2	6.1	–1.4	3.9
Footwear	1.9	3.8	5.2	3.9	5.0	1.0
New cars	9.5	6.3	20.9	3.6	5.0	–3.0
Used cars	9.1	19.3	8.5	44.2	22.7	5.5
Auto parts and equipment[1]	1.8	4.4	4.0	8.0	3.6	2.1
Medical care commodities	2.4	10.7	12.3	11.9	9.1	9.5
Entertainment commodities	6.5	6.5	6.3	6.2	7.0	6.5
Tobacco products[1]	3.2	10.2	13.0	4.8	9.5	13.5
Toilet goods and personal care appliances[1]	2.2	8.2	11.6	4.6	6.2	10.4
Schoolbooks and supplies	.5	14.2	9.2	35.8	2.1	12.7

[1] Not seasonally adjusted.

Capital equipment. The Producer Price Index for capital equipment rose at a seasonally adjusted annual rate of 2.1 percent, considerably less than in any other recent quarter and the slowest rate of advance since the final 3 months of 1972. (See table 3.) Most of this deceleration was caused by the downturn in the motor vehicles index, reflecting manufacturers' rebates on some new cars and light trucks; prices for heavy trucks continued to rise, although at a slower pace than in any other recent quarter. Prices for generators, textile machinery, and food products machinery turned down in the first quarter, and increases slowed for railroad equipment, printing trades machinery, agricultural machinery, metal cutting machine tools, and transformers. Construction machinery prices jumped sharply as the year began but had retreated somewhat by March, reflecting the distressed state of the construction sector.

In contrast, accelerated advances were registered for commercial furniture, photographic equipment, woodworking machinery, metal forming machine tools, and pumps and compressors. Even though demand for most kinds of capital equipment weakened markedly at the end of 1981 and into early 1982, producers of these goods felt that demand was strong enough to permit price boosts. Recent changes in tax depreciation rules were especially beneficial to commercial furniture manufacturers.

Prices for oilfield and gasfield machinery climbed at a 12.3-percent rate, twice as much as in the previous quarter, but not as fast as the 17.7-percent increase registered in 1981. Demand for these goods, which had

Table 3. Changes in producer prices for selected capital equipment, 1981–82

PPI grouping	Relative importance Dec. 1981	Percent change Mar. 1981 to Mar. 1982	Compound annual rate, seasonally adjusted except as noted, for 3 months ended—			
			1981			1982
			June	Sept.	Dec.	Mar.
Capital equipment	100.0	6.8	10.0	5.7	9.7	2.1
Agricultural machinery and equipment	5.9	8.9	12.7	7.3	9.5	6.1
Construction machinery and equipment[1]	6.9	7.9	9.7	8.2	6.9	6.7
Metal cutting machine tools	1.7	8.2	4.0	7.6	12.7	8.7
Metal forming machine tools	1.0	6.5	5.2	11.3	2.5	7.1
Pumps, compressors, and equipment	2.1	9.7	12.5	13.4	5.3	8.0
Industrial material handling equipment	3.5	5.5	5.4	8.9	3.6	4.1
Food products machinery	1.8	8.4	12.5	12.5	10.9	-1.8
Textile machinery	1.4	5.6	15.3	4.5	5.2	-1.9
Generators and generator sets	2.4	10.4	10.1	13.5	20.8	-1.8
Transformers and power regulators[1]	2.3	9.5	12.0	10.2	10.1	5.8
Oilfield and gasfield machinery[1]	.9	14.3	11.2	28.8	6.1	12.3
Mining machinery and equipment	.7	8.2	7.2	12.0	7.4	6.1
Office and store machines and equipment[1]	5.8	2.7	.5	6.4	-.3	4.4
Commercial furniture[1]	3.7	8.1	7.3	5.9	3.9	15.7
Passenger cars	10.9	6.9	15.6	-7.7	26.7	-3.3
Light motor trucks[1]	6.8	3.3	15.9	-26.9	76.4	-23.9
Heavy motor trucks[1]	5.3	8.8	13.8	12.6	5.8	3.3
Fixed wing, utility aircraft	4.4	7.9	12.2	11.3	2.8	5.3
Railroad equipment	2.1	5.7	-1.4	9.6	11.5	3.5
Photographic equipment	2.2	3.3	0	-1.5	4.1	11.2

[1] Not seasonally adjusted.

been largely impervious to sluggishness in the overall economy over the past several years, became much weaker as 1982 began. The worldwide glut of oil and its downward pressure on prices of many kinds of petroleum products led to a marked drop in domestic oil exploration and development.

Gasoline cheaper, utilities higher

Consumer energy prices. Energy items in the CPI dropped at an annual rate of 8.0 percent in the first 3 months of 1982, the largest quarterly decrease since 1962. (See table 4.) Prices for all petroleum-based products continued the downward trend experienced since the spring of 1981. Gasoline and home heating oil supplies remained at very high levels relative to demand, leading to lower prices.

Retail gasoline prices plunged at a record rate of 27.8 percent, a dramatic contrast to the 50.4-percent rate of increase recorded for the first quarter of 1981. On an unadjusted basis, gasoline prices dropped each month without interruption from March 1981 to March 1982. The major factors pushing prices down were abundant supplies and lower demand. In addition, large supplies of low-cost Chinese gasoline were shipped to the Pacific and Gulf Coast areas. These additional supplies also reduced prices, particularly on the West Coast. Competitive pressures led to price wars in certain sections of the country, with a resultant squeeze on retailer profit margins.

Fuel oil prices decreased at an annual rate of 10.4 percent for the first quarter, the largest decline since 1965, in spite of extremely cold weather in much of the country. Factors affecting gasoline prices had a similar impact on fuel oil prices. Fuel oil prices decreased continually from March 1981 through March 1982, except when increased seasonal demand pushed prices up slightly in December and January.

In contrast to the declining trend in prices of petroleum products, consumer price increases for gas and electricity accelerated to an annual rate of 15.4 percent in the first quarter, from a 10.6-percent rate in the fourth quarter. Utility rate increases in the West and fuel adjustment increases in the North Central and South regions contributed greatly to the rise in the electricity index. Higher purchased-gas adjustments and rate increases in the South were the major factors pushing up the natural gas index.

Industrial fuels. The PPI for intermediate energy goods turned down with a 5.6-percent seasonally adjusted annual rate of decline, after advancing at a 4.2-percent rate in the fourth quarter. Continued weakening of industrial demand coupled with lower costs of crude oil resulted in price decreases for all fuels derived from petroleum.

The index for liquefied petroleum gas plummeted at a 47.3-percent annual rate; as a result, by the end of the quarter, this index was at the lowest level since the end of 1979. Prices for residual fuel, diesel fuel, and commercial jet fuel continued to fall, but less rapidly than liquefied petroleum gas prices. In marked contrast, the electric power index rose even more sharply than in the fourth quarter. Regulatory authorities granted rate increases to cover greater capital construction costs resulting from high long-term interest rates; likewise, fuel adjustment charges had an upward effect on prices in areas where coal and natural gas are used for power generation.

Crude energy. The crude energy materials index declined at a 6.5-percent annual rate in the first quarter because of sharp decreases in the index for crude petroleum (which reflects only domestic prices). Demand for crude oil continued to slide, as evidenced by the reduced volume of imports (23 percent lower than in the first quarter of 1981 and the lowest level since 1974) and the record-low rate of refinery capacity utilization (65 percent). Domestic crude oil prices fell at a rate of about 20 percent, and import prices showed similar declines. The pricing structure of the Organization of Petroleum Exporting Countries (OPEC) continued to break down, as Libya, Iran, and some other members cut their prices by more than $4 per barrel in an effort to increase their share of a shrinking market. After an emergency meeting of OPEC in March, Saudi Arabia agreed to further reduce its production levels.

Producer prices of natural gas continued to advance, but less than in other recent quarters. The slowdown was concentrated in the intrastate portion of the market, where prices had jumped sharply at the end of 1981. In contrast, somewhat larger advances occurred for interstate gas prices, reflecting the growing share of more expensive "new" gas.[3] Price increases accelerated for coal, as a weather-related surge in demand quickly affected prices because of relatively slim inventories on hand.

Food prices spurt, then dip

After showing small increases in each of the last three months of 1981, the food component of the Consumer Price Index increased rapidly in January and February, before turning down in March. The net annual rate of increase for the quarter was 3.9 percent after seasonal adjustment. The Producer Price Index for finished consumer foods showed a similar pattern during the first quarter, but rose at a net rate of 5.8 percent. The behavior of both indexes paralleled developments in the PPI category for crude foodstuffs and feedstuffs, which declined beginning in August 1981, surged in January, and then moderated in February and March.

Fresh vegetable prices showed the greatest volatility. Decreased winter acreage, the mid-January freeze in Florida, insect damage, shifts in production areas, and reduced imports from Mexico combined to lead to sharply reduced supplies as the year began. The PPI component for fresh vegetables jumped 14.7 percent in December, while the corresponding CPI measure rose 16.8 percent in January. Lettuce was particularly hard hit by whitefly damage in California and Arizona; in the CPI, prices doubled from November to January. By March, the downturn was just as sharp, with lettuce prices approaching the November level. Prices for tomatoes and many other fresh vegetables had a similar pattern. The PPI for fresh vegetables ended with a net decline for the quarter, while the corresponding CPI category ended with a net increase. Citrus fruits were also hit hard by the freeze, and retail prices for both oranges and orange juice rose substantially in January and February. Fresh orange prices had started to fall by March, though, after the extent of the damage turned out to be less than from the 1977 and 1981 freezes.

Cattle prices rose 7.8 percent; hog prices, 17.6 percent; and poultry prices, 9.7 percent over the first quarter as harsh winter weather disrupted production and marketing activity, especially in the North Central States where hog production is concentrated. In addition, hog inventories were down from year-earlier levels as farmers cut back production for 1982. Producer

Table 4. Changes in retail and producer prices for energy items, 1981–82

Item	Index	Relative importance Dec. 1981	Percent change Mar. 1981 to Mar. 1982	Compound annual rate, seasonally adjusted except as noted, for 3 months ended–			
				1981			1982
				June	Sept.	Dec.	Mar.
Finished items (sold to consumers)							
Energy items[1]	CPI	100.0	-0.8	4.7	3.0	-2.4	-8.0
Finished energy goods	PPI	100.0	-2.8	3.5	-3.6	9.7	-18.5
Motor fuels[2]	CPI	54.5	-8.5	-15.7	1.9	12.1	-27.3
Gasoline[3]	CPI	52.7	-8.7	-16.1	1.8	12.3	-27.8
	PPI	55.2	-8.0	-8.9	-8.4	14.7	-25.2
Household fuels	CPI	45.5	9.3	9.1	11.3	9.1	8.5
Fuel oil[1 3 4]	CPI	12.5	-4.2	-6.4	-4.9	5.5	-10.4
	PPI	14.8	-6.3	3.6	-5.8	1.2	-22.0
Gas (piped)[3 5]	CPI	13.4	16.0	17.5	15.6	9.9	21.2
	PPI	20.3	22.9	47.0	16.6	17.4	13.4
Electricity	CPI	19.7	14.4	15.5	20.6	9.9	11.7
Intermediate goods (sold to business)							
Intermediate energy goods	PPI	100.0	-.5	1.9	-2.1	4.2	-5.8
Diesel fuel[3 5]	PPI	9.5	-3.8	4.9	-10.5	-2.1	-6.9
Commercial jet fuel[3 5]	PPI	8.5	-.4	19.0	-10.9	-4.8	-2.8
Residual fuel[3]	PPI	14.1	-12.1	-9.1	-12.5	-17.2	-9.4
Liquefied petroleum gas[5]	PPI	4.4	-15.7	1.3	-7.9	2.5	-47.3
Electric power	PPI	30.6	15.1	11.5	19.8	12.2	17.1
Crude materials							
Crude energy materials[3]	PPI	100.0	.4	4.3	1.1	2.9	-6.5
Natural gas[3 5]	PPI	31.5	22.9	47.0	16.6	17.4	13.4
Crude petroleum[3]	PPI	55.3	-11.6	-12.2	-9.0	-4.6	-19.9
Coal[5]	PPI	13.2	9.5	9.1	15.9	4.3	9.1

[1] Not seasonally adjusted in the CPI.
[2] Includes motor oil, coolant, and similar products.
[3] Prices for these items are lagged one month in the PPI.
[4] Includes coal and bottled gas in the CPI.
[5] Not seasonally adjusted in the PPI.

prices for beef and veal, pork, and processed poultry also increased, although not as sharply. The 9.2-percent increase in producer pork prices translated into a 2.5-percent rise at the retail level.

Corn prices rose 8.7 percent in the first quarter, with virtually all of the increase occurring in January. Cold weather increased demand for feed grains. In addition, large quantities of corn were placed into the Federal grain reserve program. Wheat prices advanced 2.6 percent after seasonal adjustment. Export demand for wheat remained strong. Although cold weather did only minimal damage, the winter wheat crop was not in as good condition as last year's. Nevertheless, larger planted acreage may result in another record harvest. In contrast, milled rice prices continued to fall because of record harvests in the United States and some other rice exporting countries and improved harvests in several rice importing nations. Soybean prices also fell, as the Brazilian crop entered export markets.

Government price support programs played a key role for some farm commodities. Raw sugar prices initially rose in response to new duties and fees on imports designed to prop up domestic prices, but the target price was not achieved before prices started falling to nearly the December level.[4] Prospects of a large European sugar beet crop, large stockpiles of sugar imported before the duty was imposed, and the possibility of duty-free imports of Caribbean sugar all served to hold down prices. Because of a static support price, dairy products showed small retail price increases for four consecutive quarters despite chronic surpluses.

Rent increases ease

The services less energy component of the CPI moved up at a rate of 2.4 percent, compared with a 7.6-percent rate of increase in the previous quarter. The slowdown was largely due to a downturn in contracted mortgage interest costs, as well as slower rates of advance for a broad range of other items, including residential rent, housekeeping services, transportation services, and apparel services. The categories for medical care services and for personal and educational services continued to move up at double-digit rates, although not as fast as in other recent quarters.

Contracted mortgage interest costs declined at a rate of 6.5 percent, following a 2.8-percent rate of increase in the fourth quarter and rapid runups earlier in 1981, reflecting decreases both in house prices and in mortgage interest rates. The component for mortgage interest rates fell at a rate of 5.1 percent, in line with other long-term interest rates. The increase in the residential rent component slowed to a rate of 5.9 percent, following a 9.0-percent rate in the fourth quarter.

The transportation services category moved up at a 6.0-percent rate, considerably less than in the previous quarter. Auto finance charges moved down as some domestic car manufacturers slashed finance rates to make monthly car payments more affordable. The public transportation index (which includes fares for airlines, intercity buses and trains, and intracity mass transit) advanced at a 3.5-percent rate, somewhat less than in the preceding quarter and far less than earlier in 1981. The recent declines in fuel prices were a major factor in this slowdown.

The medical care services component of the CPI moved up at a rate of 10.4 percent, somewhat less than in other recent quarters. Charges for physicians' services moved up at a 9.7-percent rate, also less than in the fourth quarter. The index for hospital rooms rose at a rate of 12.7 percent.

Steel prices steady; gold, silver drop

The Producer Price Index for intermediate materials except foods and energy edged up at a seasonally adjusted annual rate of just 0.3 percent in the first quarter, compared with a rate of 2.4 percent in the fourth quarter. The index for durable manufacturing materials declined at a rate of 7.8 percent, an even larger decrease than at the end of 1981. Lower prices were recorded for most nonferrous metals and mill shapes, jewelers' materials, and hardwood lumber. Steel prices continued to show virtually no change, as high interest rates both weakened domestic demand and encouraged a high level of imports as the dollar rose overseas.

Prices for primary nonferrous metals continued to move down substantially, although not quite as sharply as in the fourth quarter. High interest rates and weak domestic and export markets contributed to the decreases for these metals. The end of massive support buying that had kept tin prices artificially high in late 1981 caused prices to drop severely; by March, the tin index had retreated to virtually the same level as last summer just before the runup began. Copper prices, which had declined in most months since late 1980, were further weakened by high production levels in several South American and African countries.

Gold and silver prices fell 20.3 and 18.4 percent before annualizing. Among the major reasons for these steep declines were large sales of gold by Eastern bloc countries to pay their debts, silver auctions by the General Services Administration, and the attraction of high-yielding financial investments. Prices for jewelers' materials plummeted because of falling gold prices.

Hardwood lumber prices turned down partly because of poor demand from furniture manufacturers resulting from the weak residential construction market. But prices rose for foundry and forge shop products, chiefly because of increased labor and overhead costs.

The nondurable manufacturing materials category dropped at an annual rate of 3.9 percent, following a small rise at the end of 1981. Prices for organic chemicals continued to recede because of low demand and strong competition from imports. The depressed housing and automotive industries caused a sharp downturn in the plastic resins index; prices for these materials had advanced in almost every month of 1981. An oversupply of cotton fabrics, coupled with a drop in domestic demand, meant lower prices for finished fabrics and processed yarns. Following several increases in late 1981, leather prices turned down, partly because tanners and shoe manufacturers were reluctant to rebuild inventories.

However, price increases for inorganic chemicals accelerated, with prices for caustic soda leading the way. Demand for caustic soda, particularly from the printing and publishing industry, remained relatively strong in spite of the recession. A strengthening in domestic demand for gray fabrics and synthetic fibers, especially nylon yarn, caused these prices to advance. Improved export demand led to higher prices for fats and oils.

The PPI measure for construction materials and components showed virtually no change from December to March, following generally small increases during the latter part of 1981. The poor state of construction activity permitted only marginal advances for most construction materials. Prices for a number of items, including plastic construction products, asphalt roofing, concrete products, and millwork, turned down after rising moderately in the closing months of 1981.

At the same time, the reverse was true for prices of gypsum products, building paper, and plywood. These prices advanced following declines at the end of the year, partly reflecting low supplies. Prices for refractories climbed at an unusually rapid pace; recent increases in charges for natural gas, a crucial element in the production of refractories, were the principal cause.

Among other intermediate goods, prices for machine tool parts moved up sharply during the first quarter, as orders for new machine tools sagged and producers took advantage of the consequent firming of demand for replacement parts. Glass container prices moved up substantially in February and March, after showing very little change over the preceding 8 months; the increases passed through higher natural gas costs. The index for unsupported plastic film and sheeting also rose sharply, after edging down slightly over the last half of 1981. Prices for wooden pallets, a close indicator of the state of demand in the industrial sector, continued to fall, reaching their lowest level since May 1978.

Sensitive crude material prices drop sharply

Producer prices for crude nonfood materials except energy, which tend to be highly responsive to shifts in general economic conditions, plunged at a seasonally adjusted annual rate of 40.3 percent. Prices for aluminum and copper base scrap and for iron and steel scrap continued to move down sharply in the first quarter, largely because of a lack of industrial and construction demand, weak export markets, and high interest rates. Wastepaper prices continued to fall, although not as sharply as in the fourth quarter. By the end of the first quarter, paper manufacturers had used only a portion of their wastepaper stockpiles but were purchasing additional supplies because prices were attractively low.

Crude rubber prices, which had fallen through most of 1981, continued to decline in the first quarter, largely because of persistent weakness in the automotive and tire industries. Prices for potash turned down because of an oversupply of fertilizers, excessive potash inventories, and a dwindling export market.

However, temporary short supplies of high quality cotton fibers, coupled with improved Far East and domestic demand, led to an upturn in prices for raw cotton. Prices for cattle hides also turned up as tanners began to replenish their inventories, which had been allowed to decline to unusually low levels. □

FOOTNOTES

[1] For a report on the CPI in relation to the PCE Deflator, see Julie A. Bunn and Jack E. Triplett, "Reconciling the CPI and the PCE Deflator: first quarter 1982," pp. 37–38.

[2] For details on changing the homeownership component, see Robert Gillingham and Walter Lane, "Changing the treatment of shelter costs for homeowners in the CPI," *Monthly Labor Review*, June 1981, pp. 9–14.

[3] Under the Natural Gas Policy Act of 1978, higher prices are allowed for gas produced from wells drilled since 1978.

[4] Effective December 23, 1981, the Government raised duties and fees to bring the price of imported sugar to 19.08 cents per pound, up from 15 cents. This would eliminate the need for the Government to stockpile domestic sugar at the support price of 16.75 cents per pound. However, after an initial sharp increase in price when the duty was raised, raw sugar prices fell in March to just over the support price.

Clerical pay differentials in metropolitan areas, 1961–80

Salaries of office workers generally are higher in large urban areas and in the North Central and Western regions; interarea differences narrowed in the 1960's and widened in the 1970's

Mark S. Sieling

In 1980, salaries of office clerical workers varied widely among 52 areas included in the Bureau of Labor Statistics' area wage survey program. For example, in Davenport-Rock Island-Moline—the highest paying area—clerical pay rates averaged about 50 percent more than those in Norfolk-Virginia Beach-Portsmouth—the lowest paying area. Generally, salaries were higher in larger areas. The highest salaries were in North Central and Western areas, followed by Northeastern areas, and were lowest in Southern areas. Industry mix was an important determinant of an area's relative pay level.

The pay structure in 1980 resembled the pattern in 1961, although significant developments took place within this period. During the 1960's, area differentials gradually diminished. However, in the 1970's, the pattern reversed, and much of the growing uniformity disappeared. These contrasting developments can be attributed, in part, to the differing economic environments in the two decades. The 1960's was a period of almost uninterrupted prosperity, with only moderate rates of price increases during much of the decade; in contrast, the 1970's were characterized by both economic instability and inflationary pressures.

When the areas were ranked by the size of their pay relatives, the order of ranking in 1980 was similar to that of 1961. However, pay relatives in some areas changed substantially over the 20 years, but the changes generally reflected a cumulation of small year-to-year adjustments.

Pay levels among areas mirror the interplay of a variety of forces, ranging from nationwide economic developments to factors unique to specific locations. Moreover, the intensity of these forces may vary over time, leading to changes in interarea wage relationships. This article examines salary levels of office clerical workers in 52 metropolitan areas, highlighting current pay differences and changes in them over the past two decades.[1] In this analysis, a pay relative is defined as each area's average straight-time hourly earnings expressed as a percent of the average for all metropolitan areas combined. For example, a pay relative of 110 indicates that clerical salaries in an area are 10 percent above the national average. Pay relatives were computed by averaging earnings of selected white-collar clerical occupations in an area, using national employments as weights for each job, then dividing the resulting area average by the corresponding national average. Use of national occupational employments for weighting purposes isolates the pay relatives from the influence of area differences in occupational composition. In addition, adjustments are made to eliminate the effect of differences in the timing of individual area surveys.[2]

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Patterns in 1980

Area salary levels are determined by a combination of factors. Some, such as supply and demand conditions in the labor market and occupational employment composition, are unique to an area; others, such as the general pay level of an industry or the effect of nationwide collective bargaining, are determined in a broader context. Although salary levels are unique to an area, some grouping of areas according to common characteristics can be made.

Seven of the eight areas with pay relatives of 106 or more in 1980 were located in the North Central and Western regions. (See table 1.) These areas typically had large concentrations of workers in relatively high-wage manufacturing industries, such as motor vehicles and equipment (Detroit and Toledo), aircraft and parts (Los Angeles, Seattle, and Wichita), and farm machinery (Davenport). This does not imply that the nonmanufacturing sector is unimportant in contributing to overall wage levels. Each of the five areas with overall pay levels 11 percent or more above the national average also had nonmanufacturing pay levels at least 11 percent above the national nonmanufacturing average.

Of the nine areas with pay relatives of 90 or less, seven were in the South and two were in the Northeast. The type of manufacturing industries in the area was a factor for several of these areas. For example, the textile industries are important in Chattanooga and Greenville, while leather footwear is important in Portland (Maine) and jewelry in Providence.

A relationship is also apparent between salary levels and the number of employees within a labor market. In 1980, only 11 of the 52 areas had nonagricultural employment of a million or more. Yet, four of them were among the eight areas with salaries 6 percent or more above the national average. All of the areas with salaries 10 percent or more below the national average had employment of less than a half million. A summary of this relationship was developed by calculating a Spearman rank correlation coefficient, comparing the ranking of areas by employment and salary levels.[3] The coefficient, .58, shows a positive relationship, but one that is far from a perfect correlation of 1. To illustrate that high employment does not necessarily mean higher salaries, Davenport had less than a quarter million workers in 1980, but had the highest average pay level of all the areas studied, while Boston and Minneapolis, with more than a million workers each, had average salaries 4 percent below the national average.

Salaries in Boston were also low compared to area living costs. Living costs, as measured by the BLS au-

Table 1 Office clerical pay relatives, 52 Standard Metropolitan Statistical Areas, 1961–80

[All metropolitan areas = 100]

Area	Pay relative		
	1961	1970	1980
Northeast			
Albany-Schenectady-Troy, N.Y.	98	99	101
Boston, Mass.	93	97	96
Buffalo, N.Y.	101	100	97
New York, N.Y.	102	105	100
Newark, N.J.	101	101	103
Paterson-Clifton-Passaic, N.J.	100	99	93
Philadelphia, Pa.-N.J.	95	97	98
Pittsburgh, Pa.	107	101	104
Portland, Maine	84	86	90
Providence-Warwick-Pawtucket, R.I.-Mass.	83	88	86
Trenton, N.J.	90	97	96
Worcester, Mass.	91	93	95
York, Pa.	92	91	91
South			
Atlanta, Ga.	95	99	102
Baltimore, Md.	94	97	105
Chattanooga, Tenn.-Ga.	87	86	86
Dallas-Fort Worth, Tex.	93	94	98
Greenville-Spartanburg, S.C.	80	85	85
Houston, Tex.	100	100	106
Jackson, Miss.	83	85	87
Jacksonville, Fla.	87	90	90
Louisville, Ky.-Ind.	94	94	98
Memphis, Tenn.-Ark.-Miss.	85	88	94
Miami, Fla.	90	93	97
New Orleans, La.	89	93	93
Norfolk-Virginia Beach-Portsmouth, Va.-N.C.	93	88	83
Oklahoma City, Okla.	88	90	94
Richmond, Va.	94	91	89
San Antonio, Tex.	82	83	84
Washington, D.C.-Md.-Va.	99	104	102
North Central			
Chicago, Ill.	107	105	104
Cincinnati, Ohio-Ky.-Ind.	98	98	96
Cleveland, Ohio	107	101	101
Columbus, Ohio	98	95	93
Davenport-Rock Island-Moline, Iowa-Ill.	103	105	127
Dayton, Ohio	106	103	93
Detroit, Mich.	115	116	122
Indianapolis, Ind.	100	98	97
Kansas City, Mo.-Kans.	98	96	99
Milwaukee, Wis.	100	99	99
Minneapolis-St. Paul, Minn.-Wis.	94	93	96
Omaha, Nebr.-Iowa	96	91	94
St. Louis, Mo.-Ill.	99	98	98
South Bend, Ind.	99	92	96
Toledo, Ohio-Mich.	106	106	108
Wichita, Kans.	102	101	106
West			
Denver-Boulder, Colo.	97	97	100
Los Angeles-Long Beach, Calif.	109	110	111
Portland, Oreg.-Wash.	100	98	104
Salt Lake City-Ogden, Utah	91	91	95
San Francisco-Oakland, Calif.	109	109	114
Seattle-Everett, Wash.	104	105	111

tumn 1980 lower budget for a 4-person family,[4] are available for 22 of the areas studied. In 13 of the areas, living cost relatives (expressed as a percent of the national average for all metropolitan areas) were within 3 percentage points of the area pay relatives. Seven of the nine areas with differences greater than 3 points—Pittsburgh, Atlanta, Baltimore, Dallas, Houston, Detroit, and Los Angeles—had pay relatives that exceeded their living cost relatives; only Boston and Washington showed substantial pay disadvantages. A Spearman rank correlation coefficient of .27 confirms the lack of significant relation in the ranking of relative salary levels and local living costs in the 22 areas.[5]

Long-term trends, 1961–80

The 1980 pattern of office clerical pay relatives among areas resembled the 1961 pattern.[6] For example, in both years, Southern areas tended to be lower paying while Western areas generally were higher paying. Nevertheless, in each of the 52 areas, the pay relative changed over the 1961–80 period. Most often, the change was small, but some areas did have substantial changes. Among the larger differences, Dayton's pay relative of 106 in 1961 tied with Toledo's for seventh place; by 1980, however, Dayton's relative had decreased to 93, among the bottom third of all pay relatives. At the same time, Davenport's office pay relative rose from 103 to 122, moving from ninth to first place.

Changes in pay relatives varied by region. The pay position of all Western areas and 14 of 17 Southern areas improved by at least 1 percentage point from 1961 to 1980. By comparison, only 7 of 13 Northeastern and 6 of 16 North Central areas experienced such gains. Similarly, gains of at least 3 percentage points were proportionately more frequent in the West and South. The following tabulation shows gains and losses in pay relatives during the 1961–80 period, by area:

Percentage point change	*Northeast*	*South*	*North Central*	*West*
Gains:				
1 or 2	2	1	3	1
3 or 4	4	5	1	3
5 or 6	1	4	—	1
7 or 8	—	2	1	1
9 or more . . .	—	2	1	—
Losses:				
9 or more . . .	—	1	1	—
7 or 8	1	—	—	—
5 or 6	—	1	1	—
3 or 4	3	—	4	—
1 or 2	2	1	4	—

Major changes in area pay relatives can generally be traced to local developments. For example, changes in an area's industrial composition may have a marked impact on its salary levels. To illustrate, the decline of Dayton's office clerical pay relative (from 105 in 1973 to 93 in 1980) paralleled a decline in its manufacturing employment, especially in the rubber goods, household appliance, and office machinery sectors. These declines were offset to some extent by an expansion of service employment; however, the expanding service industries tended to be lower paying. In contrast, Houston's office clerical pay relative rose from 100 in 1970 to 106 in 1980. This gain can be attributed to general economic expansion, particularly in the energy field and as a site for corporate headquarters. Nonagricultural employment in Houston nearly doubled over the period.

The increase in Davenport's office clerical pay relative (from 103 in 1961 to 127 in 1980) can be traced, in part, to the combined effects of industrial composition, unionization, and inflation. A major component of Davenport's economy is farm equipment manufacturing, traditionally one of the higher paying industry groups. Most of Davenport's nonsupervisory plant and office workers in this industry are unionized; since the early 1970's, their contracts have included an uncapped cost-of-living adjustment provision. During the 1970's, the inflation rate was relatively high and, hence, these workers received relatively large wage gains through cost-of-living adjustment provisions. Although not all of Davenport's clerical work force obtained cost-of-living increases, the gains were sufficiently widespread to influence the area-wide data.

Short-term trends

Concentration on changes in area pay relatives over the 1961–80 period overlooks the contrasting patterns of change found in the 1960's and 1970's. In the 1960's, wages in the relatively low-wage Southern areas slowly approached the national average, while movement in other areas was mixed. In the 1970's, the Southern wage advances continued. In addition, pay levels in Davenport, Detroit, and most Western areas rose much faster than the average for all metropolitan areas combined. The average percent difference in pay relatives among the 52 areas narrowed from 10.0 percent in 1961 to 8.1 percent by 1969; then the pattern reversed, and the difference expanded to 10.4 percent by 1980.[7] The following tabulation shows the average percent difference among area pay relatives, from 1961 to 1980:

1961	10.0	1971	9.0
1962	9.9	1972	9.6
1963	9.3	1973	9.3
1964	9.0	1974	9.3
1965	9.0	1975	9.4
1966	8.6	1976	9.4
1967	8.8	1977	9.6
1968	8.4	1978	9.7
1969	8.1	1979	9.8
1970	8.7	1980	10.4

Table 2. Distribution of year-to-year percentage point changes in office clerical pay relatives, 52 Standard Metropolitan Statistical Areas, by population size and region, 1961–80

Size of change	All areas	By population			By region			
		250,000 to 499,999	500,000 to 999,999	1,000,000 or more	Northeast	South	North Central	West
Total observations	988	190	247	551	247	323	304	114
1961-80:								
No change	390	61	94	235	101	130	115	44
1 point	433	88	105	240	113	143	131	46
2 points	120	28	33	59	24	35	43	18
3 points	26	7	7	12	7	10	5	4
4 points or more	19	6	8	5	2	5	10	2
Average annual percentage point change	.9	1.0	.9	.8	.8	.8	.9	.9
1961-70:								
No change	204	32	50	122	48	70	60	26
1 point	208	45	51	112	61	62	67	18
2 points	46	12	10	24	8	14	14	10
3 points	9	1	5	3	—	6	3	—
4 points or more	1	—	1	—	—	1	—	—
Average annual percentage point change	.7	.8	.8	.7	.7	.7	.7	.7
1970-80:								
No change	186	29	44	113	53	60	55	18
1 point	225	43	54	128	52	81	64	28
2 points	74	16	23	35	16	21	29	8
3 points	17	6	2	9	8	4	2	4
4 points or more	18	6	7	5	1	4	10	2
Average annual percentage point change	1.0	1.2	1.1	.9	.9	.9	1.1	1.1

NOTE: Changes are computed from pay relatives rounded to the nearest percent. Signs of changes are ignored.

The contrasting behavior of geographic wage differentials in the 1960's and 1970's is related to the markedly different economic conditions in those decades. The 1960's were essentially a period of economic growth. The uninterrupted economic expansion from February 1961 to December 1969, was the longest in the Nation's history. The unemployment rate—an indicator of slack in the labor market—turned downward, from 6.7 percent in 1961 to 3.5 percent in 1969. However, inflationary pressures did not surface until the latter half of the decade: annual increases in the Consumer Price Index were below 2 percent through 1965, when they began to rise, reaching 4.7 percent in 1968 and 6.1 percent in 1969. Amendments to the Fair Labor Standards Act in 1961 and 1966 raised the Federal minimum wage from $1 to $1.60 an hour; these adjustments had their greatest impact in relatively low-paying industries, and they tended to reduce wage dispersion within and among labor markets.

On the other hand, the decade of the 1970's was characterized by growing economic instability and actual or suppressed inflation. Economic recessions began in December 1969, November 1973, and January 1980. The unemployment rate rose to 8.5 percent in 1975, dropped to 5.8 percent in 1979, and then rose again to 7.1 percent in 1980. The inflation rate varied substantially: annual increases in the CPI ranged from 3.4 percent in 1971 and 1972—a period of wage and price controls—to 12.2 percent in 1974, and 13.3 percent in 1979. As in the prior decade, amendments to the Fair Labor Standards Act raised the Federal minimum wage —to $3.10 an hour in January 1980.

Year-to-year changes. For each area studied, the total change over the 1961–80 period typically reflects the cumulation of relatively small year-to-year changes. About 40 percent of the 988 annual comparisons possible over the 19 years studied showed no year-to-year change in area pay relatives. (See table 2.) A slightly larger proportion had changes of 1 percentage point. Less than 2 percent had changes of 4 percentage points or more. The average year-to-year change in pay relatives for all 52 areas was .9 percentage point.

Significantly, the tendency for small average annual changes in pay relatives appeared in each of the population size groups examined separately and in each region. Not surprisingly, the greatest stability of pay relatives was in areas with 1 million inhabitants or more—the areas which tend to have the more varied labor markets.

Annual changes in area pay relatives were small in each decade, but both the size of the average change and the frequency of relatively large change were distinctly greater in the 1970's. This finding is consistent with the tendency, already noted, for a widening of wage differences among areas in the 1970's, after a period of contraction during the 1960's.

THE WIDELY DIFFERING salary levels examined here and their behavior between 1961 and 1980 emphasize the difficulty of generalizing about the structure and trends in geographic wage differentials. Area pay rates respond to many forces that apply unequally across areas and over time. The findings of this study suggest areas of future investigation. For example, the year-to-year stability in pay relationships among areas raises the possibility of using a national survey—over short time periods—to update local pay data, thereby eliminating the need for frequent pay studies in individual localities. In addition, it would be interesting to determine if the patterns for manual jobs parallel those for white-collar jobs. Also, a study could focus on average earnings of specific occupations, rather than on average pay levels for broad employment groups within areas. □

FOOTNOTES

[1] This study is based on salary data from the Bureau of Labor Statistics' area wage survey program. All 52 areas surveyed annually from 1961 through 1980 are included in the analysis. (Currently, about 70 areas are surveyed.) The program provides pay estimates for office clerical; professional and technical; maintenance, toolroom, and powerplant; and material movement and custodial occupations. However, only office clerical workers are included in this analysis. The surveys of Standard Metropolitan Statistical Areas include establishments employing 50 workers or more in manufacturing; transportation, communication, and other public utilities; wholesale trade; retail trade; finance, insurance, and real estate; and selected services. In the 13 largest areas, the minimum is 100 workers in manufacturing; transportation, communication, and other public utilities; and retail trade.

[2] Pay relatives are computed annually for the metropolitan areas currently included in the area wage survey program. They are produced for four occupational groups—office clerical, electronic data processing, skilled maintenance, and unskilled plant workers. For a description of the method, as well as data for 1980, see *Wage Differences Among Metropolitan Areas, 1980*, BLS Summary 81–15, September 1981. A companion report, *Wage Differences Among Selected Areas, 1980*, BLS Summary 81–16, October 1981, provides wage comparisons for three occupational groups among 102 areas surveyed under contract to the Employment Standards Administration for use in administering the Service Contract Act.

[3] The Spearman coefficient measures the degree of association between two variables based on the ranks (or order) of the observations, rather than their actual values. A coefficient of +1 indicates complete agreement in the order of the ranks while −1 indicates completely opposite order of the ranks. A coefficient of 0 indicates the absence of any association between the variables.

[4] The lower budget was used in the comparison, because it most closely approximates expenditure levels consistent with the earnings of an office clerical worker. If the intermediate budget had been used, there would have been considerably more variation between relative wages and living costs, generally with areas in the West doing better and areas in the Northeast not doing as well. In some cases, the geographic definitions used in the budget studies did not completely correspond to those used in the salary level studies. These differences did not appreciably affect the comparison and, therefore, were ignored in the analysis. These living cost measurements reflect different consumption patterns among areas. For example, in the South a higher proportion of the meat consumed is pork than in Northern areas. The Bureau has conducted research on measuring price variations among areas assuming standard consumption patterns in all areas. The standardized consumption patterns, however, had little effect on interarea differences. See Mark K. Sherwood, "Family budgets and geographic differences in price levels," *Monthly Labor Review*, April 1975, pp. 8–15.

[5] An earlier BLS study found a relationship between area wage levels and living costs only after pay data were adjusted for differences in industry mix. See John E. Buckley, "Do area wages reflect area living costs?" *Monthly Labor Review*, November 1979, pp. 24–29.

[6] The Spearman coefficient comparing 1961 and 1980 rankings of the 52 areas is .79.

[7] Average pay differences were computed by subtracting an area's pay relative from each higher pay relative; dividing by the lower relative; totaling these differences (expressed in percent), and dividing by the number of comparisons made. For a further discussion of this technique, see Mark S. Sieling, "Interpreting pay structures through matrix application," *Monthly Labor Review*, November 1979, pp. 41–45.

How accurate were projections of the 1980 labor force?

All four Bureau of Labor Statistics projections,
the first in 1965 and the last in 1976,
were lower than the actual 1980 labor force;
most of the discrepancy can be attributed to the
underestimation of the participation rates of women

HOWARD N FULLERTON

The final step in the projection process is evaluation. The Bureau of Labor Statistics has always assessed each of its labor force projections, but only the evaluation of the 1975 estimates has been published. The 1970 projections were evaluated by Marc Rosenblum of the City University of New York.[1] Both evaluations concluded that the BLS had underestimated the number of persons in the labor force, with too many men and too few women. Rosenblum also concluded that the BLS estimate of the 1975 labor force would be too low, based on a comparison with projections by Alfred Tella and Thomas F. Dernberg and others.[2] Bureau of Labor Statistics economist Paul Ryscavage confirmed the underestimation of the BLS projections for the 1975 labor force, finding that an earlier projection, made when the program was still in the Bureau of the Census, was more accurate. He also suggested that the projections for 1980 and 1985 would be too low, primarily because of underestimation of female labor force growth. All four of the BLS projections of the 1980 labor force demonstrated the same pattern of lower than actual growth; generally the male labor force was too high and the female labor force was always too low.[3]

Trend, projected, and actual rates

The Bureau of Labor Statistics published four projections of the 1980 labor force.[4] They were general purpose projections prepared using demographic techniques. In 1965, BLS projected a 1980 labor force (including the armed forces) of 100 million; in 1970, of 101 million; in 1973, of 102 million; and, finally, in 1976, of 104 million. (See table 1.) The actual 1980 labor force was 107 million (1970 census weights).

Each estimate of the 1980 labor force overprojected the male labor force and grossly underprojected the female labor force. For example, the 1970 projection had the men's labor force at 64 million; it totaled 62 million in 1980. At the same time, the 1970 projection placed the women's labor force at 37 million; it reached 45 million in 1980.

The most difficult group to project has been women age 25 to 34. In 1965, the 1980 labor force participation rate for these women was projected to be 40.3 percent. In 1970, the rate was estimated to be 46.5 percent; in 1973, 50.2 percent; and in 1976, 57.3 percent. The rate turned out to be 65.3 percent in 1980, or 25 percentage points higher than the 1965 projection.

The next most difficult group to project was women age 35 to 44. Projection errors ranged from 15.2 percent for the 1965 estimate to 7.2 percent for the 1976 estimate.

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The most difficult male labor force group to project was men 55 to 64. The participation rate projected in 1965 was 12.3 percent too high; however, the 1976 projection missed by only 1.1 percent. For men 25 to 34, errors ranged from 2.0 percent in the 1965 projection to −0.1 percent in the 1976 projection.

Generally, more accurate projections are made over a recent period. But, how would the projections have fared if they were adjusted for the length of the projection span? To find out, we compared historic, projected, and actual growth rates. Historic growth rates use the same number of years back as the projection is forward. For example, the 1965 projection covered 16 years (from 1964 to 1980), making 1948 the reference year for the historic growth rate. The following tabulation shows the historic and the projected and actual growth rates of the 1980 labor force:

Historic reference year	*Year projection was published*	*Growth rate*		
		Historic	*Projected*	*Actual*
1948	1965	1.25	1.73	2.14
1960	1970	1.43	1.84	2.38
1966	1973	2.00	1.68	2.28
1970	1976	1.97	1.81	2.39

Both the historic and the actual labor force growth rates increased between projections, but the projected growth changed only slightly. In effect, the improvement in the projections of the 1980 labor force was due to the application of the same growth rate to a labor force that was actually growing faster than anticipated. A simple extrapolation made on the basis of the historic growth rate would have increased the accuracy of the 1973 and 1976 projections, but not the 1965 and 1970 projections.[5]

There was a steady increase in the discrepancy between actual and projected labor force growth. The successive projected growth rates were less accurate as 1980 approached. The following tabulation presents the change between the historical growth rate and the projected growth rate (projected change), the change between the historical and actual growth rate (actual change), and the difference between the two, which is also the error in the projected growth rate (a plus sign indicates growth was projected to increase from the historical rate; minus indicates that growth was projected to decrease):

Year published	*Projected change*	*Actual change*	*Difference (error)*
1965	+0.48	+0.89	−0.41
1970	+ .41	.95	−.54
1973	−0.32	.28	−.60
1976	−0.16	.42	−.58

Participation rates of groups

How accurate were the projections for individual age-sex groups? Among individual groups, some differences between projected and actual rates leap out; for example those for women age 25 to 34 for all four projections. However, the median of all the differences between the actual and projected rates was zero—the median for men was 1.2 percentage points and for women, −6.0. This was expected because the rates for men have been dropping while those for women have been rising rapidly.

The range of differences between actual and projected participation rates for women was very large. Usual methods for detecting unusually large values, or outliers, detected none. Combining the differences for male

Table 1. The 1980 labor force and participation rates, actual and as projected in 1965, 1970, 1973, and 1976

Age	Labor force (in thousands) as projected in —				Actual 1980[2]	Participation rates as projected in —				Actual 1980[2]	Difference			
	1965	1970	1973[1]	1976[1]		1965	1970	1973[1]	1976[1]		1965	1970	1973[1]	1976[1]
Total	99,942	100,727	101,809	103,759	106,821	60.4	60.5	60.8	61.6	63.3	−2.9	−2.8	−2.5	−1.7
Men, total	64,061	63,612	62,590	61,988	62,088	80.3	79.2	78.0	76.8	76.8	3.5	2.4	1.2	0.0
16 to 19	4,824	4,895	4,668	5,239	5,191	56.7	56.7	56.0	61.8	61.2	−4.5	−4.5	−5.2	0.6
20 to 24	9,084	8,795	8,852	8,852	9,022	87.2	83.0	83.0	84.1	85.7	1.5	−2.7	−2.7	−1.6
25 to 34	17,590	17,815	17,523	16,925	16,943	96.2	96.0	94.6	94.1	94.2	2.0	1.8	0.4	−0.1
35 to 44	12,084	12,086	11,851	11,878	11,901	96.7	96.1	95.1	94.6	94.6	2.1	1.5	0.5	0.0
45 to 54	10,219	10,082	9,908	9,829	9,989	95.0	94.0	91.6	90.0	90.3	4.7	3.7	1.3	−0.3
55 to 64	8,164	7,849	7,730	7,275	7,165	83.7	80.5	79.1	72.5	71.4	12.3	9.1	7.7	1.1
65 and over	2,096	2,090	2,058	1,890	1,877	21.8	22.0	21.2	18.7	18.3	3.5	3.7	2.9	0.4
Women, total	35,881	37,115	39,219	41,771	44,733	41.9	43.0	45.0	47.7	50.9	−9.0	−7.9	−5.9	−3.2
16 to 19	3,286	3,448	3,866	4,246	4,358	46.6	41.0	45.5	44.6	53.0	−6.4	−12.0	−7.5	−8.4
20 to 24	5,380	5,991	6,582	7,116	7,170	52.6	57.7	63.4	68.4	69.0	−16.4	−11.3	−5.6	−0.6
25 to 34	7,347	8,427	9,250	10,417	11,990	40.3	46.5	50.2	57.3	65.3	−25.0	−18.8	−15.1	−8.0
35 to 44	6,386	6,709	6,688	7,638	8,605	50.0	53.3	53.2	58.0	65.2	−15.2	−11.9	−12.0	−7.2
45 to 54	6,805	6,259	6,537	6,608	6,873	59.5	55.2	56.2	56.6	59.6	−0.1	−4.4	−3.4	−3.0
55 to 64	5,337	5,103	5,057	4,628	4,591	47.3	45.0	44.7	45.6	41.1	6.2	3.9	3.6	4.5
65 and over	1,340	1,178	1,239	1,737	1,144	9.9	8.5	8.6	11.7	7.6	2.3	0.9	1.0	4.1

[1] Middle scenarios.

[2] The 1980 labor force data are based on 1970 census weights.

Note: Differences with negative values were projected less than actual; those with a positive value were projected higher than actual.

and female rates does detect some outliers. The rates projected in 1965 and 1970 for women age 25 to 34 were underprojected by 25.0 and 18.8 percent. This group also had the greatest change in labor force participation over the period. One questions if a projected rise in participation of more than 25 percentage points would have been credible in 1965. The changes affecting labor force participation of women—fewer births, fewer marriages, unprecedented inflation, more education—affected women in the 25 to 44 age group the most.

Labor force composition. The projected labor force composition (age-sex structure) is of concern to those using the projections for equal opportunity purposes or for some types of market research. Table 2 shows the projected and actual distribution of the labor force. The actual and projected labor force participation rates for all four projections are illustrated in chart 1. If the projections were perfect, they would be plotted on a straight line with a slope of one (an angle of 45 degrees) going through the origin, which is the line of perfect projection.[6] When the four projections are combined, our hypothesis that the actual and projected fall on the line of perfect projection, or that the composition was correctly projected is rejected. The implication is that the composition of the labor force was poorly projected.

The bars on chart 1 show the means of the actual and projected labor force rates; if the bars were on the line of perfect fit, there would be no bias in the projection. The fit of projected against actual always goes through the point where the two means cross. If the slope of this line is different from the line of perfect fit, the composition has not been accurately projected. If the line is parallel to the line of perfect fit, then it is biased. On the other hand, if the projection is unbiased but the trend has not been accurately projected, the projection line will cross the line of perfect fit where the means cross on the line of perfect forecast.

Assumptions and realities

The Bureau of Labor Statistics' labor force projections have been based on past trends of labor force activity extended forward to particular "target" years. The extrapolated rates (modified when necessary) are then applied to population levels projected by the Bureau of the Census, producing projected labor force levels.

This general approach is essentially supply oriented. Because of this orientation, the characteristics which received the most attention from the analysts were the impact of marital status and the presence of children on the labor force activity of women and the impact of school enrollment on the participation of younger workers. For example, the analysts who prepared the 1965 and 1970 projections considered work and childrearing uncompatible roles. The analysts who prepared the 1973 projections felt that the rapid changes in participation rates would not continue; the analyst who prepared the 1976 projection allowed the rapid changes in female participation rates to continue.[7]

Table 2. Distribution of the 1980 labor force, actual and as projected in 1965, 1970, 1973, and 1976

Age	Projected in				Actual 1980[2]	Difference			
	1965	1970	1973[1]	1976[1]		1965	1970	1973	1976
Men, total	64.1	63.2	61.5	59.7	58.1	6.0	5.0	3.4	1.6
16 to 19	4.8	4.9	4.6	5.0	4.9	−0.1	0.0	−0.3	0.2
20 to 24	9.1	8.7	8.7	8.5	8.4	0.6	0.3	0.2	0.1
25 to 34	17.6	17.7	17.2	16.3	15.9	1.7	1.8	1.4	0.5
35 to 44	12.1	12.0	11.6	11.4	11.1	0.9	0.8	0.5	0.3
45 to 54	10.2	10.0	9.7	9.6	9.4	0.9	0.7	0.4	0.2
55 to 64	8.2	7.8	7.6	7.0	6.7	1.5	1.1	0.9	0.2
65 and over	2.1	2.1	2.0	1.8	1.8	0.3	0.3	0.2	0.0
Women, total	35.9	36.8	38.5	40.3	41.9	−6.0	−5.0	−3.4	−1.6
16 to 19	3.3	3.4	3.6	4.1	4.1	−0.8	−0.7	−0.5	0.0
20 to 24	5.4	5.9	6.5	6.9	6.7	−1.3	−0.8	−0.2	0.1
25 to 34	7.4	8.4	9.1	10.0	11.1	−3.8	−2.8	−2.0	−1.1
35 to 44	6.4	6.7	6.7	7.4	8.1	−1.7	−1.4	−1.3	−0.7
45 to 54	6.8	6.2	6.4	6.4	6.5	0.3	−0.3	−0.1	−0.2
55 to 64	5.3	5.1	5.0	4.5	4.3	1.0	0.8	0.7	0.2
65 and over	1.3	1.2	1.2	1.7	1.1	0.3	0.1	0.1	0.6

[1] Middle scenarios.
[2] The 1980 labor force data are based on 1970 census weights.

It will be helpful to review the changes in marital status, presence of children, and educational attainment that have occurred since 1965. While such a discussion will not explain the projection errors, it will indicate whether the underlying supply assumptions of the four BLS projections were met.[8]

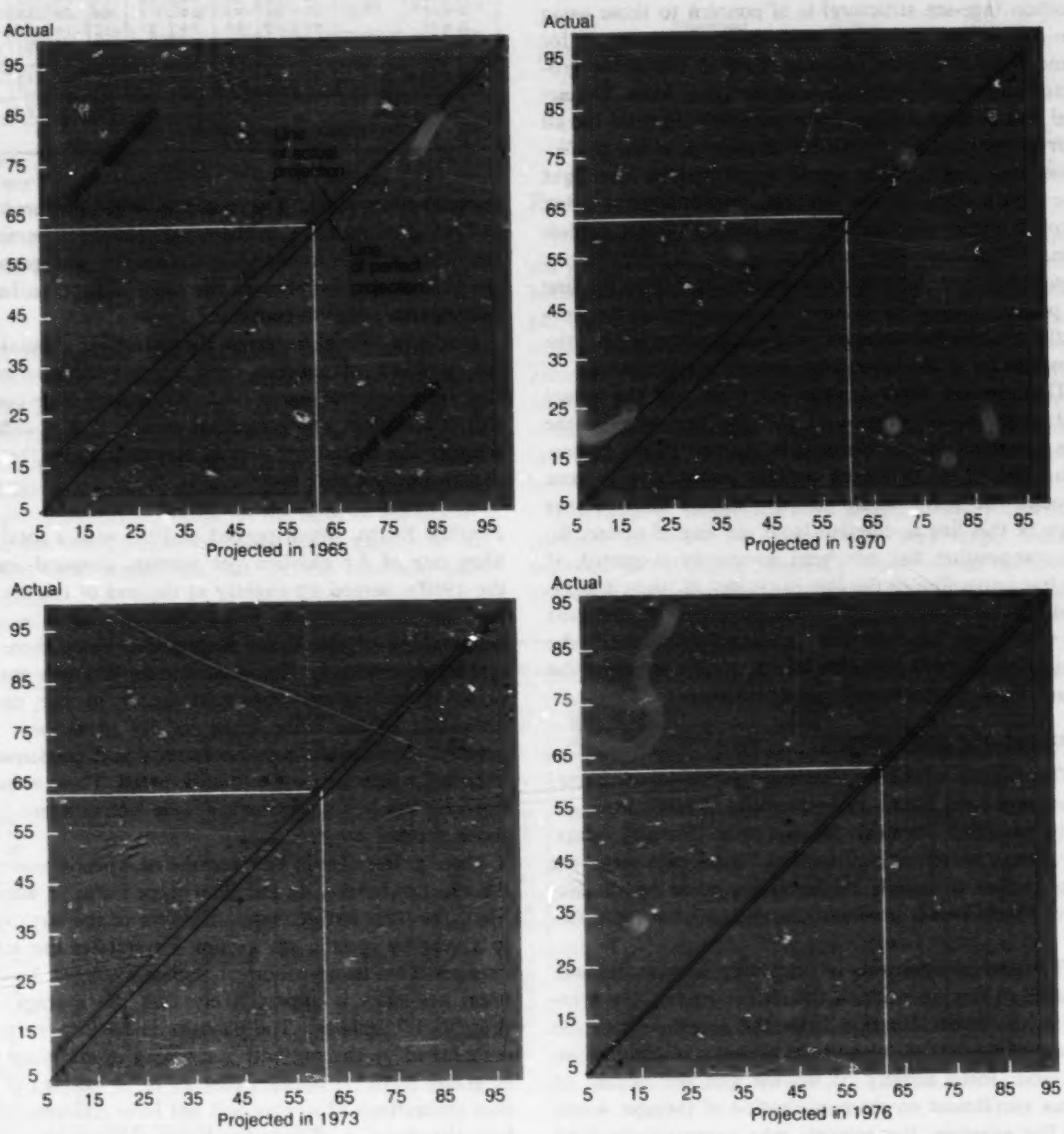
Fertility. Births, which peaked in 1958 with a total fertility rate of 3.8 children per woman, dropped during the 1960's, turned up slightly at the end of the decade, and then dropped until 1976, when fertility rates were below those of the Great Depression. Since then, the rate has risen slowly. The decline in fertility was not anticipated and is an important factor in the underprojection of the labor force activity of women. The negative relationship between fertility and participation lessened, which also was not anticipated. These assumptions by the BLS projectionists were not different from those of other projectionists.

Three points should be remembered when considering the effect of fertility on the labor force status of women. First, the total fertility rate—the sum of the birth rates in a year by specific age groups—overstates the actual changes. That is, no cohort of women averaged 3.8 children, nor does it appear likely that the average will drop to 1.7 children. The changes in fertility were accomplished by shifting both the timing of marrying and of giving birth.[9] It appears that 20 to 30 percent of recent generations of women will not have children.[10] Second, the direction of causality between births and labor force activity is ambiguous. Both are affected by similar factors, such as education, inflation, and the changing social expectation. Increased labor force participation may induce tastes that are incompatible with motherhood. Third, there is a direct effect on labor force participation in that childbirth generally results in the mother withdrawing from the labor force, even if for a short time.

Marital status. The changing marital status of the population also affected the growth of the labor force. Not as many married women lived in traditional (spouse present) households.

There was a small, 3-percent annual change in the proportion of married women over the 15-year-period, but if applied to the 87 million women in 1980 who

Chart 1. Labor force participation rates for 1980, actual and projected in 1965, 1970, 1973, and 1976



were 16 or older, it amounts to almost 3 million fewer married women. This shift in the proportion of married women resulted in a greater number of women in the labor force, and was reinforced by the increase in the participation rates of married women. The drop in the proportion of married women reflects the "marriage squeeze," the increased divorce rate, and the postponement of marriage. (Marriage squeeze refers to the joint effect of increasing births and the marriage of women to men about 2 years older. About 20 years after the period of increasing births, there would be fewer men than women of marriageable age.) These factors also lowered the birth rate and the proportion of women with young children.

Parental status. As the proportion of women with young children dropped (as the lower fertility rates implied), their share of the labor force rose. The 1965 projection did not assume growth in the labor force participation of mothers of young children and also did not expect births to drop to such a low level. The 1970 projection also did not explicitly include these assumptions. The 1973 and the 1976 projections attempted to project the number of women with young children by using the current population projections of births. However, both projections overestimated the proportion of mothers of young children and, thus, underprojected the growth of the labor force. The implicit assumption in each projection of the size of the negative relationship between the presence of young children and the labor force activity of their mothers was another factor in the underprojection of the labor force activity of women with young children. In addition, it is more difficult to project marital and parental status than labor force status.

Education. American workers steadily increased their years of formal schooling between 1965 and 1980. This behavior was explicitly modeled in the 1965 and 1970 projections and implicitly assumed in the 1973 and 1976 projections. As education increases, the labor force participation of women also increases.[11]

Inflation. Price changes affect many aspects of economic and social life and, thus, would be expected to have some effect upon labor force activity. Certainly, the projectionists made no explicit assumptions about the rate of price increase, but its effect on participation has been explored by many.[12] Valerie K. Oppenheimer suggested that wives participate more actively in the labor force to maintain family spending because real earnings of the husband remain constant while the family life-cycle requires increasing real income. James E. Duggan found that increased participation of wives is partly caused by the uncertainty engendered by rapid rates of price change. Thus, the rapid price changes of recent years probably contributed to the larger than anticipated labor force growth.

To summarize the assumed versus actual experiences affecting the 1980 labor force, fertility was lower than anticipated, resulting in higher female participation than projected; the lesser rate of withdrawal by women to tend young children also meant higher participation. The proportion of women living with their spouses dropped, which would tend to make female participation rise. We cannot evaluate how well this was anticipated in 1965 because of data limitations; since 1970, it has not been formally a part of the "model." The number of years of schooling completed rose and, for women, so did participation.[13] Finally, the unprecedented rise in inflation was not anticipated and probably resulted in more wives actively seeking work.

Comparison with other projections

In 1977, Data Resources, Inc., projected that the civilian labor force would increase to 102,500,000 in 1980, or 1.95 percent per year.[14] By comparison, in 1976, BLS projected a civilian labor force of 101,600,000 in 1980, a growth rate of 1.86 percent per year. The 1980 labor force was 104,700,000, a 2.46-percent growth rate.

Data Resources projection had a somewhat smaller error (−.51 percent) than the BLS projection (−.60 percent), and, of course, was made a year later. Table 3 compares the projected civilian labor force rates of Data Resources and BLS.

Overall, BLS did slightly better at projecting 1980 participation rates than did Data Resources; the mean of the absolute values of the deviations is 2.0 for BLS and 2.5 for Data Resources. Both were good at projecting male rates, but Data Resources was superior at projecting female rates. Interestingly, Data Resources was

Table 3. Comparison of Data Resources and BLS projections of 1980 civilian labor force participation rates

[In percent]

Age	Projection		Actual	Errors	
	Data Resources	BLS		Data Resources	BLS
Women:					
16 to 17	45.3	43.1	43.8	1.5	−0.7
18 to 19	62.5	60.0	62.1	.4	−2.1
20 to 24	69.7	68.4	69.0	−.7	−.6
25 to 34	62.4	57.4	65.4	−3.0	−8.0
35 to 44	60.1	58.3	65.5	−5.4	−7.2
45 to 54	55.7	57.1	59.9	−4.2	−2.8
Men:					
16 to 17	50.3	50.6	50.1	.2	.5
18 to 19	66.5	71.5	71.5	−5.0	0
20 to 24	81.6	84.2	86.0	−4.4	−1.8
25 to 34	93.1	95.2	95.3	−2.2	−.1
35 to 44	94.0	95.5	95.5	−1.5	0
45 to 54	89.9	91.2	91.2	−1.3	0

NOTE: These rates do not reflect any adjustment for the 1980 census.

much better at projecting rates for women age 25 to 34 (estimating rates for this age group has always been difficult for BLS). Also, Data Resources' worst projection, that for women age 35 to 44 years, was still better than any of the BLS projection rates for women. Among women, only for those age 16 and 17, and 45 to 54, did BLS have lower projection errors than Data Resources. Among men, the Data Resources projection was better than the BLS projection only for those 16 to 17 years. The feat of projecting some of the rates for men exactly should be discounted, indeed the Data Resources error of 0.2 percentage point should be considered equivalent to an exact projection. In general, the superior projection made by one projecting group for a sex was offset by the errors made in projecting rates for the other group.

Guidelines for users

The labor force projections are prepared for a variety of users. Within the Bureau of Labor Statistics, they are an input into the employment, output, and occupational projections; they are also used in employment and training policy development, in market research, in equal employment opportunity work, and by many States as inputs into State labor force and population projections.[15] It is not clear what level of accuracy is satisfactory—we presented several measures of errors; the user of the projections should select the measure most relevant to the specific application.

There are occasions when the levels or accuracy described here are not sufficient (for example, when the range of uncertainty exceeds the usual levels of unemployment).

If the projections are to be used in simulations concerning unemployment, they should be used with great caution. Nathan Keyfitz commented that the errors in population projections over a 20-year span are sufficiently wide as to limit their usefulness; labor force projections are even more constrained.[16]

Most users tolerate a lower accuracy in long-run than in short-run projections because of their different purposes, and because decisions based on long-run projections can be revised or shifted over time. For example, the decision to build or to not build a sewage treatment facility does not depend on the accuracy of the population projected for a locality, but rather on the likelihood of the population exceeding a specific number. If the facility is built and the population does exceed the threshold number, then the projection was useful even if it was not accurate.[17]

If the future labor force could be determined with no error, it would not be necessary to revise projections. Four comments should be helpful. First, at the time each of the four projections was made the assumptions about the future of the labor force were reasonable. Second, none of the projections has any turning points; it is quite likely that some of the labor force series will indeed change direction. Third, as Henri Theil points out, projections must at some place in their structure hold change constant, whether it is the level of net migration or the rate of change; this has the effect of underestimating the amount of change.[18] Further Jacob Mincer and Victor Zarnowitz say that it is harder to project a rising level of activity.[19] These tendencies results in overestimate of the level of men's labor force activity—and underestimate of the activity of women. The relative sizes of the two components of the labor force is more poorly projected. ☐

FOOTNOTES

[1] Marc Rosenblum, "On the accuracy of labor force projections," *Monthly Labor Review*, October 1972, p. 22–29.

[2] Alfred Tella, "Labor Force Sensitivity to Employment by Age, Sex," *Industrial Relations*, February 1965; and Thomas F. Dernberg, Kenneth Strand, and Judith Dukler, "A Parametric Approach to Labor Force Projection," *Industrial Relations*, October 1966.

[3] Labor force projections are used in preparing employment, output, and occupational projections. The Bureau's occupational projections for 1980 are evaluated by Max L. Carey and Kevin Kasunic, in "Evaluating the 1980 projection of occupational employment," *Monthly Labor Review*, this issue, pp. 22–30.

[4] See the following *Monthly Labor Review* articles: Sophia Cooper and Denis F. Johnston, "Labor Force Projections for 1970–80," February 1965, p. 129–39 (reprinted as Special Labor Force Report 49); Sophia Cooper Travis, "The U.S. labor force; projections to 1985," May 1970, pp. 3–12 (reprinted as Special Labor Force Report 119); Denis F. Johnston, "The U.S. labor force: projections to 1990," July 1973, pp. 3–13 (reprinted as Special Labor Force Report 156); and Howard N Fullerton and P.O. Flaim, "New labor force projections to 1990," December 1976, pp. 3–13 (reprinted as Special Labor Force Report 197).

[5] Michael A. Stoto, "The Accuracy of Population Projections" (Laxenburg, Austria, International Institute for Applied Systems Analysis, 1979). Stoto also found that over the first 10 years of a population projection, the naive extrapolation method was more accurate than other methods.

[6] For more information on this type of comparison, see Henri Theil, *Economic Forecasts and Policy* (Amsterdam, North-Holland Publishing Co., 1965), and *Applied Econometric Forecasting* (Chicago, Rand-McNally and Co., 1966).

[7] The 1965, 1973, and 1976 projections each looked at specific population groups (for example, mothers of young children), thus, it should be possible to partition the error in the labor force projection into that due to the size of a specific group and that due to the projection of labor force rate. However, the archives for the labor force projections are not available, and we can only look at the overall error for the major group.

[8] Only 1965 projections considered the effects of a drop in the unemployment rate (to 3 percent); it concluded that for every 3 jobs created 2 would be filled by the unemployed and one by new labor force entrants. Attempts to prove the effect symmetric were unsuccessful, so it is not possible to conclude what effect the higher unemployment rate would have had on the labor force.

[9] Arthur A. Campbell, "Beyond the Demographic Transition," *Demography*, 1974, pp. 549–61; and "Baby Boom to Birth Dearth and Beyond," *Annals*, American Academy of Political and Social Sciences, January 1978, pp. 40–60.

[10] David E. Bloom, "What's Happening to the Age at First Birth in the United States? A Study of Recent White and Nonwhite Cohorts," a paper presented at the 1981 meetings of the Population Association of America.

[11] Although increases in educational attainment of the population were considered in making labor force projections, the Bureau's two projections of the educational attainment of the labor force were made by forcing the overall labor force projections to the Census Bureau's educational attainment projection for the population.

[12] See, for example, Valerie K. Oppenheimer, "The Life-Cycle Squeeze: The Interaction of Men's Occupational and Family Life Cycles," *Demography*, 1974, pp. 227–45; James E. Duggan, "Inflation, uncertainty, and labor force participation," Bureau of Labor Statistics, 1979; and "The Labor Supply of Married Persons: Evidence From the Current Population Survey," Bureau of Labor Statistics, 1981.

[13] Reasons for the decrease in male participation rates are not explored in this article. For an analysis, see William V. Deutermann, Jr., "Another look at working-age men who are not in the labor force," *Monthly Labor Review*, June 1977, pp. 9–14.

[14] James Yrshus and Roger Brinner, "Labor force growth to 1990: The impact of changing social roles," *DRI Long Term Review*, Winter 1977, pp. 92–100.

[15] See Ronald E. Kutscher, "New economic projections through 1990—an overview," *Monthly Labor Review*, April 1979, pp. 9–17.

[16] Nathan Keyfitz, "The Limits of Population Forecasting," *Population and Developments Review*, December 1981, pp. 579–93.

[17] Nathan Keyfitz, *Applied Mathematical Demography* (New York, John Wiley and Sons, 1977).

[18] Henri Theil, *Applied Econometric Forecasting*.

[19] Jacob Mincer, and Victor Zarnowitz, "The Evaluation of Economic Forecasts," in Jacob Mincer, ed, *Economic Forecasts and Expectations; Analysis of Forecasting Behavior and Performance* (New York, National Bureau of Economic Research, Columbia University Press, 1969), pp. 3–46.

A note on communications

The *Monthly Labor Review* welcomes communications that supplement, challenge, or expand on research published in its pages. To be considered for publication, communications should be factual and analytical, not polemical in tone. Communications should be addressed to the Editor-in-Chief, *Monthly Labor Review*, Bureau of Labor Statistics, U.S. Department of Labor, Washington, D.C. 20212.

Evaluating the 1980 projections of occupational employment

Job projections prepared by BLS in 1970 proved slightly less accurate than estimates for 1965-75; classification changes again restricted comparability, permitting analysis of fewer than half of 160 occupations

MAX L. CAREY AND KEVIN KASUNIC

How reliable were the 1980 occupational employment projections? The Bureau of Labor Statistics' estimates were on target for professional and service occupations, the two fastest growing occupational groups between 1970 and 1980.[1] The projections were fairly accurate for farm, craft, clerical, and sales occupations. For the remaining three major occupational groups, BLS projections missed the mark by significant margins. BLS underestimated employment growth for managerial and administrative occupations and for nonfarm laborers, while overestimating employment in operative occupations.

Among individual occupations, the projections proved accurate for optometrists, physicians, veterinarians, elementary schoolteachers, police, and welders. Opportunities for lawyers and psychologists grew faster than anticipated. In a seeming anomaly of the impending "cashless society," cashiers and bank tellers could count on many more jobs than BLS projected, while the number of credit managers was less than anticipated.

As expected, projections for specific occupations were less accurate than for the major occupational groups. Despite some refinements, the 1980 projections were not quite as accurate as the 1975 estimates, which also spanned 10 years.[2]

In evaluating the 1980 projections, comparability again proved to be a major problem. Fewer than half of the detailed occupations studied in the base year could be evaluated, specifically, only 64 of 160 occupations.

Results by occupational group

Among the nine major occupational groups, projection errors were relatively large for nonfarm laborers, managers and administrators, and operatives. The number of nonfarm laborers employed in 1980 was underprojected by 17 percent, and the number of managers and administrators, by 13 percent. (See table 1.) By contrast, operative employment was overprojected by 11.8 percent. The average of the absolute percentage errors for all groups was 6.7 percent.

The direction of employment change was not correctly anticipated for nonfarm laborers and operatives. The number of nonfarm laborers was projected to be 3.7 million in 1980, or about 1 percent lower than the 1970 level. Instead of declining, employment in this group increased to almost 4.5 million. This projection was probably influenced by the trend of the 1960's, when employment remained at about the same level. Conversely, operative employment was projected to rise from 13.9 million in 1970 to 15.4 million in 1980, but declined to 13.8 million. The 1.6-million overestimate of operatives was the largest error in number for a major occupational group. Operative employment is concentrated in manufacturing industries, which are sensitive to economic fluctuations. After recovering from the re-

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cession of the mid-1970's, operative employment had grown steadily and might have reached the projected level if the economy had continued to improve. Employment was at 14.5 million in 1979. The direction of employment change was correctly anticipated for managers and administrators, but employment grew twice as rapidly as projected, resulting in a 1.4-million underestimate of the 10.9 million employed in 1980. The projection of managers was probably influenced by the employment trend in 1962–67, when employment only grew from 7.4 million to 7.5 million, with very little fluctuation during that period.

Projection errors in the remaining groups were comparatively small. Differences between projected and actual employment levels ranged from less than 1 percent for professional and technical workers and service workers to 6.7 percent for salesworkers. Moreover, the projected and actual amounts of change were very close in some occupations. The estimated increase in professional and technical workers was only 2.5 percent lower than the approximately 4.5-million increase that occurred, and the estimated growth in service workers was only 3.1 percent greater than the actual increase of 3.2 million. The projections correctly identified the professional and technical workers, service workers, and clerical workers as the three fastest growing groups.

Results by specific occupation

Differences between projected and actual employment in the 64 detailed occupations ranged from an underestimate of 47 percent for psychologists to an overestimate of 89 percent for locomotive engineers' helpers. (See table 2.) The absolute percentage errors for all 64 occupations averaged 22.4 percent. About one-half of the occupations had errors lower than the average. Absolute errors ranged from a 444,000-underestimate of cashier employment in the target year to a 181,000-overestimate of telephone operators.

Employment was overprojected in slightly more than one-half of the occupations; on average, by 25.8 percent. Among the occupations in which employment was overstated by more than 50 percent were photoengravers and lithographers, patternmakers, airplane mechanics, telephone operators, and credit managers. Employment was underprojected in almost one-half of the occupations. The average underestimate was 19.5 percent. Employment in several occupations was underprojected by more than 30 percent, including cooks, bartenders, bank tellers, lawyers, and roofers.

The occupational estimates are products of the projections of industry employment and of industry-occupational staffing patterns. Many of the largest errors resulted primarily from misestimates of industry-occupational staffing patterns. The decline in the ratio of telephone operators to total employment in the telephone industry, for example, was greater than anticipated, and consequently the demand for workers in this occupation was overprojected. Staffing pattern estimates also led to large errors in the projections for locomotive engineers' helpers, psychologists, credit managers, lawyers, and roofers. Misestimates of industry employment totals, rather than industry staffing patterns, were the primary causes of large errors for some occupations. The banking industry, for example, grew much more rapidly than expected, resulting in an underprojection of the demand for bank tellers. Projection errors for cooks, bartenders, and aircraft mechanics also were largely a result of poor projections for the industries in which these workers were concentrated.

Size makes a difference

Projection accuracy was related to size of employment. When weighted by employment in each occupation, the average absolute error drops from 22.4 percent to 14.1 percent, indicating that the largest occupations generally had the more accurate projections. Relatively accurate projections for the following three categories, each with more than 1 million workers in 1980, contributed substantially to the improved results: blue-collar supervisors; elementary schoolteachers; and stenogra-

Table 1. Comparison of projected employment and actual employment in major occupational groups, 1970–80

[Workers in thousands]

Occupational group	1970	1980		Percent change		Difference between projected and actual	
		Projected	Actual	Projected	Actual	Level	Percent
Total	78,627	95,085	97,270	20.9	23.7	−2,185	−2.2
Professional and technical workers	11,140	15,500	15,613	39.1	40.2	−113	−0.7
Managers and administrators	8,289	9,500	10,919	14.6	31.7	−1,419	−13.0
Salesworkers	4,854	5,760	6,172	18.7	27.2	−412	−6.7
Clerical workers	13,715	17,285	18,105	26.0	32.0	−820	−4.5
Craft and kindred workers	10,158	12,240	12,529	20.5	23.3	−289	−2.3
Operatives	13,909	15,440	13,814	11.0	−0.7	1,626	11.8
Nonfarm laborers	3,724	3,700	4,456	−0.6	19.7	−756	−17.0
Service workers	9,712	13,060	12,958	34.5	33.4	102	0.8
Farmworkers	3,126	2,600	2,704	−16.8	−13.5	−104	−3.9

NOTE: Individual items may not add to totals because of rounding. Percent differences are based on unrounded numbers.

phers, typists, and secretaries. Sampling errors for Current Population Survey estimates diminish relatively as employment size increases, so the long-run data for large occupations would be expected to provide more reliable trends to use in the projections:

Number of workers	*Number of occupations*	*Average absolute percent error*
Total	64	22.4
Less than 50,000	18	29.5
50,000 to 99,999	9	24.9
100,000 to 299,999	14	26.3
300,000 to 599,999	11	17.2
600,000 and more	12	10.1

The direction of employment change between 1970 and 1980 was correctly anticipated for 50 of the 64 detailed occupations. Again, results were better in the larger fields of employment. Less than one-sixth of the occupations with more than 50,000 workers in 1970 had projections that were in the wrong direction, compared with more than one-third of the smaller fields. Some of the differences, however, between projected increases and actual declines, or vice versa, were relatively small.

For each occupation in which the direction of employment change was correctly anticipated, the percentage of the actual change accounted for by the projection was computed. In about two-thirds of the occupations the projections underestimated the employment change. In the remaining occupations, the projections overestimated the change.

Employment grew in 46 of the occupations between 1970 and 1980 and declined in the remaining 18. Increases were estimated more accurately than decreases. Projections of growth averaged an absolute 16.1 percent off actual employment, while those of loss averaged 38.4 percent off. Employment in two-thirds of growing occupations was underestimated. All employment declines either were underestimated or not foreseen at all.

The direction of employment change was correctly anticipated for all but two of the growing occupations. The number of elementary schoolteachers increased by about 4 percent, instead of declining by 0.9 percent. Jewelers and watchmakers increased more than 37 percent, against a projected 0.9-percent decline.

Occupations with the most rapid growth had the largest projection errors. Projected 1980 levels for those with employment increases of more than 50 percent between 1970 and 1980 averaged 30.1 percent off actual 1980 levels. Projection errors averaged only 9.4 percent for occupations with slower growth. Target-year employment usually was underestimated in the fastest-growing occupations and overestimated in those with the slowest growth. Projections were lower than actual levels in the 15 fastest-growing occupations and higher than actual in 12 of the 15 with the slowest increases.

Decreases were not anticipated in 12 of the 18 occupations that declined in employment. The projections correctly identified weaver, knitter, compositor and typesetter, locomotive engineer's helper, railroad conductor, and brake and switch operator as occupations which would decline in employment, although the rate of decrease was generally underestimated.

Testing for accuracy

One way to judge the accuracy of an occupational employment projection is to determine whether the projection or the base-year employment is closer to the target-year employment. In 45 of the 64 occupations, the projections were closer to the target than base-year employment. In the remaining 19 occupations, the projections either were in the wrong direction or overstated the employment growth by wide margins. Another way to judge projections is to compare them with the results obtained from simple alternative methods. Extrapolations of employment data by simple linear regression would have been an inexpensive and easy way of projecting. Extrapolations based on this simple method were more accurate than the projections for 46 of the 64 occupations.[3] Several of the extrapolations, however, missed targets by wide margins, which resulted in a slightly lower weighted error for the projections. The weighted absolute average error was 15.1 percent for the extrapolations, compared to 14.1 percent for the projections. Unweighted errors were about the same for both methods.

The evaluation has focused on differences between projected and actual employment *levels*, rather than differences between actual and projected employment *changes*. Generally, occupations with accurately projected levels also were accurate in terms of the proportion of actual change that was estimated. Comparisons of levels, however, have a conservative bias in that projections for occupations which have relatively little employment change tend to get better marks than those which have the most change, as demonstrated in the following occupations. Employment of psychologists was projected to increase from 33,200 in 1970 to 56,000 in 1980, but actually rose to 106,000, which means that target-year employment was underestimated by 47.2 percent. In contrast, the number of cabinetmakers was projected to increase from 70,000 to 72,700, but rose to 85,000, resulting in an underestimate of 14.5 percent. In terms of the difference between projected and actual employment levels, the projection for cabinetmakers is by far the better of the two. The projection for psychologists, however, accounted for about 31 percent of the employment increase that occurred, while the one for cabinetmakers accounted for only 18 percent. Therefore, if the measure of accuracy is the proportion of actual change that was estimated, the projection for psychologists is better. Both kinds of accuracy are important. The accuracy of level is particularly important, however, because projected levels are used in calculating replacement needs resulting from retirements and deaths.

Rating the handbook ratings

In addition to publication in *Tomorrow's Manpower Needs*, many of the 1980 projections were used as a basis for qualitative descriptions in another BLS publication, the 1972–73 edition of the *Occupational Outlook Handbook*, designed to help young people make career plans. In most cases, the handbook description of employment outlook for an occupation includes a sentence about the expected change in employment through the 1970's. The adjectives used to describe expected changes in employment requirements generally corresponded to these ranges of percent change (increase or decrease): very rapid, 40 or more; rapid, 30 to 39.9; moderate, 15 to 29.9; slow, 5 to 14.9; little or no change, 0 to 4.9. The handbook contained occupational statements for 45 of the 64 occupations for which projections were evaluated, and the standard adjectives were used in describing the outlook in 34 of these statements. Statements on only two occupations, elementary schoolteachers and telephone operators, were incorrect about the direction of employment change. The handbook expected employment in this teaching field to decline slowly, but it showed little or no change. The number of telephone operators was expected to grow slowly instead of declining moderately. The outlook description for telephone operators was misleading, but the one for elementary teachers was not.

The adjectives were on target or only one category off target for about two-thirds of the remaining statements. Rapid growth in surveyor employment was projected, for example, instead of very rapid growth. Adjectives for about one-fourth of the statements were off by two categories, but in some cases it is difficult to determine whether this degree of inaccuracy was misleading. The difference between moderate growth and very rapid growth, for example, does not seem as significant as the difference between moderate growth and little or no change. Adjectives for the following occupations were three categories off the mark: jewelers and watchmakers, boilermakers, and cement and concrete finishers. The outlook descriptions for these occupations likely were misleading.

The framework

The 1980 projections of occupational requirements were developed within the framework of a 1970–80 matrix that described the relationship of employment in 160 occupations and 116 industries.

The long-term data used in developing the 1970 matrix and projected 1980 matrix were obtained from a variety of sources. The primary sources of data on occupational staffing patterns by industry were the 1950 and 1960 censuses. The primary source of total employment in each industry was the Bureau of Labor Statistics' Current Employment Survey (a payroll survey) for 1947 through 1969. The Current Population Survey (a household survey) was the chief source of total employment of occupational groups and most occupations after 1960. Data for some occupations, however, were obtained from independent sources, such as professional societies and regulatory agencies.

The primary data source for occupational employment by industry was the 1960 census, because information from the 1970 census was not available. However, the 1980 data used in the analysis were largely derived from the 1980 Current Population Survey (CPS), which used the 1970 census occupational classification system. Because the Census Bureau revised its 1960 system for classifying employment by occupation for use in the 1970 census, a large proportion of the 160 occupations examined in 1970 were not sufficiently comparable for evaluation.[4]

According to the Census Bureau, all nine occupational groups had 96 percent or better comparability between the two classification systems. Specifically, if the 1960 labor force data were retabulated, 95 percent or more of the employment reported in a particular major occupational group under the 1960 classification system would remain in the same group under the 1970 system, and these workers would represent 95 percent or more of the total for that group. For detailed occupations, there was far less comparability. Of the 297 occupations in the 1960 census classification system, only 171 had 90 percent or better comparability in the 1970 system. About one-half of these occupations, however, were not included in the matrix. In addition, the accuracy of some of the projections that were based on historical data from sources other than the census could not be verified. After eliminating occupations which were less than 90 percent comparable and those which had verification problems, the evaluation of projections was limited to 64 of the 160 detailed occupations covered in the matrix.

In addition to the comparability and verification problems, the comparison of actual and projected data were hampered by the sampling errors of the CPS. For a CPS estimate of 50,000, for example, the standard error would be about 6,700 or roughly 13 percent of the employment level. This much variance would have a great impact on evaluating accuracy, for projections averaged only 28 percent off the CPS-derived 1980 estimates for occupations with employment of less than 100,000.[5]

Data constraints precluded construction of a 1980 matrix with actual data comparable to the projected 1980 matrix. Consequently, 1980 employment levels for most occupations were estimated from CPS data, the primary source of occupational data for matrices between decennial censuses. Data on 1980 employment were also obtained from independent sources, such as professional associations, in cases where the 1960 and 1970 matrices used these sources rather than the census or CPS.[6]

Table 2. Comparison of projected, simulated, and actual 1980 employment in selected occupations

[Workers in thousands]

Occupation	1970	1980			Difference between projected and actual		Difference between simulated and actual		Percent change		
		Projected	Simulated	Actual	Level	Percent	Level	Percent	Projected	Simulated	Actual
Compositors and typesetters	175.0	165.0	199.5	165.0	0.0	0.0	34.5	20.9	-5.7	14.0	-5.7
Optometrists	17.5	21.0	24.9	20.9	0.1	0.5	4.0	19.1	20.0	42.3	19.4
Delivery, route, and taxi drivers	655.0	750.0	696.7	746.0	4.0	0.5	-49.3	-6.6	14.5	6.4	13.9
Food counter and fountain workers	291.0	411.0	368.4	417.0	-6.0	-1.4	-48.6	-11.7	41.2	26.6	43.3
Blue-collar worker supervisors	1488.0	1700.0	1708.9	1729.0	-29.0	-1.7	-20.1	-1.2	14.2	14.8	16.2
Heat treaters, annealers, and temperers	22.0	24.4	24.7	24.0	0.4	1.7	0.7	2.9	10.9	12.3	9.1
Veterinarians	24.0	33.0	23.3	33.8	-0.8	-2.4	-10.5	-31.1	37.5	-2.9	40.8
Welders and flame cutters	535.0	675.0	616.4	693.0	-18.0	-2.6	-76.6	-11.1	26.2	15.2	29.5
Osteopaths	13.5	19.4	20.1	18.8	0.6	3.2	1.3	6.9	43.7	48.9	39.3
Physicians and surgeons	266.0	395.0	391.5	381.3	13.7	3.6	10.2	2.7	48.5	47.2	43.3
Police and detectives	415.0	600.0	584.7	579.0	21.0	3.6	5.7	1.0	44.6	40.9	39.5
Radio and television repairers	132.0	163.0	148.8	170.0	-7.0	-4.1	-21.2	-12.5	23.5	12.7	28.8
Elementary schoolteachers	1260.0	1249.0	1856.7	1313.0	-64.0	-4.9	543.7	41.4	-0.9	47.4	4.2
Furnance tenders, smelters, and pourers	60.0	64.0	63.3	61.0	3.0	4.9	2.3	3.8	6.7	5.5	1.7
Plumbers and pipefitters	350.0	470.0	439.4	444.0	26.0	5.9	-4.6	-1.0	34.3	25.5	26.9
Railroad conductors	40.0	39.0	31.3	36.7	2.3	6.3	-5.4	-14.7	-2.5	-21.8	-8.3
Electricians	440.0	585.0	534.7	625.0	-40.0	-6.4	-90.3	-14.5	33.0	21.5	42.0
Machinists and related workers	585.0	660.0	671.8	616.0	44.0	7.1	55.8	9.1	12.8	14.8	5.3
Stenographers, typists, and secretaries	3504.0	4580.0	4418.2	4963.0	-383.0	-7.7	-544.8	-11.0	30.7	26.1	41.6
Molders, metal, except coremakers	56.0	62.5	62.3	58.0	4.5	7.8	4.3	7.4	11.6	11.3	3.6
Dentists	96.7	127.6	144.1	118.3	9.3	7.9	25.8	21.8	32.0	49.0	22.3
Meatcutters and butchers, except meatpackers	190.0	200.0	214.4	185.0	15.0	8.1	29.4	15.9	5.3	12.8	-2.6
Carpenters	830.0	1075.0	1079.9	1172.0	-97.0	-8.3	-92.1	-7.9	29.5	30.1	41.2
Railroad brake and switch operators	88.0	85.0	70.2	78.2	6.8	8.7	-8.0	-10.2	-3.4	-20.2	-11.1
Mail carriers, post office	254.0	320.0	315.8	357.2	-37.2	-10.4	-41.4	-11.6	26.0	24.3	40.6
Registered nurses	688.7	983.0	984.6	1101.0	-118.0	-10.7	-116.4	-10.6	42.7	43.0	59.9
Waiters and waitresses	1040.0	1240.0	1225.3	1413.0	-173.0	-12.2	-187.7	-13.3	19.2	17.8	35.9
Millwrights	80.0	94.0	88.7	108.0	-14.0	-13.0	-19.3	-17.9	17.5	10.9	35.0
Cabinetmakers	70.0	72.7	84.6	85.0	-12.3	-14.5	-0.4	-0.5	3.9	20.9	21.4
Shipping and receiving clerks	379.0	430.0	437.9	505.0	-75.0	-14.9	-67.1	-13.3	13.5	15.5	33.2
Postal clerks	300.0	385.0	372.9	456.3	-71.3	-15.6	-83.4	-18.3	28.3	24.3	52.1
Mechanical engineers	206.7	276.8	253.2	232.0	44.8	19.3	21.2	9.1	33.9	22.5	12.2
Firefighters	180.0	275.0	251.2	227.0	48.0	21.2	24.2	10.7	52.8	39.6	26.1
Aeronautical engineers	63.9	77.6	72.9	64.0	13.6	21.3	8.9	13.9	21.4	14.1	0.2
Civil engineers	179.9	235.6	245.7	192.0	43.6	22.7	53.7	28.0	31.0	36.6	6.7
Locomotive engineers	43.0	43.0	34.7	34.2	8.8	25.7	0.5	1.5	0.0	-19.3	-20.5
Surveyors	51.2	68.2	74.8	93.0	-24.8	-26.7	-18.2	-19.6	33.2	46.1	81.6
Dietitians and nutritionists	30.0	37.4	42.0	51.0	-13.6	-26.7	-9.0	-17.6	24.7	40.0	70.0
Jewelers and watchmakers	35.0	34.7	37.6	48.0	-13.3	-27.7	-10.4	-21.7	-0.9	7.4	37.1
Guards	373.0	425.0	507.9	589.0	-164.0	-27.8	-81.1	-13.8	13.9	36.1	57.9
Boilermakers	24.0	26.5	26.5	37.0	-10.5	-28.4	-10.5	-28.4	10.4	10.4	54.2
Cashiers	847.0	1110.0	984.4	1554.0	-444.0	-28.6	-569.6	-36.7	31.1	16.2	83.5
Cement and concrete finishers	65.0	90.0	86.1	70.0	20.0	28.6	16.1	23.0	38.5	32.5	7.7
Chemical engineers	50.9	59.3	58.4	46.0	13.3	28.9	12.4	27.0	16.5	14.7	-9.6
Plasterers	35.0	40.0	46.4	31.0	9.0	29.0	15.4	49.7	14.3	32.6	-11.4
Postmasters and assistants	35.0	35.0	43.5	27.1	7.9	29.2	16.4	60.5	0.0	24.3	-22.6
Cooks, except private household	740.0	930.0	922.5	1335.0	-405.0	-30.3	-412.5	-30.9	25.7	24.7	80.4
Asbestos and insulation workers	25.0	34.0	30.8	49.0	-15.0	-30.6	-18.2	-37.1	36.0	23.2	96.0
Crane, derrick, and hoist operators	145.0	179.0	162.1	137.0	42.0	30.7	25.1	18.3	23.4	11.8	-5.5
Weavers, textile	60.0	50.0	57.1	38.0	12.0	31.6	19.1	50.3	-16.7	-4.8	-36.7
Bank tellers	225.0	337.0	269.7	506.0	-169.0	-33.4	-236.3	-46.7	49.8	19.9	124.9
Photographers	65.0	72.0	87.6	111.0	-39.0	-35.1	-23.4	-21.1	10.8	34.8	70.8
Bartenders	160.0	200.0	185.5	311.0	-111.0	-35.7	-125.5	-40.4	25.0	15.9	94.4
Lawyers and judges	286.9	342.0	381.5	539.0	-197.0	-36.6	-157.5	-29.2	19.2	33.0	87.9
Roofers and slaters	60.0	76.0	78.8	124.0	-48.0	-38.7	-45.2	-36.5	26.7	31.3	106.7
Knitters, loopers, toppers	47.5	46.0	44.9	33.0	13.0	39.4	11.9	36.1	-3.2	-5.5	-30.5
Inspectors, log and lumber	20.0	23.0	21.2	16.0	7.0	43.8	5.2	32.5	15.0	6.0	-20.0
Psychologists	33.2	56.0	47.6	106.0	-50.0	-47.2	-58.4	-55.1	68.7	43.4	219.3
Photoengravers and lithographers	34.0	50.0	38.3	32.0	18.0	56.3	6.3	19.7	47.1	12.6	-5.9
Patternmakers, metal and wood	43.0	56.8	50.7	36.0	20.8	57.8	14.7	40.8	32.1	17.9	-16.3
Airplane mechanics and repairers	140.0	194.0	172.6	121.0	73.0	60.3	51.6	42.6	38.6	23.3	-13.6
Telephone operators	420.0	480.0	497.0	299.0	181.0	60.5	198.0	66.2	14.3	18.3	-28.8
Credit managers	68.0	100.0	80.5	54.0	46.0	85.2	26.5	49.1	47.1	18.4	-20.6
Locomotive engineers' helpers	17.2	14.0	13.4	7.4	6.6	89.2	6.0	81.1	-18.6	-22.1	-57.0

Methods and assumptions. The basic approach used to estimate future occupational employment requirements was to project total employment by industry, project occupational staffing patterns (ratios) by industry, and then multiply the industry totals by the ratios to obtain occupational estimates. The results were then summed across industries to obtain occupational totals.

Projections of the occupational structure of each industry were based on examination of historical statistics and the analysis of the factors that influence occupational structure changes, such as new technology and changes in the product mix of industry. Employment requirements for many occupations, however, were projected independent of their relationships to industry employment. The projection of schoolteachers, for example, was based on an analysis of trends in pupil-teacher ratios and the projected school-age population. This technique was preferred in cases where such reliable predictive relationships could be established.[7]

The 1980 occupational projections embodied certain assumptions about the size of the labor force, Armed Forces strength, the rate of unemployment, and other selected assumptions. Full employment was assumed in the target year and defined as a civilian labor force with a 3-percent unemployment rate. A total labor force of 100.7 million was projected for 1980, and it was assumed that 2.7 million persons would be in the Armed Forces, yielding a civilian labor force of 98 million. With the assumed unemployment rate, the result was projections of 95.1 million employed and 2.9 million unemployed workers. The employment number was used as a control total for the occupational projections.

Total employment underestimated

The projection of total employment for 1980 was 2.2 percent below the actual 97.3 million. Ironically, the error would have been greater if either the labor force or the unemployment rate had been accurately projected. The labor force projection was 5.7 percent lower than the actual 106.8 million, primarily because the number of women entering the labor force was greater than anticipated.[8] In addition, Armed Forces strength was overprojected by 600,000. The net result was a 6.7-million, or 6.4-percent, understatement of the civilian labor force (workers in thousands):

Labor force group	*Projected*	*Actual*	*Percent difference*
Total	100,700	106,821	-5.7
Armed Forces	2,700	2,102	28.4
Civilian labor force	98,000	104,719	-6.4
Employment	95,085	97,270	-2.2
Unemployment . . .	2,915	7,448	-60.9

The unemployment rate in 1980 averaged 7.1 percent, instead of the assumed 3 percent. Consequently, the number of unemployed workers was underestimated by about 4.5 million. In terms of employment, however, this error offset a large part of the error in the civilian labor force projection. If the civilian labor force had been projected correctly, the unemployment assumption would have resulted in a 4.4-percent overstatement of 1980 employment, rather than the 2.2-percent underestimate that occurred. Conversely, if the unemployment rate had been accurately anticipated, the civilian labor force projection would have resulted in a 6.4-percent understatement of employment.

The recovery and expansion that followed the 1974–75 downturn came to an end in 1980, as the economy felt the effects of the 1979 oil-price shock. After declining from 8.5 percent in 1975 to 5.8 percent in 1979, the unemployment rate rose to 7.1 percent in 1980. Even if the economy had continued to improve, however, it is not likely that unemployment would have declined to the 3-percent rate assumed in the projections. The economic downturn of 1980 affected employment in some occupations more than others. Because unemployment rates for individual occupations were not specified in the assumptions, however, the effect of economic conditions on the accuracy of a projection for any given occupation is difficult to measure.

Simulated projections

A simulated matrix based on projected 1980 industry employment totals and 1970 staffing patterns for each industry was developed to determine whether these base-year patterns would have resulted in better or worse occupational employment estimates than the projected patterns that were used. Neither was clearly superior, but the 1980 estimates for many occupations changed substantially.[9]

The projections were more accurate than the simulations for 6 of the 9 major occupational groups. (See table 3.) However, the average absolute error for all groups declined from 6.7 percent to 5.7 percent as a result of the simulations. The improvement in this average was largely because of a much more accurate estimate for nonfarm laborers. Employment in this group was projected to increase less than 1 percent between 1970 and 1980, but actually rose 19.7 percent. The simulated estimate was very close to actual employment. Simulations also were more accurate than projections for managers and farmworkers.

The simulation improved the projection accuracy for exactly one-half of the 64 detailed occupations in the study and reduced it for the remainder. (See table 2.) The average absolute percentage error increased slightly, from 22.4 percent to 22.9 percent. Errors from the simulation ranged from a 55-percent understatement of psychologists to a 81-percent overstatement of locomotive engineers' helpers. The same occupations had the most extreme errors in the projections, and the values

Table 3. Comparison of projections and simulations of 1980 employment by occupational group

[Workers in thousands]

Occupational group	1980			Difference between projected and actual		Difference between simulated and actual	
	Projected	Simulated	Actual	Level	Percent	Level	Percent
Total	95,085	95,085	97,270	−2,185	−2.2	−2,185	−2.2
Professional and technical workers	15,500	15,117	15,613	−113	−0.7	−496	−3.2
Managers and administrators	9,500	9,910	10,919	−1,419	−13.0	−1,009	−9.2
Salesworkers	5,760	5,541	6,172	−412	−6.7	−631	−10.2
Clerical workers	17,285	16,763	18,105	−820	−4.5	−1,342	−7.4
Craft and kindred workers	12,240	12,143	12,529	−289	−2.3	−386	−3.1
Operatives	15,440	15,830	13,814	1,626	11.8	2,016	14.6
Nonfarm laborers	3,700	4,377	4,456	−756	−17.0	−79	−1.8
Service workers	13,060	12,695	12,958	102	0.8	−263	−2.0
Farmworkers	2,600	2,700	2,704	−104	−3.9	5	0.2

NOTE: Details may not add to totals because of rounding. Percent differences are based on unrounded numbers.

were about the same. However, considerable differences appear when the occupations are ranked according to accuracy. Only two occupations were among the 10 with the most accurate projections in each version. Even among each top 20, there were only nine occupations in common. Similarly, only two occupations were among the 20 with the worst projections in each version.

The simulation increased projection errors substantially for several occupations. One of the better projections, a 5-percent underestimate of elementary schoolteachers, was raised to a 41-percent overestimate. Because these teachers declined as a percentage of total employment in the educational services industry between 1970 and 1980, the use of 1970 staffing patterns in the matrix resulted in an overstatement of employment.[10] Some other occupations with much less accurate projections as a result of the simulation were veterinarians, optometrists, compositors and typesetters, and postmasters. In contrast, projection errors were reduced significantly in several occupations, including credit managers, airplane mechanics, photoengravers and lithographers, and locomotive engineers. Many of the occupations most affected by the simulation were concentrated in relatively small numbers of industries, thus reducing chances of compensating errors in industry-occupation cells in the matrix.

Similar patterns were observed in both the projections and the simulations. The largest occupations generally had the most accurate 1980 estimates. In each case, the direction of employment change was correctly anticipated in about 5 out of every 6 occupations. Employment in about two-thirds of the growing occupations was underestimated, and nearly all employment declines were underestimated.

The simulation exercise indicated that the extrapolation of staffing patterns did not, on average, produce more accurate projections for detailed occupations than the assumption that the patterns would not change over the projection period. This suggests that future work should concentrate on analysis of factors that affect the patterns, rather than extrapolations based on limited observations.

Projections for 1975

The 1980 occupational projections were slightly less accurate than those previously developed by the Bureau for 1975. The 1980 estimates have the disadvantage of being based on more dated statistics on occupational staffing patterns of detailed industries as the 1960 census was the most recent source for both projections. However, a larger number of CPS annual estimates of total employment in each occupation was available for the 1980 projections.

Although the 1975 projections were published with a 1960 matrix base, CPS estimates of annual employment were available annually through 1965 at the time the projections were being developed and were used in the analysis. Annual CPS estimates through 1970 were available for the 1980 projections. Therefore, both the 1975 and 1980 projections covered a 10-year span.

The projection of total civilian employment in 1975 was 2.9 percent higher than the actual level of 84.8 million. The 1980 projection, by contrast, was 2.2 percent lower than the actual level of 97.3 million. The difference is explained primarily by the underlying labor force projections. In both periods, labor force participation rates for women rose more rapidly than expected, resulting in underestimates. However, the labor force was underestimated by only 2.3 percent in 1975, compared with 5.7 percent in 1980. For each year, it was assumed that Armed Forces strength would be 2.7 million and the unemployment rate would be 3 percent. The number of military personnel was overestimated by about 24 percent in 1975 and by more than 28 percent in 1980. The economic recession of the mid-1970's negated the assumption of a full-employment economy in 1975. The unemployment rate in 1975 averaged 8.5 percent, or almost triple the assumed rate. Although the downturn in 1980 was not as severe, the unemployment rate averaged 7.1 percent.

Among the comparable detailed occupations, the 1975 projections averaged 21.1 percent off the mark, while the 1980 estimates averaged 22.4 percent off. Accuracy improved, however, for about one-half of the occupations. The largest error among the 1975 projections, a 136-percent overestimate of plasterers, was reduced to 29 percent. Large projection errors for civil engineers and knitters, loopers, and toppers also were reduced. Occupations with worse projections in 1980 included airplane mechanics, lawyers, telephone operators, locomotive engineers' helpers, and crane, derrick, and hoist operators.

Only two occupations were among the 10 with the most accurate projections for each year. Among the leading 20, there were eight occupations in common. In addition, relatively few of the same occupations were among the least accurate projections for each year.

Again, similar patterns were observed in both sets of projections. The largest occupations usually had the most accurate projections. The direction of employment change was correctly anticipated for about 5 out of every 6 occupations in each set. In both the 1975 and the 1980 projections, errors for occupations that declined in employment averaged more than twice as high as those with employment growth. Nearly all employment declines were underestimated. However, employment in about one-half of the growing occupations was underprojected in 1975, compared with two-thirds in 1980.

The 1975 projections performed better against simple extrapolations than the 1980 projections, but the extrapolations for these two target years were not based on the same number of employment observations. For the 1975 study, annual employment data were available only for 6 years, whereas most of the extrapolations to 1980 were based on 9 years of data.

The earlier evaluation did not include a simulation of target-year employment using base year occupational staffing patterns and projected industry employment totals. Instead, it focused on a simulation based on projected staffing patterns and actual 1975 employment totals for each industry, which disclosed that errors in the occupational employment projections were mostly a result of the staffing patterns. Unfortunately, data limitations precluded a similar study of the 1980 projections.

New projections

Since the 1980 projections were published, the Bureau has taken steps to improve its occupational outlook program. Recently, the first matrix to be developed from data from the Occupational Employment Statistics survey was completed and projected to 1990.[11] Previous matrices were based largely on census information on trends in staffing patterns from decade to decade. Because census data are collected only once every 10 years, they do not capture the latest developments in occupational employment requirements in different industries. The occupational employment survey provides much more timely information, as it collects data on a 3-year cycle. The survey also is more specific in its definition of occupations and has a larger sample than the census-derived sample.[12]

Both this study and that of the 1975 projections indicated weaknesses in industry-occupation staffing patterns. The evaluation of the 1980 projections disclosed that mechanical extrapolation of staffing patterns in the matrix does not necessarily produce better results than static patterns. In preparing the 1990 survey-based projections, patterns were extrapolated only when detailed analysis showed that there were reasons to expect them to change. As a result, the matrix has more industry-occupation cells that remain static between the base and target years.

The 1980 projections were based on a single set of assumptions. Three alternative sets of occupational employment projections were developed for 1990 from different assumptions about growth of the labor force, production, productivity, and other factors. While many users of the data may prefer a single set of estimates, the Bureau's evaluations have demonstrated a wide range of errors in previous occupational projections. In addition, a single estimate concerning the future inevitably causes users to attribute a precision to it that should not be afforded. Alternatives also are of more value to planners who are concerned with how differences in the assumptions might affect the demand for some occupations more than others. □

FOOTNOTES

[1] The Bureau's occupational projections for 1980 were published in *Tomorrow's Manpower Needs*, Volume IV, revised 1971, Bulletin 1737.

[2] See Max L. Carey, "Evaluating the 1975 projections of occupational employment," *Monthly Labor Review*, June 1980, pp. 10–20.

[3] CPS annual averages of employment for 1962 through 1970 were extrapolated for the 51 occupations which use the Census and CPS as data sources for the matrix. Twelve other occupations had matrix estimates based on independent sources. Rather than attempting to reconstruct annual data from independent sources, estimates from 1960 and 1970 matrixes were extrapolated for these occupations. An extrapolation was not developed for osteopaths because an estimate for this occupation was not available from the 1960 matrix. The extrapolation for locomotive engineers' helpers resulted in negative employment in 1980; the negative number was arbitrarily adjusted to a positive level of 100 workers.

[4] *Technical Paper 26 1970 Occupation and Industry Classification System in Terms of Their 1960 Occupation and Industry Elements.* (Washington, U.S. Bureau of the Census. 1972.)

[5] The formula and parameters established from the CPS were not developed specifically for use in identifying standard errors of employment in detailed occupations, but, nevertheless, should approximate the magnitude of error.

[6] For some occupations, the 1970 matrix employment levels and 1970 CPS employment levels were identical. In these cases, the 1980 CPS employment was accepted without adjustment. For many other occupations, however, differences existed between CPS and matrix employment levels for 1970, even though the matrix estimates were not developed from independent sources. If a difference was large, the occupation was not included in the evaluation. The 1980 CPS employment levels were adjusted to account for small differences in the 1970 numbers from the CPS and the matrix. If matrix employment for an occupation in 1970 was 2 percent higher than CPS employment, for example, the 1980 CPS employment was increased by 2 percent. A similar procedure was followed in preparing employment estimates from data obtained from independent sources.

[7] For a detailed discussion of the methodology used in developing employment projections, see *Tomorrow's Manpower Needs*, pp. 3–6.

[8] The total labor force participation rate for women was projected at 43.0 percent for 1980. See "The United States economy in 1980," *Monthly Labor Review*, April 1970, pp. 3–34. The labor force participation rate for women in 1980 was actually 50.9 percent. For an evaluation of the 1980 labor force projections, see Howard N Fullerton, "How accurate were projections of the 1980 labor force?", elsewhere in this issue.

[9] Other simulations based on different combinations of actual and projected data on staffing patterns and industry employment totals would have been interesting. The occupational totals resulting from a matrix based on 1970 staffing patterns and actual 1980 industry employment levels could be compared with the actual 1980 occupational totals to determine the extent to which static patterns alone would have affected projection accuracy. Similarly, simulations could be developed by combining actual 1980 staffing patterns with projected 1980 industry employment, and projected 1980 staffing patterns with actual 1980 industry employment. These two simulations could be used to determine whether the projections of staffing patterns or the projections of industry employment contributed most to the projection error for each occupation. Unfortunately, some of the data needed for these studies were unavailable. The Current Population Survey (CPS), which was the primary source of data on total employment by detailed occupation for 1980, gives staffing patterns only for industry groups. The Bureau's establishment survey, which is the source of data on wage and salary employment in each industry, changed from the 1967 Standard Industrial Classification (SIC) to the 1972 SIC in 1978, and, consequently, projected and actual employment levels for 1980 are not comparable for many industries.

[10] Actually, the 1970 staffing patterns for elementary schoolteachers were not the sole source of the overprojection of employment in the simulated matrix. The error was compounded by an overprojection of total employment in the educational services industry for 1980. If the industry projection had been correct, the overprojection of elementary teachers would have been reduced by more than one-third.

[11] See Max L. Carey, "Alternative occupational employment projections, 1980–90," *Monthly Labor Review*, August 1981, pp. 42–55.

[12] For a description of the survey, see *Occupational Employment Statistics Handbook*, Bureau of Labor Statistics, April 1979.

Shortages of machinists: an evaluation of the information

Shortages of machinists appear to exist but the statistics that quantify the shortages are unreliable; some employers can cope by offering higher wages, others may use technological improvements or increase training

Neal H. Rosenthal

Is there a shortage of machinists? Will machinists be in short supply in the future? Various studies offer conflicting answers that cannot be resolved with available data. However, an examination of Current Population Survey, Area Wage Survey, and other data can shed light on *why* the conflict exists. This article undertakes such an examination.

During the past few years many articles dealing with current and expected future shortages of machinists were published in national periodicals. Their basic conclusions are generally consistent: Employers currently are not able to hire as many skilled machinists as they would like; current training is not sufficient to alleviate shortages; and similar conditions have existed for some time. Concern about the future supply is also based on the expected decline in the number of 18- to 24-year-old workers in the 1980's. However, different conclusions result from studies concerning technological change. They generally state that the need for manual labor in factories, especially highly skilled machinists, will be reduced significantly in the future.

Because of the different viewpoints of these studies, future supply-demand conditions for machinists are unclear. Furthermore, very little of the statistical information used to present both sides is based on "hard data." Most data are obtained from employers in surveys that have questionable reliability. Existing Federal programs do not collect data on shortages of workers in specific occupations; such data would be very expensive to collect and because of their complexity their reliability would be questionable. Also, information about future occupational shortages is very limited. Nevertheless, by summarizing and analyzing a wide variety of data, insights can be gained into the problems and issues.

Definition of terms

Shortages. Data are often misused or misinterpreted because definitions of terms are not clearly specified. Shortage, as used here, means that sufficient workers are not available and willing to work at the existing wage level. Traditional economic theory, which states that if wages are raised, supply will increase because more workers will seek jobs, is consistent with this definition. However, it usually takes time to acquire the required skills, so demand may not be met in the short run. Under these conditions, wages can be expected to rise as employers hire trained workers from each other, overtime will be used to meet production schedules, and less skilled workers will be employed. These factors are apt to raise prices and reduce productivity.

In addition, it is likely that employers would raise wages for trainees in an attempt to attract qualified

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workers to machinist training programs and thereby reduce future shortages. However, wages alone do not affect one's career choice; working conditions, social status, and personal abilities and preferences are also considerations.

Hence, the job market for an occupation is very complex. Workers employed in a specific occupation may shift to another occupation; die; retire; change jobs by switching employers but remaining in the same occupation; or lose their jobs and become unemployed. Most occupations also have several skill levels, and employees can change jobs within the same occupation by moving up the skill ladder. At the same time that individuals leave an occupation or change jobs within it, others enter the occupation. They come from outside the labor force, as do new young workers and persons who are returning to work after raising a family, pursuing some additional education, or a short period of retirement. Entrants also may come from another occupation or from the ranks of the unemployed. Unfortunately, available data do not quantify these various situations accurately.

Machining occupational classification. Many discussions about shortages of machinists are confusing because it is unclear which jobs are included in the job classification. For example, the occupational titles of machinist, machining occupations, and metalworking occupations are often used to mean different groups of workers but sometimes they are used interchangeably. Furthermore, because consistency in occupational definitions does not exist among all Federal statistical programs, data on machinists from various sources may reflect different groupings of workers. For example, the occupational classification used by the Bureau to collect data on wages of machinists from the Area Wage Survey Program is not identical to the classification in the Current Population Survey (CPS). Similarly, the definition of machinists for which data are compiled on job openings registered by employers with the U.S. Employment Service does not match the CPS definition. Data on vocational programs also are classified differently.[1] The coverage of machinists in the various surveys conducted by employer associations to identify shortages also differs from that used in most Federal statistical programs. Inclusion of specific jobs within the broad term machinists also changes from one employer survey to another and probably among employers responding to the same survey. Therefore, results from one survey should not be compared with data based on other surveys unless consistency of job content has been ensured. Unfortunately, such comparisons have been made in the past even though the data were not comparable. This practice has contributed to much of the perplexity concerning shortages of machinists.

To avoid confusion in this article, the CPS definition of machinists was used because that survey provides more data than any other single source about employment and unemployment trends for workers in machining occupations. Furthermore, many other statistical series are reasonably compatible with the CPS or can be related through crosswalks.

Machining workers are classified in two skill-level groups in the CPS—skilled workers and operatives. Three skilled machining occupations identified separately in the CPS are discussed here—machinists, tool-and-die makers, and job and die setters. Data for five operative occupations—drill-press operatives; grinding-machine operatives; lathe and milling-machine operatives; punch-press-machine operatives; and other precision machine operatives—are also analyzed.

Each of these occupations includes workers found in a variety of jobs as classified by employers. For example, the occupation of tool-and-die maker in the CPS's . conducted during 1972–80, includes 35 separate job titles, including diemaker, diesinker, jig-bore-tool maker, tool adjuster, and jig-and-fixture builder. Similarly, skilled machinists comprise about 25 specific job titles such as fitter-machine, precision machinist, toolroom machinist, lathe machinist, and aircraft machinist. Lathe and milling-machine operatives include more than 60 different job titles, such as lathe operator, lathe turner, tool-lathe operator, milling-machine operator, and gear cutter.

It should be pointed out that CPS statistics are compiled as if there were a clear break in skills between occupations rather than a continuum within each category. For example, all workers in the machinist or the lathe operators category do not perform at the same skill level. Also, the skills of workers who are counted in the skilled machining occupations in the CPS overlap with those of some operatives.

Machinists in the 1970's

Employment. Combined employment in the three skilled machining occupations covered separately in the CPS—job and die setters, metal; machinists; and tool-and-die makers—increased from 655,000 to 834,000, or 27 percent, between 1972 and 1980.[2] Job growth averaged 22,400 a year. (See table 1.) In comparison, employment in manufacturing industries, where most machinists are employed, grew by only 6 percent over the same period. Machinist employment grew from 377,000 to 567,000, or 50 percent, but the other skilled machining occupations—job and die setters and tool-and-die makers—declined slightly. During the 1975 recession, employment did not decrease significantly for any of the skilled machining occupations.

Employment in each of the operative machining occupations fell between 1972 and 1980 or remained at

Table 1. Employment in machining occupations, annual averages, 1972–80

[Numbers in thousands]

Occupation	1972	1973	1974	1975	1976	1977	1978	1979	1980
Skilled machining occupations, total	655	682	735	731	758	768	773	824	834
Job and die setters, metal	94	93	97	96	92	97	98	90	91
Machinists	377	402	461	461	478	478	493	552	567
Tool-and-die makers	184	187	177	174	188	193	182	182	176
Operative machining occupations, total	625	595	601	489	508	524	542	562	502
Drill press	75	77	69	61	65	62	64	67	61
Grinding machine	130	140	152	132	133	126	129	143	134
Lathe milling machine	123	136	137	118	108	121	125	123	114
Punch stamping press	157	175	170	130	155	152	156	158	127
Other precision machines	140	67	73	48	49	63	68	71	66

roughly the same level. For operative machining occupations as a group, employment dropped by an average of 15,400 annually. However, during the 1975 recession, employment decreased significantly in each of these occupations.

Unemployment. Unemployment rates for machinists and tool-and-die makers were lower than those for craftworkers as a whole in each year from 1972 to 1980. (See table 2.) The unemployment rates for tool-and-die makers were very low—less than 3 percent—for most of the period. However, even for this occupation the rate jumped significantly to 7.1 percent during the 1975 recession, although it declined to 3.3 percent in 1976. The unemployment rate for machinists was lower than that for tool-and-die makers prior to the 1975 recession, but was higher after 1975. The unemployment rate for job and die setters was also relatively low in the 1970's. During the 1970's, the unemployment rate for the skilled machining occupations was lower than that for durable goods manufacturing as a whole, in which more than 80 percent of all skilled machining workers are employed. Unemployment rates for operative machining occupations were generally higher than average.

Earnings. Earnings data for machinists, tool-and-die makers, and machine-tool operators are collected through the Bureau's Area Wage Surveys. The definitions for both machinists and tool-and-die makers used in these surveys are not identical to those in the CPS, but they are very comparable. However, the skill level of the machine-tool operators for which wage data are collected is much higher than that which the average worker reported in operative machining occupations in the CPS.

The hourly earnings of machinists, tool-and-die makers, and machine-tool operators from the Area Wage Surveys varied only slightly within the same city for each year in which data were available during 1972–80. In general, tool-and-die makers earned a little more than machinists who in turn earned slightly more than machine-tool operators, although the pattern varied among cities. (See table 3.) For each occupation, there were some significant earnings differentials among cities.

Workers in the machining occupations covered in the BLS Area Wage Surveys had higher average hourly earnings than all production workers in manufacturing industries in the same city as reported in the Bureau's Current Employment Statistics program. Between 1972 and 1980, the wages of workers in the machining occupations relative to all production workers remained the same or declined slightly in five cities for which data are readily available.

Training. Data on registered apprenticeships indicate that completions declined significantly between 1970 and 1980 for machinists and tool-and-die makers. The number of machinist apprenticeship completions fell from 3,822 to 1,905 between 1970 and 1975, increased to nearly 3,000 in 1977, and then decreased to 2,450 in 1979. Tool-and-die makers followed a similar pattern but their decline from 1970 was even greater. The following tabulation shows the number of completions and additions to registered apprenticeship programs in 1972–79 for machinists and tool-and-die makers:

	Machinists		*Tool-and-die makers*	
	Completions	*Additions*	*Completions*	*Additions*
1972 . .	3,695	—	3,825	—
1973 . .	2,357	—	2,716	—
1974 . .	2,047	6,526	2,051	4,934
1975 . .	1,905	4,858	1,849	2,900
1976 . .	2,526	5,567	1,901	3,888
1977 . .	2,967	5,488	2,387	5,150
1978 . .	2,859	6,385	2,311	5,501
1979 . .	2,450	6,397	1,807	5,379

However, workers who complete apprenticeship programs are not new entrants to an occupation in an accounting sense, because apprentices are counted in the employment totals for the occupation. Adding them as new workers, when they complete training, would result in double counting. Data on the additions to apprenticeship programs each year provide a better measure of new entrants to an occupation. These data show that the number of new additions to apprenticeship programs averaged between 5,000 and 6,500 for machinists and 3,000 to 5,500 for tool-and-die makers from the mid- to late 1970's. They do not display the declining pattern shown by completions.

Training programs for tool-and-die makers, machine-tool operators, and machine-shop occupations also are offered in public vocational educational programs. Data on completions are very sparse and their meaning is vague because both secondary and post-secondary completions are added together in reports. Thus, the completions may reflect a 1- or 2-year program or just one course. Furthermore, the skills of the individuals completing these programs are minimal compared to those of persons finishing apprenticeship programs, and completion of vocational courses does not qualify individuals for journeyman positions. Generally, those completing these programs subsequently enter apprenticeship programs in order to pursue careers in machining occupations. In 1978, 2,400 students completed tool-and-die making training in public vocational schools, 3,400 completed training in machine-tool operation, and 32,000 completed training in other machine-shop occupations.

Implications of the data

The data presented above do not prove or disprove that shortages of machinists exist. Nevertheless, they are compatible with the existence of such shortages. The data indicate that skilled machinists are important in production activities: During the 1970's, they increased as a proportion of total employment, and even during the 1975 recession, their employment did not decrease. The very low unemployment rates for skilled machining workers during the 1970's also is very compatible with a shortage of workers. However, it is doubtful that general shortages of machine operatives occurred during this period because of their relatively high unemployment rates. However, during some years, these rates were very low for certain operative occupations and indicate possible shortages.

Unlike the data on unemployment, those on earnings of machining workers do not show a pattern that would, in theory, be expected with the existence of shortages. When there are shortages in an occupation over time, its wages should increase relative to those of other workers who are not in limited supply. This was not the case for machinists, as the differential wage between machinists and all production workers did not change significantly. However, the constant wage differential is not definitive proof that a shortage did not exist. Wage structures are interconnected in complex ways, and there could be conditions that would not allow the differential to change significantly despite a shortage. For example, the industries employing many machinists and tool-and-die makers have numerous small firms that compete for work through bids in response to service requests. If one firm raises its wages, it must also raise its bids, and risk losing work. Thus, raising wages to attract workers may be counter-productive, if the new workers are subsequently not needed because work is not available.

Table 2. Unemployment rates for machining occupations, annual averages, 1972–80

[In percent]

Occupation	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total, all workers	5.6	4.9	5.6	8.5	7.7	7.0	6.0	5.8	7.1
Craftworkers	4.3	3.7	4.4	8.3	6.9	5.6	4.6	4.5	6.6
Job and die setters, metal	3.1	1.2	2.2	7.8	4.0	3.2	2.8	3.5	4.8
Machinists	3.2	1.9	2.2	7.0	5.9	3.8	3.1	2.7	4.8
Tool-and-die makers	4.0	1.6	2.5	7.1	3.3	2.0	2.6	.9	2.8
Nontransport operatives	7.6	8.1	13.2	14.7	10.8	9.5	8.1	8.4	12.2
Drill press	9.5	6.3	9.9	20.0	15.8	9.5	4.9	5.8	13.4
Grinding machine	5.6	2.2	4.5	11.8	7.1	4.7	4.9	3.1	8.8
Lathe milling machine	5.1	1.8	3.4	13.1	8.6	5.3	4.6	2.9	9.1
Punch stamping press	8.2	4.7	9.5	23.2	12.1	9.4	8.0	12.9	24.1
Other precision machines	5.8	3.4	4.9	14.5	10.3	5.6	7.0	6.7	12.8
Total, durable goods manufacturing	5.4	7.9	5.4	11.3	7.7	6.2	4.9	5.0	8.9

Table 3. Earnings of workers in selected machining occupations relative to those of all production workers, selected cities, 1972 and 1980

City and occupation	1972	1980
Boston:		
Machinists	1.47	1.22
Machine-tool operators	1.43	1.12
Chicago:		
Machinists	1.31	1.32
Tool-and-die makers	1.41	1.30
Machine-tool operators	1.28	1.30
Houston:		
Machinists	1.29	1.23
Tool-and-die makers	1.17	1.15
Baltimore:		
Tool-and-die makers	1.32	1.31
Machine-tool operators	1.15	1.14
Cincinnati:		
Tool-and-die makers	1.30	1.26
Machine-tool operators	1.24	1.17

Trends in training through apprenticeship programs shed some light on the job market situation for machining workers because apprenticeship training is provided by employers. During periods of shortages or expected shortages, employers should be willing to increase training. However, during the 1970's, apprenticeships decreased, implying that shortages did not exist or that they were not severe enough to warrant increased training opportunities. However, the employer surveys conducted by associations discussed earlier in this article not only indicate the existence of shortages, but expanded apprenticeship training programs. But many employers prefer not to have registered apprenticeship programs because these must strictly conform to Department of Labor regulations, and last for 4 years. Many employers evidently feel they can train workers to acceptable standards in less time through nonregistered programs. Reducing the length of training is very consistent with the existence of shortages. Data on enrollment and completions of nonregistered programs do not show up in Federal statistics.

As indicated previously, specific data designed to measure occupational shortages are not compiled by the Federal Government. Although data are available on job orders placed with U.S. Employment Service offices throughout the country, they are not comprehensive, covering only an estimated 10 to 15 percent of all job openings, and they are not statistically valid for analyzing year-to-year changes.

However, a 1980 pilot survey of job vacancies in Massachusetts, conducted to test the collectibility of such data, point to the existence of a shortage of machinists—at least in that State. The job vacancy rate (vacant jobs divided by total employment) for machinists was 13.3 percent in 1979 and 12.5 percent in 1980,[3] significantly higher than for any other occupation in the State. High vacancy rates (over 4 percent in each year) also were found for mechanical engineers, computer scientists, registered nurses, licensed practical nurses, and computer programmers. These occupations are traditionally placed in the "shortage" category, and it is significant that the vacancy rate for machinists was much higher.

Journal articles analyzing employment and shortages of machinists often discuss the age distribution of these workers. Much is written that the average age of machinists is increasing. Such reports generally imply that the age distribution of machinists is becoming skewed toward the older age groups; but data on the age distribution of machinists and job and die setters collected in the CPS dispute this conclusion. For example, between 1972 and 1980, the proportion of these workers who were 55 to 64 years old declined, and significant increases were recorded in the 20 to 24 and 25 to 34 age groups. The rise in the younger group followed the trend of the total population and of craftworkers as a whole. Some of the employer surveys we have mentioned, which indicate shortages and the need for more training, also imply that the increasing average age of these workers is not a problem.

A look at the 1980's

Because machining workers are key to many types of industrial production, economic and industrial planners are very concerned about the future job market for these workers. The issue is particularly significant to those concerned with the capability of U.S. industry to cope with a major defense buildup. Some insights about this topic can be gained from BLS projections of employment in machining occupations.[4]

Until 1980, the Bureau's occupational projections were developed using historical employment data derived from the CPS. However, in 1980, the Bureau shifted the base for current occupational employment from the CPS to employment data generated by the Occupational Employment Statistics (OES) Survey. OES data are obtained by mail questionnaire from a sample of establishments that is designed to produce estimates of industry staffing patterns. Specific occupational definitions are listed on the questionnaire for each major occupation in an industry, and up to 16 different machining occupations can be found on an industry questionnaire. For these reasons, as well as others related to survey methods and procedures, OES survey-based employment data are believed to be more accurate than those derived from the CPS for measuring employment data by detailed industry. However, because national OES survey data were not available prior to 1978, analysis of historical data is CPS-based.

Employment data on machining occupations in the CPS and the OES survey are not strictly comparable because of differences in definitions, as well as in survey procedures and methods. For example, the 1980 CPS total for skilled machining occupations—job and die setters, machinists, and tool-and-die makers—was 834,000, about 266,000 higher than the 568,000 in 12 separate OES occupations that are in theory comparable to the three CPS groups combined. Actually, the numbers of job and die setters were reasonably close, 91,000 (CPS) and 93,300 (OES), as were the totals for tool-and-die makers, 176,000 (CPS) and 170,000 (OES). However, figures for machinists varied considerably, 304,000 (OES) and 567,000 (CPS).

Data in the CPS are collected directly from individuals who respond to questions about their work activities. It is very likely that operators of numerically controlled machine tools, and the highly skilled "machine tool operators, combo" who operate several machines are included in the CPS machinist category rather than in the operative category, "other precision machine operatives." These workers probably consider themselves to be machinists rather than machine operators, and they are apt to report to a CPS interviewer in a manner that would result in their being classified as the former. Their salaries also are very close to, if not higher than, machinists' and tool-and-die makers', and far exceed those of other workers in the machine operator class. If one assumes that these workers are counted in the CPS machinist category, and adds their OES employment (52,700 numerically controlled machine tool operators and 170,700 machine tool operators, combo) to the OES employment of skilled machining workers, the OES total would be 791,300, compared with 773,000 in the CPS.

The above discussion was designed to establish reasonable comparability of data on employment of skilled machining workers based on CPS and OES survey data. If the data are reasonably comparable, comparisons can be made between historical and projected data. As noted earlier, employment in skilled machining occupations grew an average of 22,400 a year between 1972 and 1980. In the Bureau's three alternative projections of employment to 1990, the average annual growth of employment for skilled machining workers (including numerically controlled machine tool operators and machine tool operators, combo) ranged from 11,900 to 23,200 from 1980 to 1990. In each projection, the rate of growth of employment is expected to be slower than in the 1970's, and only in the high-trend model is the 1980-to-1990 numerical average annual growth similar to that of the 1970's. (See table 4.)

Table 4. Employment in skilled machining occupations, 1980 and projected 1990

[Numbers in thousands]

Occupation	1980 employment	Projected 1990 employment		
		Low trend	High trend I	High trend II
Total, all skilled machining occupations	791.4	910.4	1,023.2	958.2
Job and die setters, metal	93.3	112.5	124.2	114.5
Diesetters	4.3	5.2	5.8	5.4
Machine toolsetters, metal	55.5	65.9	73.7	67.2
Setters, molding and coremaking machines	1.3	1.9	1.9	1.9
Punch press setters, metal	19.2	23.3	25.9	23.9
Shear and slitter setters	5.5	6.6	7.2	6.7
Setters, plastic molding machine	7.4	9.6	9.8	9.4
Machinists	304.3	352.2	390.8	386.3
Layout markers, metal	21.3	24.3	27.2	24.8
Machinists	281.9	326.7	362.3	336.4
Moldmakers, pottery	1.1	1.2	1.4	1.3
Tool and die makers	170.3	184.3	212.2	188.7
Tool-and-die makers	162.8	175.7	202.5	180.7
Diesinkers	3.1	3.4	3.9	3.5
Instrument makers	4.3	5.1	5.7	5.1
Machine-tool operators, combo	170.7	199.9	226.2	205.9
Machine-tool operators, numerical control	52.7	61.2	69.9	62.8

Conclusions

Information about the job market for skilled machining workers during the 1970's is consistent with the existence of shortages. However, statistics generated by ongoing government data collection programs do not provide the information necessary to quantify the shortage. Quantitative data from surveys conducted by employer associations are statistically unreliable and probably overstate the numerical shortage. Some employers do not experience a shortage of skilled machining workers because they offer higher than average wages, benefits, or both. Also, the severity of the shortages varies among geographic areas.

Employers can deal with shortages in many ways. Some can offer wages that are higher than other employers in their locality and therefore are able to hire the workers they need, while others implement technological gains or increase training.

Those using technological development to cope with shortages may expand their use of numerically controlled machine tools, machining centers, adaptive control, digital readout, manual data input control, improved cutting-tool materials, and group technology.[5] However, because technological improvements often require substantial capital investment, smaller employers may have great difficulty in obtaining the required funds and therefore cannot make the desired innovations.

Many employers have increased training in an effort to reduce shortages of skilled machining workers. Skilled machining workers must be trained on the job; therefore, unless employers cooperate, additional workers will not become available. However, training is expensive and many employers are not able to significantly expand their training efforts.

General shortages of skilled machinists should not worsen during the 1980's, but they may be marked in some localities. For example, if defense purchases were to rise rapidly during a short time frame and affect industries in a specific area, the shortage could become so acute that the planned increases in production could not occur.

In general, however, unless programs are designed to foster action on the part of employers, current shortages are not likely to be reduced significantly. Some specific program may be necessary to provide employers with an incentive to expand the rate at which new technology is introduced or to increase the number of workers trained each year.

Because skilled machining workers must be trained on the job in 3- to 4-year programs, increases in such programs providing machining skills offered in vocational education and Comprehensive Employment and Training Act (CETA) programs will not reduce shortages. However, individuals who complete these programs do qualify for entry into employer training programs and many employers prefer to enroll individuals who have completed an appropriate vocational education or CETA program. Because machinists are expected to have excellent job prospects through the 1980's, earnings are above average, and unemployment rates are low, expansion of these programs is appropriate. However, the major impact of this action will be to improve the quality of the individual entering employer training programs, rather than increasing their number. ☐

FOOTNOTES

[1] The value of consistency in data collection programs is recognized by the Federal Government. In 1980, the Office of Management and Budget issued the Standard Occupational Classification (SOC) which is to be used by all Federal agencies in collecting occupational data. Federal statistical data therefore will become more compatible throughout the 1980's, as agencies convert to the SOC.

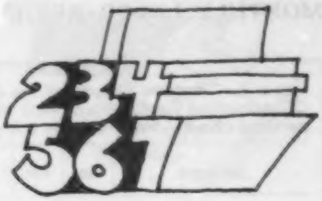
[2] Data from the Current Population Survey are not presented for the years prior to 1972 because the data are not comparable.

[3] See Massachusetts Division of Employment Security, *Job Openings in Massachusetts, 1980*, and *An Analysis of Selected High Net Demand Occupations: Findings From a State-Wide Survey* (Massachusetts, The Executive Office of Economic Affairs, 1981).

[4] Projections are developed of the labor force, the gross national product, industry output, industry employment, and occupational employment. The latter are available by 3-digit Standard Industrial Classification industry detail in the form of an industry-occupational matrix.

[5] See *Technology and Labor in Four Industries*, Bulletin 2104 (Bureau of Labor Statistics, January 1982), ch. 3.

The Anatomy of Price Change



Reconciling the CPI and the PCE Deflator: first quarter 1982

Julie A. Bunn and Jack E. Triplett

This reconciliation of the Federal Government's two major inflation measures—the Consumer Price Index (CPI), published by the Bureau of Labor Statistics, and the Implicit Price Deflator for Personal Consumption Expenditures (PCE Deflator), produced by the Bureau of Economic Analysis—extends the data through the first quarter of 1982.[1]

Reconciling period-to-period changes. For only the second time in the past 3 years, the Consumer Price Index for All Urban Consumers (CPI-U) rose more slowly than the comparable PCE price measure (the "PCE: Chain-Weight" index)[2] in the first quarter of 1982 (table 1). The most recent quarter is the first time that all three elements—differences in the measurement of housing costs, differences in weighting, and the effect of "all other" factors—of the reconciliation operated to slow the CPI-U relative to the "PCE: Chain-Weight" index.

For the second quarter in a row, the CPI-X1, the version of the Consumer Price Index which approximates a "rental equivalence" measure of housing identical to that employed in calculating the PCE Deflator, increased at a faster rate than the CPI-U. Thus the "housing effect" in table 1 was negative (meaning that, in the most recent quarter, the treatment of housing has contributed to the PCE measure rising faster than the CPI-U).

For the third quarter in a row (and contrary to what is usually expected) the "PCE: Chain-Weight" index, which draws its weights from the immediately preceding period has risen more rapidly than an index based on the same price data, but using 1972 weights.[3] This creates a negative "weighting effect" in table 1.

Finally, the "all other" effect, which measures the influence of compilation and computational differences other than the drawing of weights from different periods and the treatment of owner-occupied housing, continues the first quarter behavior of previous years, but stands out as the largest negative "all other" effect in more than [illegible] years. Differing seasonal adjustment methods account for part of the "all other" effect.

The most striking result from table 1 is the emergence of negative values for the weighting effect. It is usually expected that an index that uses 10-year-old weights will rise somewhat more rapidly than one that uses recent or current weights, and the weighting effect bore out this presumption for earlier periods (even though weights have never contributed very much to the difference in CPI and PCE movements). In the seven quarters since mid-1980, however, the weighting effect has taken on its expected positive sign in only one quarter (1981–I); in three other quarters, different weighting periods made no difference in the index measurement,

Table 1 "Reconciliation" of annual and quarterly percent changes in the CPI-U and the Personal Consumption Expenditure price measures, 1980 to 1982–I

Difference	1980	1981	1981[1]				1982
			I	II	III	IV	I
CPI-U[2]	13.5	10.4	11.0	7.8	11.8	7.7	3.2
PCE: Chain-Weight[3]	10.6	9.0	10.3	6.5	8.7	7.4	5.7
Total difference[4] (CPI-U minus PCE: Chain-Weight)	2.9	1.4	0.7	1.3	3.1	0.3	−2.5
Housing treatment[5]	2.3	0.9	0.4	0.5	2.7	−0.5	−1.3
Weighting effect[6]	0.4	0.1	0.6	0.0	−0.5	−0.2	−0.5
"All other" effect[7]	0.2	0.4	−0.3	0.8	0.9	1.0	−0.7

[1] Owing to changes in seasonal adjustment factors, the quarterly figures, seasonally adjusted annual rates, may differ slightly from those which appeared in table 1, p. 43, January 1982, *Monthly Labor Review*.

[2] Annual and quarterly changes in the CPI-U are taken from tables provided by the Office of Prices and Living Conditions, Bureau of Labor Statistics. The changes are compiled from 1967 based indexes.

[3] Data for the "PCE: Chain-Weight" were obtained from the Bureau of Economic Analysis, U.S. Department of Commerce.

[4] CPI-U minus "PCE: Chain-Weight" equals the sum of "housing treatment", "weighting", and "all other" effects.

[5] Change in CPI-U minus change in CPI-X1. See September 1981 *Monthly Labor Review*, p. 21, for fuller explanation. Source of CPI-X1 data is same as footnote 2.

[6] Change in "PCE: 1972-Weight" minus change in "PCE: Chain-Weight." See September 1981 *Monthly Labor Review*, pp. 8–9, for fuller explanation. Data source for "PCE 1972-Weight" changes is same as for footnote 3.

[7] Change in CPI-X1 minus change in "PCE: 1972-Weight." See September 1981 *Monthly Labor Review*, p. 6, for fuller explanation.

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while in the three most recent quarters values for the weighting effect have negative signs, reflecting the fact that the index with the most recent weights has registered the larger increase.

Reconciling cumulative changes. Table 2 presents a cumulative reconciliation of the CPI-U and the PCE Deflator (or PCE: Current-Weight), from 1972 to the first quarter of 1982. This table continues the cumulative comparisons of previous reconciliation articles. ☐

Table 2. "Reconciliation" of the CPI-U and the Personal Consumption Expenditure price measures: cumulative percent change from 1972 to the date shown

Difference	1980	1981	1981[1]				1982
			I	II	III	IV	I
CPI-U (1972 = 100)[2]	197.0	217.4	210.3	214.3	220.4	224.6	225.9
PCE Deflator (1972 = 100) (Current-Weight)[3]	178.9	193.8	188.5	191.5	195.7	199.4	201.8
Total difference (CPI-U minus PCE Deflator)[4]	18.1	23.6	21.8	22.8	24.7	25.2	24.1
Housing treatment[5]	11.7	14.5	13.3	13.7	15.4	15.5	14.8
Weighting effect[6]	5.4	7.2	7.3	7.4	7.2	7.0	7.4
"All other" effect[7]	1.0	1.9	1.2	1.7	2.1	2.7	1.9

[1] Owing to changes in seasonal adjustment factors, quarterly figures may differ slightly from those which appeared in table 2, p. 44, January 1982, *Monthly Labor Review.*

[2] Annual data for the CPI-U were computed by the Office of Research and Evaluation (BLS) from unadjusted monthly data provided by the Office of Prices and Living Conditions (BLS). The quarterly data for 1980 and 1981 were computed by the Office of Research and Evaluation employing seasonally adjusted monthly data provided by the Office of Prices and Living Conditions.

[3] Data for the Implicit PCE Deflator, or "PCE: Current-Weight" index, were provided by the Bureau of Economic Analysis. The data incorporate revisions released in April 1981.

[4] CPI-U minus PCE Deflator equals the sum of "housing treatment", "weighting", and "all other" effects.

[5] CPI-U minus CPI-X1. See September 1981 *Monthly Labor Review*, p. 5, for fuller explanation. Data source for the CPI-X1 is the same as footnote 2.

[6] "PCE: 1972-Weight" minus "PCE: Current-Weight." See September 1981 *Monthly Labor Review*, p. 6, for fuller explanation. Data source for the "PCE: 1972-Weight" is same as footnote 3.

[7] CPI-X1 minus "PCE: 1972 Weight." See September 1981 *Monthly Labor Review*, p. 6, for fuller explanation.

FOOTNOTES

[1] The initial reconciliation and technical basis for the analysis is contained in Jack E. Triplett, "Reconciling the CPI and PCE Deflator," *Monthly Labor Review*, September 1981, pp. 3–15.

[2] As discussed in Triplett, pp. 7, 13–14, the "PCE: Chain-Weight" index is comparable to the CPI-U for the purpose of making period-to-period comparisons, while the PCE Deflator, a Paasche-formula index, is used for the cumulative reconciliation because Paasche-formulas lend themselves to statistical interpretation only when referring back to the base year (in this case, 1972).

[3] See footnote 7 to table 1 and the Triplett, "Reconciling the CPI and PCE Deflator," for information on the computation of the weighting effect.

Technical Note

Labor force data: the impact of the 1980 census

DEBORAH PISETZNER KLEIN

The widely publicized national unemployment figures are derived from the Current Population Survey. This survey, conducted by the Bureau of the Census for the Bureau of Labor Statistics, obtains information from approximately 60,000 households each month, making it the largest survey of its type in the world. It provides data on employment and the labor force as well as unemployment, including information on age, sex, race, occupation, and industry.

A sample survey is a cost effective means of obtaining current labor force data. Every surveyed individual, 16 years or older, is classified as employed, unemployed, or not in the labor force, based on the responses to a structured questionnaire focusing on specific activities during the reference week. Because labor force classifications are obtained from the sample households rather than a complete universe, the responses must be transformed from raw survey data into estimates which reflect the target national population—the civilian noninstitutional population 16 years and older. This process has several steps which have been detailed in various technical publications.[1] This article addresses only one aspect of the process—the use of independent population estimates derived and updated from the decennial censuses, which are used to transform the sample data into meaningful statistics.

Population estimates

In a simple example, if information were obtained from a sample of 5 individuals who represent a universe of 100, each response would be multiplied by 20. However, in the CPS, independent population estimates have been established for each of 64 age-sex-race groups. The reason for using separate weights by demographic group is to adjust for the fact that the distribution of the individuals who fall into the sample in any month may differ somewhat from that of the entire Nation in terms of age, race, or sex. Because these characteristics are closely correlated with labor force status, sample estimates are more accurate when weighting is done separately for each age-sex-race group rather than with a single population estimate for the sample as a whole.

Population estimates are derived by taking population counts by age, sex, and race from the preceding decennial census and adjusting them monthly throughout the ensuing decade, taking into account the aging of the population, mortality, and net migration. When the actual counts from the subsequent census are available, they become the new benchmark from which to estimate future population levels. In past decades, there has generally been a small discrepancy between the new benchmark and the population estimate for that period as derived from the previous census. As the Census Bureau changed from one set of population controls to the next, there would be a corresponding break in the various labor force series because they were based on these population estimates.

Historically, the effect of the change from one population base to the next was relatively minor. For example, the net differences resulting from the introduction of the 1970 census-based population estimates to the CPS were about 800,000 for population and 300,000 for labor force and employment. However, the conversion to the 1980 census-based population estimates has an entirely different order of magnitude. When the 1980 census was taken, the resident population estimate based on the extrapolation of the 1970 census was 221.7 million. However, the 1980 census actually enumerated 226.5 million persons. Consequently, the population estimates underlying the CPS—the civilian noninstitutional population 16 years and over—were increased by 3.7 million (on an annual average basis in 1981) expanding the labor force by 2.3 million and employment by 2.1 million.

Data adjustment

The Census Bureau and BLS have historically followed the procedure of introducing population weights based on the new decennial census into the CPS in a single month (at the beginning of a year to avoid distortions to annual average data), and indicating in footnotes and technical articles the presence of a series break.[2] Because of the magnitude of the change, this approach was not suitable this time. Accordingly, the Census Bureau revised its intercensal population esti-

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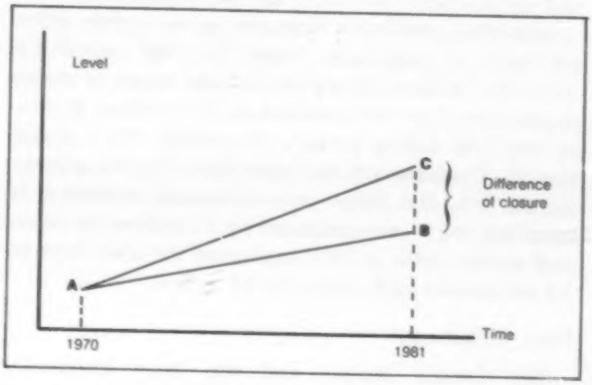
mates and the Bureau of Labor Statistics adjusted many of the more important labor force series in order to avoid sizable discontinuities. Using an estimating methodology developed jointly by BLS and the Census Bureau, the BLS developed revised estimates for some 30,000 labor force series for the 1970's that are consistent with the 1980 census-based population controls as well as the 1970 census.

The revision procedure takes the April 1970 labor force estimates as the last "true" estimate and adjusts each subsequent data cell. The estimated difference in 1981 between each labor force estimate generated by the 1980 census count and the corresponding 1970-based population estimate—called the "difference of closure"—is wedged back in time from December 1980 to April 1970. The procedure takes into account both the distance in time from the 1970 census and the specific size of the difference of closure for each series.[3]

The following simplified diagram may serve to illustrate the procedure. For any labor force series, point A represents the estimate for 1970, point B represents the estimate for 1981 as originally published using the population weights derived from the 1970 census, and point C represents the estimate for 1981 based on the population weights derived from the 1980 census. Thus, line AB represents the 1970–81 trend in the labor force series as originally published, line AC represents the trend after revision, and BC represents the difference of closure. (Had a real labor force series been graphed, AB and AC would not, of course, be straight lines, but rather would follow paths influenced by secular and cyclical developments.)



One reason for revising the data is that many users need to examine trends over time. In fact, one of the strengths of the CPS is that it provides a consistent time series which permits the tracking of cyclical and secular movement among demographic groups.

These labor force revisions are necessarily provisional because the underlying estimates of population for the 1970–80 period are considered preliminary by the Bureau of the Census. Completion of the 1980 census coverage studies and evaluation of the 1970–80 population estimates may cause the Census Bureau to readjust its revised population estimates for the 1970–80 period, which, in turn, may cause the BLS to further revise the CPS labor force estimates.

The wedge procedure is based on the premise that within each group the unexpected population increase took place on a consistent basis throughout the 1970's. Without specific evidence to the contrary, this was the most reasonable assumption to make. While the provisional revision provides a smooth, continuous, and reasonable time series, there are several key questions to consider in determining whether the existing wedge procedure will remain the most appropriate. Studies that could aid in this determination include comparisons of 1970 and 1980 census coverage; evaluation of any estimates of undercount in the 1980 census and how they may differ by age, sex, and race from previous censuses; as well as estimates of the number of illegal aliens counted in the 1980 census and judgments about how long such persons have been living in the United States.[4]

Revised labor force data are being issued by the Bureau of Labor Statistics in several steps. More than 350 series of revised monthly seasonally adjusted data were published in the February 1982 issue of *Employment and Earnings*, which also contained revised annual averages for major estimates back to 1970. The March 1982 issue of *Employment and Earnings* contained 62 tables of 1981 annual averages, some including comparisons with 1980, on a revised basis. (Annual averages for 1981, prior to revision, were published in the January 1982 issue and, thus, are available for comparison.) In terms of the *Monthly Labor Review*, the March 1982 issue was the first to contain revised data. In late 1982, BLS is scheduled to publish a data book with 176 tables containing nearly 15,000 data series on a revised basis. In the meantime, many series of both actual and seasonally adjusted data may be obtained from the BLS upon request. Table 1 provides labor force, employment, and unemployment estimates both before and after revision for the 1970–81 period.

While all data series were subject to revision, the underlying population adjustments caused significant changes to only those series that measured levels or counts. Labor force series which are expressed in terms of percentages—such as the unemployment rate, the participation rate, and the employment-population ratio—were largely unaffected by the revision process. This is because the population adjustments generally had the same proportionate effect on the numerator and the denominator used to derive the percentage. Small changes occurred because of rounding differences and where

Table 1. Employment status of the noninstitutional population using 1970 and 1980 census based population estimates, 1970–81

Year	Civilian labor force		Employed		Unemployed		Unemployment rate	
	1970 based	1980 based	1970 based	1980 based	1970 based	1980 based	1970 based	1980 based
1970	82,715	82,771	78,627	78,678	4,088	4,093	4.9	4.9
1971	84,113	84,382	79,120	79,367	4,993	5,016	5.9	5.9
1972	86,542	87,034	81,702	82,153	4,840	4,882	5.6	5.6
1973	88,714	89,429	84,409	85,064	4,304	4,365	4.9	4.9
1974	91,011	91,949	85,935	86,794	5,076	5,156	5.6	5.6
1975	92,613	93,775	84,783	85,846	7,830	7,929	8.5	8.5
1976	94,773	96,158	87,485	88,752	7,288	7,406	7.7	7.7
1977	97,401	99,009	90,546	92,017	6,855	6,991	7.0	7.1
1978	100,420	102,251	94,373	96,048	6,047	6,202	6.0	6.1
1979	102,908	104,962	96,945	98,824	5,963	6,137	5.8	5.8
1980	104,719	106,940	97,270	99,303	7,448	7,637	7.1	7.1
1981	106,393	108,670	98,313	100,397	8,080	8,273	7.6	7.6

changes in the demographic composition of a group affected larger aggregates.

Revised labor force growth

Compared with the data as originally published, the revised data indicate, of course, a faster pace of labor force growth over the past decade. According to originally published data, the labor force grew by 24 million, or 29 percent, during the 1970–81 period; as revised, the increase was 26 million, or 31 percent. (See table 2.) In terms of employment levels, the comparable rates of growth were 25 percent prior to revision and 28 percent afterwards.

The adjustment was not evenly distributed among the various demographic groups. The 1970–81 labor force growth for men was revised upward by more than 10 percent for every age group through 44 years, but the revised labor force levels were actually lower for men 45 to 54 years of age. Women showed smaller increases until the older age categories, where there were very large changes for 55- to 64-year-olds (31 percent) and those 65 and over (18 percent). In general, the share of workers accounted for by persons under 35 years of age increased with the revised data.

Because of the adjustment methodology, these revised growth patterns are a direct result of the patterns of labor force revisions. Labor force estimates for 1981 are, on average, 2.1 percent higher using the 1980 census-based population estimates. About 70 percent of the 2.3 million increase occurred among persons 20 to 34 years of age, whose "corrected" labor force size was 3.7 percent higher than originally estimated. (See table 3.)

Under the revised system, the number of black workers was 2.6 percent higher in 1981 and the age distribution of the incremental increase was even more skewed toward those under age 35. Unlike the situation for whites, for whom the increments for men and women were about the same, the overall increase in the black labor force was higher for women. Furthermore, the age patterns by sex are quite different. The upward revisions in the black male labor force occurred entirely among persons under 45 years of age. For black women, the gains were spread more widely throughout the age spectrum. This is based upon the fact that, according to the 1980 census findings, the population of black men under age 45, as brought forward from the 1970 census, had been underestimated; black women had also been underestimated but to a lesser degree than these black men. The large differences in the population estimates of black men under age 45 are apparently the result of substantial improvements in the completeness of coverage for this group in the 1980 census. Among black women, the improvements in census coverage in 1980 were more evenly distributed across the various age groups.[5]

The effect of the revision in CPS data was particularly sharp for persons of Hispanic origin.[6] The overall increase in their population estimate was 3.8 percent, about twice the adjustment for whites. The labor force adjustment was not very different for men and women of Hispanic origin, and there was no particular pattern to the adjustments by age. The largest increase occurred among those 20 to 34 years of age, but increases for persons 55 years and older were also larger than average. Within the Hispanic population, adjustments were largest for persons of Cuban origin and smallest for persons of Puerto Rican origin.

Table 2. Civilian labor force growth, by age and sex, between 1970 and 1981 using 1970 and 1980 census based population estimates

[Numbers in thousands]

Age	Total			Men			Women		
	1970 base	1980 base	Percent change	1970 base	1980 base	Percent change	1970 base	1980 base	Percent change
Total, 16 years and over	23,678	25,899	9.4	9,438	10,746	13.9	14,240	15,153	6.4
16 to 19 years	1,601	1,730	8.6	682	760	12.8	919	970	5.5
20 to 24 years	4,961	5,502	10.9	2,611	2,931	12.3	2,350	2,571	9.4
25 to 34 years	12,297	13,356	8.6	5,506	6,152	11.7	6,789	7,204	6.1
35 to 44 years	4,538	4,774	5.2	1,486	1,697	14.2	3,052	3,077	0.8
45 to 54 years	37	21	—	501	–549	–9.6	538	569	5.8
55 to 64 years	457	686	—	–34	44	—	491	642	30.8
65 years and over	–212	–180	15.1	–314	–299	4.8	102	120	17.6

Table 3. Civilian noninstitutional population and civilian labor force by age, sex, race, and Hispanic origin, using 1970 and 1980 census based population estimates, 1981 annual averages

[Numbers in thousands]

Characteristic	Total			Men			Women		
	1970 base	1980 base	Net difference	1970 base	1980 base	Net difference	1970 base	1980 base	Net difference
All persons									
Population, 16 years and over	166,436	170,130	3,694	78,769	80,511	1,742	87,667	89,619	1,952
16 to 19 years	15,905	16,214	309	7,921	8,093	172	7,984	8,121	137
20 to 24 years	20,081	20,820	739	9,717	10,116	399	10,365	10,705	340
25 to 34 years	36,434	37,777	1,343	17,717	18,427	710	18,717	19,350	633
35 to 44 years	26,021	26,291	270	12,527	12,758	231	13,493	13,533	40
45 to 54 years	22,412	22,422	10	10,848	10,797	−51	11,563	11,625	62
55 to 64 years	21,204	21,756	552	10,013	10,151	138	11,191	11,605	414
65 years and over	24,380	24,850	470	10,027	10,170	143	14,353	14,680	327
Labor force, 16 years and over	106,393	108,670	2,277	60,633	61,974	1,341	45,760	46,696	936
16 to 19 years	8,848	8,988	140	4,688	4,777	89	4,160	4,211	51
20 to 24 years	15,543	16,099	556	8,320	8,648	328	7,224	7,451	227
25 to 34 years	29,306	30,392	1,086	16,819	17,479	660	12,487	12,912	425
35 to 44 years	20,969	21,211	242	11,950	12,166	216	9,019	9,045	26
45 to 54 years	16,985	16,970	−15	9,916	9,868	−48	7,069	7,101	32
55 to 64 years	11,734	11,969	235	7,090	7,170	80	4,644	4,799	155
65 years and over	3,008	3,042	34	1,850	1,868	18	1,158	1,176	18
White									
Population, 16 years and over	145,379	147,908	2,529	69,311	70,480	1,169	76,068	77,428	1,360
16 to 19 years	13,347	13,516	169	6,676	6,764	88	6,671	6,752	81
20 to 24 years	17,137	17,609	472	8,399	8,644	245	8,737	8,965	228
25 to 34 years	31,473	32,367	894	15,524	16,005	481	15,949	16,362	413
35 to 44 years	22,732	22,778	46	11,089	11,171	82	11,643	11,606	−37
45 to 54 years	19,661	19,666	5	9,587	9,560	−27	10,074	10,106	32
55 to 64 years	19,032	19,485	453	9,021	9,139	118	10,010	10,346	336
65 years and over	21,998	22,487	489	9,015	9,195	180	12,983	13,292	309
Labor force, 16 years and over	93,586	95,052	1,466	54,027	54,895	868	39,559	40,157	598
16 to 19 years	7,881	7,962	81	4,174	4,224	50	3,707	3,739	32
20 to 24 years	13,549	13,926	377	7,304	7,521	217	6,245	6,406	161
25 to 34 years	25,470	26,208	738	14,881	15,340	459	10,589	10,868	279
35 to 44 years	18,390	18,445	55	10,661	10,740	79	7,730	7,704	−26
45 to 54 years	15,008	14,993	−15	8,865	8,836	−29	6,143	6,157	14
55 to 64 years	10,577	10,764	187	6,463	6,530	67	4,114	4,235	121
65 years and over	2,711	2,753	42	1,680	1,704	24	1,031	1,049	18
Black									
Population, 16 years and over	17,808	18,219	411	7,977	8,117	140	9,831	10,102	271
16 to 19 years	2,227	2,288	61	1,078	1,110	32	1,149	1,178	29
20 to 24 years	2,499	2,642	143	1,108	1,189	81	1,391	1,453	62
25 to 34 years	4,073	4,290	217	1,800	1,914	114	2,272	2,376	104
35 to 44 years	2,755	2,758	3	1,213	1,223	10	1,542	1,534	−8
45 to 54 years	2,308	2,260	−48	1,068	1,003	−65	1,240	1,257	17
55 to 64 years	1,887	1,913	26	860	844	−16	1,028	1,069	41
65 years and over	2,060	2,069	9	851	834	−17	1,209	1,234	25
Labor force, 16 years and over	10,810	11,086	276	5,559	5,684	125	5,251	5,401	150
16 to 19 years	834	862	28	444	462	18	390	400	11
20 to 24 years	1,724	1,828	104	876	941	65	847	888	41
25 to 34 years	3,189	3,365	176	1,601	1,702	101	1,588	1,663	75
35 to 44 years	2,158	2,164	6	1,083	1,093	10	1,075	1,071	−4
45 to 54 years	1,651	1,608	−43	882	829	−53	769	779	10
55 to 64 years	1,000	1,009	9	535	524	−11	465	485	20
65 years and over	254	249	−5	138	134	−4	117	115	−2
Hispanic origin									
Population, 16 years and over	8,970	9,310	340	4,341	4,511	170	4,629	4,798	169
16 to 19 years	1,139	1,176	37	578	597	19	561	579	18
20 to 24 years	1,410	1,478	68	709	743	34	702	735	33
25 to 34 years	2,412	2,527	115	1,168	1,228	60	1,244	1,299	55
35 to 44 years	1,562	1,597	35	737	758	21	826	839	13
45 to 54 years	1,127	1,149	22	537	546	9	590	603	13
55 to 64 years	740	774	34	352	364	12	388	411	23
65 years and over	580	608	28	262	275	13	317	333	16
Labor force, 16 years and over	5,750	5,972	222	3,505	3,644	139	2,245	2,328	83
16 to 19 years	527	545	18	312	323	11	215	222	7
20 to 24 years	1,048	1,100	52	630	662	32	418	438	21
25 to 34 years	1,794	1,884	90	1,098	1,155	57	696	729	33
35 to 44 years	1,147	1,175	28	684	704	20	463	471	8
45 to 54 years	796	812	16	486	495	9	310	317	7
55 to 64 years	372	387	15	247	255	8	125	132	7

Data for *all* published race and ethnic groups are available only since 1973. During the 1973–81 period, the fastest labor force growth was registered for Hispanics, whose population grew dramatically over the period. Based on revised data, the labor force increase was 63 percent during the 8-year period; prior to revision, the growth was estimated to be 60 percent. Despite the sharp increase, the Hispanic share of the total labor force only moved from 4 to 5.5 percent over the period, using either revised or unrevised data.

The black labor force grew faster than the white, but not nearly as fast as the Hispanic labor force. Revisions raised black labor force growth from 22 to 23 percent between 1973 and 1981. Over the same period, white labor force growth had been 19 percent prior to revision and 20 percent subsequently. □

FOOTNOTES

[1] The most comprehensive discussion of the estimation procedure is included in *The Current Population Survey: Design and Methodology*, Technical Paper 40 (Bureau of the Census, 1977), ch. 5. A summary description is included in the Explanatory Notes of each issue of *Employment and Earnings*, published monthly by the Bureau of Labor Statistics.

[2] For an explanation of the procedures used following the 1970 census, see Gary M. Shapiro and Marvin M. Thompson, "Revisions in Current Population Survey," *Employment and Earnings*, February 1972, pp. 6–9.

[3] For a more technical description of the procedures in this adjustment process, see Kenneth D. Buckley, Jennifer Marks, and Ronald J. Statt, "Revisions in the Current Population Survey Beginning in January 1982," *Employment and Earnings*, February 1982, pp. 7–15.

[4] For the first 1980 census coverage study, see Jeffrey S. Passel, Jacob S. Siegel, and J. Gregory Robinson, "Coverage of the National Population in the 1980 Census by Age, Sex, and Race: Preliminary Estimates by Demographic Analysis," *Current Population Reports*, Series P-23, No. 115 (Bureau of the Census, March 1982).

[5] Ibid.

[6] It should be noted that the estimates of the Hispanic origin population are not based on independently developed controls specifically for this group. Rather, they arise from the weighting process as a result of individual responses to a question on ethnic origin and the age-sex-race estimates.

Family Budgets

Final report on family budgets: cost increases slowed, autumn 1981

Rising personal income taxes, social security deductions, transportation, and homeowner costs contributed to the increases in the three hypothetical budgets for a four-person family. In autumn 1981, the United States urban average budget costs were $15,323 at the lower level, $25,407 at the intermediate level, and $38,060 at the higher level (table 1). From autumn 1980 to autumn 1981, the lower budget rose 9.1 percent, the intermediate, 9.8 percent, and the higher, 10.6 percent (table 2). The increases in 1981 were approximately 3 percentage points less than those in 1980, reflecting smaller increases in food and personal income taxes.

This report is the final release of the urban four-person family budget data. The expenditure data on which the budgets are based are now 20 years old and continuation of the program would require a revision of concepts, more current expenditure data, and extensive collection of price data, for which funding was not available. Therefore, the program was eliminated in compliance with the recent overall budget reduction.

Consumption costs. Consumption costs rose by 7.3 percent at the lower level, and 7.5 percent at both the intermediate and higher levels between autumn 1980 and autumn 1981. Among consumption components, transportation costs showed the largest increases at all three levels. Transportation costs also rose sharply in the two previous years from autumn 1978 to autumn 1979 and from autumn 1979 to autumn 1980. Medical care costs also showed large increases from 1980 to 1981.

Table 1. Annual budgets for a four-person family at three levels of living, urban United States, autumn 1981

Component	Lower	Intermediate	Higher
Total budget	$15,323	$25,407	$38,060
Total family consumption	12,069	18,240	25,008
Food	4,545	5,843	7,466
Housing	2,817	5,546	8,423
Transportation	1,311	2,372	3,075
Clothing	937	1,330	1,947
Personal care	379	508	719
Medical care	1,436	1,443	1,505
Other family consumption	644	1,196	1,872
Other items	621	1,021	1,718
Social security and disability	1,036	1,703	1,983
Personal income taxes	1,596	4,443	9,340

Note: Because of rounding, sums of individual items may not equal totals.

Table 2. Percent change in four-person family budgets, autumn 1980 to autumn 1981

Component	Lower	Intermediate	Higher
Total budget	9.1	9.8	10.6
Total consumption less shelter	7.2	7.1	7.1
Total consumption	7.3	7.5	7.5
Food	5.2	4.9	4.9
Housing	8.0	8.6	8.7
Shelter[1]	7.9	8.8	8.7
Renter costs	7.9	7.9	7.9
Homeowner costs[2]	—	8.9	8.8
Housefurnishings and operations	8.2	8.2	8.1
Transportation	13.0	12.1	11.8
Clothing	3.3	3.2	3.1
Personal care	7.7	7.9	7.6
Medical care	10.6	10.7	10.7
Other family consumption	7.9	7.8	7.8
Other items	6.5	6.7	6.7
Social security	17.6	19.3	23.9
Personal income taxes	19.4	17.5	17.9

[1] Includes only rental housing in the lower budget.

[2] On the assumption that the home was purchased 6 years ago, these costs reflect changes in purchase prices and mortgage interest rates from 1974 to 1975 and changes in property taxes, insurance, fuels and utilities, and repairs and maintenance from 1980 to 1981.

Personal income taxes. The budgets include estimated 1981 Federal, State, and local tax payments. The large increases in taxes, approximately 19 percent at the lower level and 18 percent at both the intermediate and higher levels, are a result of increasing consumption costs and "bracket creep" under the Federal progressive tax system and that of many States. Although tax increases were quite large, they were approximately 10 percentage points less than in 1980 at the lower level and approximately 7 percentage points less at both the intermediate and higher levels. This was because of more moderate price increases for consumption items and the small, initial reduction in Federal income tax rates in 1981. While the percentage tax increase was highest for the lower budget, the effect of the increases was more pronounced at the intermediate and higher level because taxes constitute a proportionally larger share of these budgets.

Social security deductions. While Federal income tax increases were lower, social security deductions were higher in 1981. The employee payroll deduction rate was increased from 6.13 percent to 6.65 percent, and the earnings ceiling on contributions was raised from $25,900 to $29,700. As a result, deductions rose 18 percent at the lower level, 19 percent at the intermediate level, and 24 percent at the higher level.

Housing. Housing increased by 8.0 percent from autumn 1980 to autumn 1981 in the lower budget which includes only renter costs. Both renter and homeowner costs are included in the intermediate and higher budgets and these costs rose by 8.6 and 8.7 percent, respectively. For the homeowner component, large increases in fuel and utilities were offset somewhat by modest increases in mortgage interest costs.

Description of the budgets. The family budgets represent the costs of three hypothetical lists of goods and ser-

Table 3. Indexes of comparative costs based on an intermediate budget for a four-person family,[1] autumn 1981

[U.S. urban average costs = 100]

Area	Total budget	Cost of family consumption: Total consumption	Food: Total	Food: Food at home	Housing: Total[2]	Housing: Renter[3]	Housing: Homeowner[4]	Transportation[5]: Total	Transportation[5]: Automobile owners	Clothing	Personal care	Medical care[6]	Other family consumption[7]	Personal income taxes
Urban United States	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Metropolitan areas[8]	102	102	101	100	102	104	103	100	102	100	102	103	103	104
Nonmetropolitan areas[9]	91	93	94	98	91	82	87	98	94	98	93	88	85	84
Northeast:														
Boston, Mass.	115	112	101	103	127	119	137	117	132	109	100	91	111	131
Buffalo, N.Y.	104	101	101	103	99	93	100	106	101	120	96	80	102	120
New York-Northeastern N.J.	116	109	113	110	121	110	131	91	103	89	102	100	109	148
Philadelphia, Pa.-N.J.	105	102	112	107	101	86	106	98	111	71	90	106	102	115
Pittsburgh, Pa.	97	97	103	103	89	83	87	105	104	95	96	91	101	97
Nonmetropolitan areas[9]	102	101	99	102	109	90	116	105	100	105	88	87	86	105
North Central:														
Chicago, Ill.-Northwestern Ind.	100	102	99	100	101	105	103	105	118	90	98	109	117	92
Cincinnati, Ohio-Ky.-Ind.	100	100	102	103	97	81	101	97	93	121	92	96	98	101
Cleveland, Ohio	101	102	100	98	100	84	107	99	98	110	120	100	106	97
Detroit, Mich.	99	99	101	101	101	93	106	96	95	90	106	101	97	99
Kansas City, Mo.-Kans.	97	98	98	99	89	88	88	104	99	107	119	99	102	92
Milwaukee, Wis.	106	102	97	95	106	99	111	102	97	114	106	97	103	122
Minneapolis-St. Paul, Minn.	102	97	96	95	96	103	95	99	94	102	106	87	104	121
St. Louis, Mo.-Ill.	96	98	104	105	90	86	88	103	103	95	106	91	96	91
Nonmetropolitan areas[9]	91	93	83	97	92	96	88	96	91	107	98	83	88	83
South:														
Atlanta, Ga.	92	93	96	95	82	82	76	97	93	112	99	90	101	85
Baltimore, Md.	96	97	95	92	99	112	89	97	96	97	97	93	102	106
Dallas, Tex.	89	95	95	92	86	99	82	103	98	93	99	113	96	65
Houston, Tex.	93	98	100	96	87	86	84	99	94	113	117	117	95	70
Washington, D.C.-Md.-Va.	106	103	102	103	106	117	103	99	98	102	111	102	110	127
Nonmetropolitan areas[9]	86	86	93	97	83	68	75	97	93	87	90	89	83	71
West:														
Denver, Colo.	98	99	94	93	97	90	93	102	97	129	99	92	101	92
Los Angeles-Long Beach, Calif.	98	100	98	95	98	125	94	104	103	94	100	130	89	89
San Diego, Calif.	96	99	95	91	98	105	100	101	96	96	98	122	102	87
San Francisco-Oakland, Calif.	107	107	101	100	109	153	101	107	107	110	118	116	102	105
Seattle-Everett, Wash.	102	106	101	99	109	140	102	103	98	112	120	113	109	83
Honolulu, Hawaii	126	118	131	137	117	146	112	102	97	107	116	110	115	162
Nonmetropolitan areas[9]	96	95	94	97	92	95	86	95	91	115	104	95	87	100
Anchorage, Alaska	126	127	113	116	142	189	122	124	119	116	137	160	100	124

[1] The family consists of an employed husband age 38, a wife not employed outside the home, an 8-year-old girl, and a 13-year-old boy.

[2] Housing includes shelter, housefurnishings, and household operations.

[3] Renter costs include average contract rent plus the cost of required amounts of heating fuel, gas, electricity, water, specified equipment, and insurance on household contents.

[4] Homeowner costs include interest and principal payments plus taxes, insurance on house and contents, water, refuse disposal, heating fuel, gas, electricity, specified equipment, and home repairs and maintenance cost.

[5] The average costs of automobile owners and nonowners in the intermediate budget were weighted by the following proportions of families: Boston, New York, Chicago, and Philadelphia 80 percent for owners, 20 percent for nonowners; Baltimore, Cleveland, Detroit, Los Angeles, Pittsburgh, San Francisco, St. Louis, and Washington, D.C., with populations of 1.4 million or more in 1960, 95 percent for automobile owners and 5 percent for nonowners; all other areas, 100 percent for automobile owners.

[6] In total medical care, the average costs of medical insurance were weighted by the following proportions: 30 percent for families paying full cost of insurance; 26 percent for families paying half costs; 44 percent for families covered by noncontributory insurance plans (paid by employer).

[7] Other family consumption includes average costs for reading, recreation, tobacco products, alcoholic beverages, education, and miscellaneous expenditures.

[8] As defined in 1960-61. For a detailed description of these and previous geographical boundaries, see the 1967 edition of *Standard Metropolitan Statistical Areas*, prepared by the Office of Management and Budget.

[9] Places with population of 2,500 to 50,000; data for some previously shown are no longer available.

vices that were specified in the mid-1960's to portray three relative standards of living—described as lower, intermediate, and higher. These budgets are for a precisely defined urban family of four: a 38-year-old husband employed full time, a wife not employed outside the home, a boy age 13, and a girl age 8. Average inventories of clothing, housefurnishings, major durables, and other equipment are included for each budget level. The budgets pertain only to an urban family with these specified characteristics; no budgets are available for rural families. Also, the budgets are not intended to represent a minimum level of adequate income or a subsistence level of living, nor do they indicate how families do or should spend their money.

The 1981 consumption budgets were estimated by applying price changes for individual areas from autumn 1980 to autumn 1981, as reported in the Consumer Price Index for Urban Wage Earners and Clerical Workers, to the appropriate autumn 1980 budget costs for each main class of goods and services. □

Is the compressed workweek too compressed?

The compressed workweek, usually involving 4 working days with Friday or Monday off, is something of a misnomer in that it also means an elongated workday of 10 hours. There has been more experience with this concept in the United States; European workers, on the other hand, have shown little interest.

The compressed workweek was developed in the United States in the late 1960's, and has been tried mainly by smaller, nonunion employers. Acceptance has not been overwhelming, having leveled off at about 2 percent of the labor force, according to the Bureau of Labor Statistics. The failure rate of the compressed workweek is quite high, in sharp contrast to flexitime experiments. Many companies seem to have tried it; yet every survey shows a high percentage soon reverting to the 5-day week.

—"Innovations in Working
Patterns," *Transatlantic
Perspectives*, January 1981,
p. 29.

Research Summaries

Native Americans in the labor force: hunting for an accurate measure

JUDITH KLEINFELD AND JOHN A. KRUSE

The concepts used nationally to assess labor force participation are considered to be inappropriate for Native American population groups. The fundamental issue concerns the measurement of unemployment. The Current Population Survey (CPS) defines an unemployed person as someone who has no employment, is available for work, and has engaged in some specific jobseeking activity within the past 4 weeks. As the American Indian Policy Review Commission points out, in many Indian reservations and isolated Native villages, few jobs are available.[1] In these small communities the informal communications network provides excellent information on new employment opportunities. Many Indian and Eskimo adults do not actively seek work in the conventional sense because they are well aware that no work is available. To exclude these individuals from the labor force results in a serious underestimation of Native American unemployment and the available labor pool. Moreover, this problem is not merely a technical issue of measurement. Federal and State funds are allocated to regions on the basis of such employment statistics.

While the knowledge that no jobs exist may cause significant members of Native Americans not to be counted as members of the labor force, there is also evidence to suggest that many Native Americans in fact drop out of the labor force intermittently in order to meet community and family obligations, or to pursue other activities such as hunting and fishing. For example, Harland Padfield and John van Willigen carefully studied the activity patterns of a sample of 300 Papago men.[2] They found that 15 percent were "voluntarily idle" in midsummer.

Attitude surveys also suggest substantial variability in Native Americans' work schedule preferences. According to some surveys, the majority of Indians and Eskimos prefer long-term jobs, suggesting that it is teachers and employers who incorrectly overestimate preferences for seasonal work.[3] However, these studies, as well as other research, suggest considerable variability in preferences for year-round and part-year wage work, not only among different Native American population groups but also among individuals in the same group.[4] Therefore, the measurement problems associated with unemployment among Native Americans are not limited to the discouraged worker effect; they also stem from real desires not to work for wages during part of the year.

To overcome these problems, agencies and researchers concerned with Native American populations have used a variety of alternative concepts and measurement approaches to assess unemployment. The Bureau of Indian Affairs, for example, considers any Native adult who does not hold a wage job to be "unemployed." Agency personnel roughly estimate unemployment in some rural Native communities and reservations to be as high as 50 to 80 percent. The American Indian Policy Review Commission, suspecting that census figures underestimate and Bureau of Indian Affairs figures overestimate Native American unemployment, suggested that the 1980 census questions on unemployment should be adapted to the situation of American Indians.[5] The Commission recommended that Indians be asked, "When job opportunities occur, do you seek them?"

The 1980 Census Supplementary Questionnaire for Indians, however, did not follow this recommendation. The question on unemployment asks, "Of the weeks not worked in 1979, how many weeks was this person actively looking for work or on layoff from a job?" Previous questions ask how many weeks the person worked in 1979 and the main reason the person worked fewer than 50 weeks. However, respondents have no socially acceptable way of indicating that they prefer a lifestyle combining intermittent participation in the wage economy with non-wage activities, such as subsistence hunting and fishing. Such a response would be placed in the category "did not want work," which has negative connotations, particularly for men without obvious home responsibilities.

Without information on the size of the intermittent worker effect, statistics on Indian and Eskimo employ-

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ment patterns are difficult to interpret. For example, Benjamin Taylor and Dennis O'Connor, in a study of five Indian reservations in the Southwest, point out that "seasonal or irregular work characterizes a significant part of reservation labor, ranging from 27 percent of the working-age Zaguna tribe to 55 percent of the Fort Apaches over 16 years of age."[6] However, it is not clear to what extent these patterns are the result of personal preference and to what extent they are caused by lack of jobs and requisite skills.

Alaskan research

This paper discusses three Alaskan studies concerned with measuring unemployment in Native American groups. These studies suggest the importance of both a "discouraged worker" and an "intermittent worker" effect in understanding Native American employment patterns. Standard national definitions of unemployment substantially underestimate the proportion of Natives who want work and are available for work. However, our research also suggests that average labor force participation rates, at least among men, may remain substantially below national norms even when high-paying jobs at a variety of skill levels are available.

The first study was conducted in January 1977.[7] The Alaska Legislature, believing that official employment statistics seriously understate unemployment in rural Native communities, directed the State Department of Labor to survey "real" unemployment in the Lower Yukon-Kuskokwim Region. Income levels in the Eskimo communities in this isolated area are among the lowest in Alaska, and job opportunities are extremely limited. Of available jobs, 44 percent are in government. However, the region also has a strong noncash economy based on subsistence fishing and hunting. In addition, commercial fishing, trapping, and crafts are important sources of cash income, although no statistics are available on employment in these occupations.

Bilingual Eskimos interviewed 86 percent of the working-age adult population (1,412 respondents) in nine villages. They used a one-page form patterned on the CPS. As in the CPS, one set of questions classified individuals as "unemployed" if they were not working and had "been looking for work during the past four weeks." However, the villagers were also asked about desire for work. "Does the person want a regular job now, either full or part-time?" Under the conventional CPS definition, the unemployment rate in January 1977 was 24 percent. Under the broader definition, it was 48.8 percent.

While national surveys also yield higher jobless rates when "discouraged workers" are included, these results support the view that unemployment among Natives is seriously underestimated. However, the specific survey question used has some limitations.

First, there is the problem of respondents presenting themselves to an interviewer in a favorable light. Village Eskimos in remote communities are well aware of the majority culture's work ethic, whether or not they personally subscribe to it. Without an obviously acceptable reason, such as child care responsibilities or poor health, they might have been reluctant to tell the interviewer that they did not want to work at the time of the survey.

Second, the question does not cover desired duration of employment. In another household survey, which included some of the same communities, most of the 344 respondents indicated that they preferred to work only certain months of the year. Those who wanted part-year work generally did not want to be employed in the spring or fall, seasons of intense subsistence activity.[8] Indeed, some Eskimos may view wage work as a secondary activity, a means to supplement hunting and fishing. Thus, asking whether the individual wants a "regular" job may miss a critical cultural difference in labor force behavior.

North Slope boom

In the second study, funded by the National Science Foundation, we examined the response of the Inupiat to the new high paying job opportunities on the North Slope in 1977.[9] A previous study of Native employment directly associated with the trans-Alaska pipeline project found that many Natives had worked for only 8 weeks or less despite the high pay.[10] During informal interviews, Native respondents cited work camps located away from home, the heavy 10-hour, 7-day workweek, bigotry against Natives by white coworkers, and alleged poor use of Native workers by the companies, as disincentives to longer employment tenure.[11]

On the North Slope, however, oil and gas development created a situation which eliminated or modified many of these perceived barriers to long-term employment. The jobs resulted not so much from direct oilfield activities at Prudhoe Bay as from the formation of an Inupiat government, the North Slope Borough, in 1972. The borough, encompassing eight Inupiat villages and a population of about 4,000, levied property taxes on the Prudhoe Bay oil complex. Revenues grew from less than $1 million in 1973 to about $57 million in 1977. The borough transformed these tax revenues into jobs adapted to contemporary Inupiat lifestyles. It launched a $511 million capital improvements program, which resulted in large numbers of skilled and unskilled construction jobs. Borough government and school district operations also employed large numbers of white-collar workers. By 1977, the borough alone employed about 800 workers in administration, education, and construction.

The government established a strong local hire program and was willing to absorb substantial cost overruns to employ local Inupiat. To minimize conflicts between wage work and subsistence, the borough granted leaves of absence for subsistence activities and was tolerant of absenteeism. It paid high wages, with construction pay matching the wage scales established during the building of the trans-Alaska pipeline. The average wage of Inupiat adults in 1977 was almost $500 per week, and about 25 percent received paychecks of $800 or more. Yet, borough jobs did not require workers to leave home, give up subsistence activities, cope with bigotry, or deal with an uncomfortable, non-Native environment.

The borough did not succeed in making jobs available to all Inupiat adults in each of the eight villages during the entire year. However, in certain situations, such as in Barrow (the large regional center), jobs were readily available to anyone who wanted wage work during the summer construction season.

The North Slope study examined the question—under these unusually favorable labor market conditions did the labor force participation rate of Inupiat men and women approach national norms? Or did special cultural factors result in lower labor force participation despite the availability of good jobs and the presence of loosely structured work rules?

Inupiat interviewers conducted a household survey in Barrow and five smaller communities in late 1977. We had randomly selected one adult from each village household and one adult from a 50-percent sample of Barrow households. The final sample consisted of 290 persons, 75 percent of the adults contacted, and represented 21 percent of the adult population. In our labor force analysis, we excluded persons age 16 to 18 and 55 and older so that cultural differences in school attendance and retirement ages would not affect comparisons with national labor force patterns.

Those interviewed were asked for a work history from October 1976 to September 1977. Persons who did not hold any paying job during the year were asked whether there were special reasons that prevented them from working. To measure monthly unemployment the survey asked, "Were there months between October 1976 and September 1977 when you wanted a job and didn't have one? (If yes) What months were they?" This measure of unemployment was, of course, a broad definition, which counted a person as "unemployed" if he or she stated a desire for wage work regardless of specific jobseeking activity.

In analyzing the data, it quickly became apparent that many Inupiat did not say they wanted wage work during all the months they did not work. Some were nonwage earners, whose family responsibilities or health problems prevented them from taking employment. However, many were intermittent workers who worked at wage jobs part of the year. In addition, when asked about work schedule preferences, slightly more than half of both men and women said they wanted some form of part-year work.

This preference for part-year work was even stronger among North Slope Inupiat high school students, particularly male students.[12] In this small survey, our question on work preferences contained a socially acceptable alternative to year-round wage work ("After you have finished your schooling, do you want a year-round job or to work only part of the year so you can hunt and fish a lot, or don't you want a job?"). None of the students stated they didn't want a wage job at all. However, of the 75 male students, 69 percent preferred a part-year job compared to 41 percent of the 99 female students.

When we measured annual average labor force participation,[13] Inupiat adult women approached national norms, particularly the young women. However, Inupiat male labor force participation at all ages was far below national norms.

The major reason for the lower male labor force participation was that most men were blue-collar workers. When particular construction projects ended in their villages, they were laid off. Substantial layoffs occurred in the winter of 1976–77, when the borough cut back on its construction program because of financing difficulties. However, intensive construction work resumed in the summer of 1977. This increase in job opportunities led to a dramatic increase in male labor force participation, which rose from a low of 47 percent in November 1976 to a high of 74 percent in September 1977.

Yet even when good job opportunities were abundant, Inupiat male labor force participation remained well below national norms. In Barrow, for example, labor force participation of Inupiat men age 18–55 peaked at only 76 percent in the summer of 1977. Of the 24 percent who were not in the labor force, just 10 percent were nonwage earners and most of these had health problems. The remainder were intermittent workers who chose not to work during the month.

In short, the North Slope study suggests that the major factor influencing Native American labor force participation is indeed the availability of good jobs. Yet, even under highly favorable circumstances, cultural preferences result in labor force participation rates below national norms, at least among men.

Although our North Slope research results suggested that the number of intermittent workers is significant, we could not precisely measure the number of such workers. We had asked retrospectively what months individuals were without work but wanted it. However, people may have forgotten specific months. We attempted to remedy this problem in a subsequent study by including a question which asked explicitly whether individuals did not want work in particular months.

Regional surveys

In 1979, we cooperated with several Federal and State agencies to conduct a broad survey of recreation, employment, and other community issues in randomly sampled households in the Interior, Southcentral, and Southeast regions of Alaska. Each regional survey included the urban center, surrounding small Native and other communities, and rural Native villages. The Native sample consisted of 335 respondents representing Eskimo, Aleut, Athabascan, and Tlingit cultural groups.[14]

The survey questions concerning employment were essentially the same as in the North Slope study. However, in addition to asking each respondent which months during the previous year "did you want a job but did not have one," respondents were also asked, "Which, if any, months between April 1978 and March 1979 did you decide not to work?" Thus, the decision to withdraw temporarily from the labor force was measured directly rather than being inferred as a residual category.

The results show that rural Natives specifically did not want to work during an average of 1.4 months of the year. The particular months specified varied by region. In the Interior, peak withdrawal occurred in August (17 percent); in Southcentral, the peak was in October (9 percent); and in Southeast, it was January through March (8 percent). However, even with these explicit answers, there remained a large residual of Natives who were not working at wage jobs and who stated neither that they wanted work nor that they did not want work in a particular month. This residual ranged from 12 percent in the Interior to 8 percent in Southcentral Alaska. If we assume this group would take work if jobs were available, 29 percent in Interior, 18 percent in Southcentral, and 24 percent in Southeast were unemployed. If we assume this group was not interested in wage work, although reluctant to say so, unemployment rates would drop to 17 percent in the Interior, 10 percent in Southcentral, and 13 percent in Southeast. The use of these series of questions to estimate annual average unemployment results in a bracket around the "true" proportion of Native American unemployment. Whichever estimate is used, it is obvious that serious levels of unemployment exist in these regions.

Thus, even by providing a means for respondents to differentiate between unemployment and temporary withdrawal from the work force, our estimate of unemployment remains imprecise. However, in these Native American population groups the nature of unemployment itself is imprecise. Some adults shift in and out of wage work depending on job availability, immediate need for cash, and what other options exist at the time. It is, of course, possible to develop a series of questions which unambiguously assigns adults to a labor force category each month. Indeed, in an exploratory study, we attempted to ask Native respondents about their activities in the wage and nonwage sectors and whether they wanted employment on a month-by-month basis. This measurement approach, however, worked badly. Native adults resented and resisted having their activities categorized in these ways. Such a survey approach was perceived as too intrusive. It made too obvious the number of months adults were not engaged in some "productive" activity by majority culture definitions.

Conclusions

Taken together, these studies confirm that the standard definition of unemployment results in a serious underestimation of the number of Native Americans who want wage work. The availability of local employment opportunities, or the lack of them, are well known and largely determine whether individuals actively look for work. At the same time, these studies suggest that significant numbers of Native Americans chose to work intermittently in the wage economy, although the proportion of such worker is likely to vary among cultural groups. Both the "discouraged worker" effect and the "intermittent worker" effect makes it quite difficult to measure Native American labor force participation.

We can offer no simple solution to the problem of how to measure unemployment in Native American population groups heavily involved in a nonwage as well as a cash economy. Two general points emerge from our analyses:

- Questions designed to measure unemployment among transitional Native groups should present a choice between wage work and socially prestigious alternatives in the local cultural situation. Native Americans are aware of the majority culture work ethic and can be reluctant to indicate that they are not employed and do not want wage work.
- Studies of Native American labor force patterns should recognize the possibility of preferences for part-year versus year-round work (in addition to part-time versus full-time jobs) and should include questions to assess during how much of the year and at which times individuals want wage work.

The specific measurement approach we have developed (asking adults which months they were employed, which months they wanted work, and which months they did not want work) results in a range, rather than a single estimate, of unemployment. About 10 percent of Native adults who are not working in particular months do not place themselves in the alternative work-do not want work categories. This ambiguity, however, may reflect the actual vagueness of unemployment among individuals who maintain a lifestyle combining economic activity in both the modern and traditional sectors in the context of extended families who provide mutual economic support. It is perhaps unrealistic to expect that precise answers to questions on unemployment can be found in this cultural context. □

— FOOTNOTES —

[1] Mary Ellen Ayres, "Federal Indian policy and labor statistics—a review essay," *Monthly Labor Review*, April 1978, pp. 22–27.

[2] Harland Padfield and John van Willigen, "Work and income patterns in a transitional population: the Papago of Arizona," *Human Organization*, March 1969.

[3] Derek G. Smith, *Occupational Preferences of Northern Students* (Ottawa, Canada: Northern Economic Development Branch, 1974); and *Native People's Perceptions of Factors Associated with Job Acceptance and Retention* (Ottawa: Department of Indian Affairs and Northern Development, Northern Affairs Branch, 1974).

[4] Note the differences in preferences for year-round work expressed in a survey of diverse Alaska Native population groups in Alaska Department of Transportation and Public Facilities, *Western and Arctic Alaska Transportation Study*, August 1980.

[5] "Federal Indian policy . . . ," p. 25.

[6] Benjamin J. Taylor and Dennis J. O'Connor, *Indian Manpower Resources in the Southwest: A Pilot Study* (Arizona State University, 1969), p. 354.

[7] Rod Brown, Jeff Hadland, Scott Hannigan, and Stanley D. Burrows, *Lower Yukon-Kuskokwim Region Labor Market Analysis* (Alaska Department of Labor, 1981).

[8] *Western and Arctic Alaska Transportation Study*.

[9] Judith Kleinfeld, Jack Kruse, and Robert Travis, *Different Paths of Inupiat Men and Women in the Wage Economy* (University of Alaska: Institute of Social and Economic Research, 1981).

[10] Larry L. Naylor and Lawrence A. Gooding, *Alaska Native Hire on the Trans-Alaska Oil Pipeline Project* (University of Alaska: Institute of Social and Economic Research, 1978).

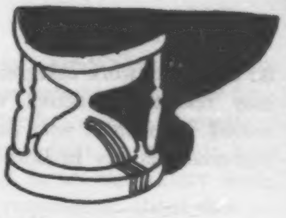
[11] Ibid.

[12] Judith Kleinfeld and Jack Kruse, *High School: Views of North Slope Borough Students* (University of Alaska: Institute of Social and Economic Research, 1977).

[13] We treated a respondent as being in the labor force in a given month if he or she held a job for 2 weeks or more during the month or wanted wage work during the month. Those who did not work at all during the year or did not mention that they wanted work during a month they were not working were treated as out of the labor force for that month.

[14] Alaska Public Survey, unpublished results (University of Alaska, Institute of Social and Economic Research, 1981).

Major Agreements Expiring Next Month



This list of collective bargaining agreements expiring in August is based on contracts on file in the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more.

Employer and location	Industry	Labor organization[1]	Number of workers
Alabama Dry Dock and Shipbuilding Co. (Mobile, Ala.)	Transportation equipment	Marine and Shipbuilding Workers	1,200
American Airlines, Ground Service (Interstate)[2]	Air transportation	Transport Workers	12,450
American Standard, Inc., Wabco Construction Equipment (Peoria, Ill.)	Machinery	Boilermakers	1,000
Associated General Contractors of America, Inc., Building Construction Agreement (Alabama)	Construction	Bricklayers; Carpenters; Laborers; Iron Workers; Engineers; Teamsters (Ind.)	8,000
Bowman Transportation, Inc. (Interstate)	Trucking	Steelworkers	2,100
Bucyrus-Erie Co. (Indiana, Pennsylvania, and Wisconsin)	Machinery	Steelworkers	2,000
Cluett, Peabody and Co., Inc., Arrow Co. Division (Interstate)	Apparel	Clothing and Textile Workers	4,600
Eagle Electric Manufacturing Co., Inc. and Eagle Plastics Corp. (New York)	Electrical products	Auto Workers (Ind.)	1,500
Flexsteel Industries, Inc. (Iowa, Pennsylvania, and Texas)	Furniture	Upholsterers	1,000
Gates Rubber Co. (Denver, Colo.)	Rubber	Rubber Workers	2,650
Goodyear Aerospace Corp. (Akron, Ohio)	Transportation equipment	Auto Workers (Ind.)	1,300
Illinois Food Retailers Association, Independent Food Stores	Retail trade	Food and Commercial Workers	4,350
Knitgoods Agreement (Ohio)[3]	Textile	Ladies's Garment Workers	1,050
New York Telephone Company	Communication	Telephone Traffic Union (New York) (Ind.)	8,300
Pittsburgh Forgings Co., Greenville Steel Car Co. (Pennsylvania)	Transportation equipment	Auto Workers (Ind.)	1,000
Publix Shirt Corp. (Interstate)	Apparel	Clothing and Textile Workers	1,000
Sun Harvest, Inc. (California)	Agricultural products	Farm Workers	1,350
Textron, Inc., Fafnir Bearing Division (New Britain, Conn.)	Machinery	Auto Workers (Ind.)	3,200
3M Company, Minnesota Mining and Manufacturing Co. Division (St. Paul, Minn.)	Stone, clay, and glass products	Oil, Chemical and Atomic Workers	1,850
	Government activity	Labor organization[1]	
California: Los Angeles County Building Trades and Skilled Craftsmen	Multidepartment	Los Angeles County Building and Construction Trades Council	1,350
Pennsylvania: Philadelphia Board of Education	Education	Teachers	18,000
Washington: Seattle Police Department	Public safety	Seattle Police Officers Guild (Ind.)	1,050

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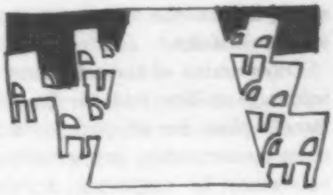
[1] Affiliated with AFL-CIO except where noted as independent (Ind.).
[2] Information is from newspaper reports.
[3] Industry area (group of companies signing same contract).

Developments in Industrial Relations



Goodrich pact sets pattern for industry

B.F. Goodrich Co. and the Rubber Workers negotiated a 3-year contract that set a pattern for settlements at Goodyear Tire & Rubber Co. and Firestone Tire & Rubber Co. The terms also affected employees of Uniroyal, Inc., who had earlier agreed to accept the same provisions as in the pattern-setting settlement, modified to the extent necessary to reduce the cost by $18.3 million a year. (See *Monthly Labor Review*, March 1982, p. 47.)

The Goodrich contract did not provide for any specified wage increases, but the employees will continue to receive quarterly automatic cost-of-living pay adjustments calculated at 1 cent an hour for each 0.26-point movement in the Consumer Price Index. The union said the formula would yield about $2.44 in wage increases during the contract term, assuming a 7-percent annual rise in the CPI.

Benefit improvements included a $1.50-increase in the pension rate, bringing it to $16.50 a month for each year of credited service; a $60-a-week increase in the sickness and accident benefit, bringing it to $185; and a 6-month increase in the 24-month period during which laid off employees retain their life and health insurance.

The contract calls for establishment of a medical surveillance program to attain early detection of job-related health problems. The program will be financed by a company payment of 2 cents an hour.

An Early Action Committee will be established to help avert plant closings. The parties also agreed that the Rubber Workers' president will consult with the company president on plant closings and other problems. The agreement applied to 6,700 Goodrich employees at five plants.

About 2,000 workers at the company's industrial products plant in Akron, Ohio accepted a smaller package in return for company assurance that the operation will continue for at least 3 more years. Goodrich also agreed to establish a profit-sharing plan for the workers.

The Akron employees will receive the same benefit improvements as those at the other plants but their pay was cut 27 cents an hour immediately, and will be cut an additional 27 cents in the second and third years if the facility continues to operate at a loss. Also they will not receive any cost-of-living pay adjustments during the entire term, regardless of operating results. Goodrich said that the plant, which once employed 11,000 people, has been losing $1 million a month for the last 2 years.

The Goodyear accord did not provide for a medical surveillance program. The Goodyear settlement covered 16,000 workers at 13 locations and the Firestone settlement covered 10,500 workers at 10 plants.

Harvester accord features profit-sharing plan

International Harvester Co.'s efforts to return to profitability were enhanced when the Auto Workers agreed to a new contract that a company official said, bears a "family resemblance" to the concessions negotiated by General Motors Corp. and Ford Motor Co. (See *Monthly Labor Review*, May 1982, p. 59.)

The Harvester accord, like the two automobile agreements, did not provide for any specified wage increases over its 29-month term, called for 18-month deferrals of each of the first three quarterly cost-of-living adjustments that would have been effective in 1982, and eliminated some paid personal holidays.

The profit-sharing plan adopted at Harvester differed from that in the auto agreements. Union vice president Stephen Yokich said that under Harvester's plan, workers will receive part of every dollar of profit earned by the company during the fiscal years beginning November 1 of 1982 and 1983. (At Ford and GM, workers participate only if profits exceed specified levels.) However, there were no indications that there would be a profit to share. Company chairman and chief executive officer Archie McCardell, who resigned shortly after the settlement, predicted a loss of more than $500 million for the current fiscal year. Harvester lost a total of $790 million during the 2 preceding years. If Harvester shows a profit, and the earnings exceed $300 million in two succes-

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"Developments in Industrial Relations" is prepared by George Ruben of the Division of Developments in Labor-Management Relations, Bureau of Labor Statistics, and is largely based on information from secondary sources.

sive quarters, the agreement is subject to reopening on economic issues.

Other terms of the settlement called for Harvester to infuse $6 million into the Supplemental Unemployment Benefit plan; for adoption of a plan to assure employment opportunities, job security, and greater worker involvement in corporate decisions; and for stronger employee protections on potential plant closings and contracting out of work.

According to Yokich, Harvester's management promised union bargainers that the company would become a model of good labor relations and would strive to "absolutely set the standard (in the industry) for goodwill" with its workers. Some industry observers have attributed Harvester's financial problems to the bitter 1979 confrontation between the union and company, which culminated in a 6-month strike, and to adverse economic conditions that also hit other manufacturers of farm and construction equipment and trucks.

The new pact supersedes the balance of the contract scheduled to expire September 30, 1982. About 20,000 active employees at plants in nine states are covered; 10,000 others from the bargaining unit were on layoff. Overall company employment was less than 65,000, compared with 93,000 in 1979, when the previous contract was negotiated.

American Motors, UAW concession accord

Wage concession bargaining continued in the automobile industry, as American Motors Corp. and the Auto Workers negotiated a new contract that featured an Employee Investment Plan, under which the 14,000 workers will lend the company about $110 million by deferring normal wage and benefit provisions. Raymond Majerus, head of the union's American Motors Department, said the loan will provide the company with money needed to develop "a new line of high quality autos." He expects American Motors workers to recoup their losses before the expiration date of the contract, unlike workers at General Motors Corp. and Ford Motor Co. (For an account of GM and Ford concessions, see *Monthly Labor Review*, May 1982, pp. 59–60 and April 1982, p. 62.)

The money will be accumulated by "banking," paid time off and by deferring pay increases:

- The effective date of 3 percent pay increases that would normally have been effective in September of 1982 and 1983 were deferred until January 1985 (a 3-percent increase that would normally have been effective in September 1984 was eliminated);
- The six quarterly automatic cost-of-living adjustments that would have normally been effective in March, June, September, and December of 1982 and in March and June of 1983 will be deferred to December 3, 1984 (however, if the total calculated amounts of these adjustments exceed $1.20 an hour, the excess will be paid on the normal quarterly adjustment date).
- Employees will "bank" 21 days of pay until 1985 by giving up 5 days of holiday or vacation pay in 1982, 8 days in 1983, and 8 days in 1984.
- The effective dates of certain benefits will be delayed for new employees.

The amount that the workers lose by deferring wage increases and "banking" will be repaid, with 10 percent compound interest, beginning in 1985 and concluding not later than 1989, even if the company is operating at a loss.

For repayment purposes, American Motors will allocate an amount equal to either 25 percent of its automotive profits (during the preceding year) or all profit in excess of 4 percent of sales, whichever is greater. If there is no profit, or if the profit is too small for repayment purposes, the union can opt for a formula calling for the company to repay $100 for each of the first 200,000 vehicles and $150 for each additional vehicle produced in the United States and Canada in a year, in addition to 10 percent of company profits.

In return for the concessions, the company agreed to keep the plants open until the September 1985 termination date of the contract, except in the "gravest economic circumstances." The plants are in Toledo, Ohio, and Milwaukee and Kenosha, Wisc. Also, it pledged to conduct all employment cutbacks—except those resulting from reduced sales—through attrition; notify the union 60 days before any major "outsourcing" (contracting out) decisions; apply wage and benefit cost-saving measures to nonunion employees and reduce the number of supervisors; adopt a company-financed legal services plan; and reopen the agreement if more than 300,000 AMC and Renault vehicles are produced or imported in any 6 consecutive months.

The new contract supersedes the balance of an agreement scheduled to expired in September 1983. Currently, Chrysler Corp. is the only "Big Four" automaker left to settle with the UAW in 1982.

Amtrak agreements deviate from pattern

In the rail passenger service industry, Amtrak reached agreements with six unions for 10,000 employees and bargaining was continuing with nine other unions for 7,000 other workers. Union officials said that the accords were similar to the pattern settlements negotiated by 10 rail unions in 1981 (see *Monthly Labor Review*, January 1982, p. 24) except for several provisions that were included in the Amtrak agreements because of congressional mandates for increased efficiency. According to an Amtrak official, the deviations from the pattern included somewhat smaller pay increases, changes in work rules, reductions in overhead, and changes intended to improve "on time performances." The unions involved in the settlements were the Maintenance of Way Employees; Railway and Airline Clerks; Electrical Workers (IBEW); Boilermakers and Blacksmiths; Machinists; and the Transport Workers and Railway Carmen, who bargain jointly.

High court finds two schools guilty of job bias

In a case involving two public school systems, the Supreme Court ruled that a 1972 law banning discrimination in federally financed educational programs also applies to school employment practices. The issue arose when the former Department of Health, Education and Welfare attempted to withhold funds from the schools, located in North Haven and Trumbull, Connecticut, to force them to comply with the 1972 law banning discrimination in education. Initially, a Federal judge had held that the law did not apply, but an appeals court backed the Federal agency's position, leading the schools to appeal to the Supreme Court.

Writing for the 6-member majority, Justice Harry Blackmun said that while the law does apply to school employment discrimination, the fund cutoff must be limited to the particular program or part of a program actually receiving the aid. This means that the lower court must determine if the funds were so diffused throughout the two school systems that the cutoff should apply to the entire systems.

Company ordered to pay value of concessions

A Federal district judge ruled that the Singer Co. must pay damages to Local 461 of the International Union of Electrical Workers if it closes its Elizabeth, N.J., plant. The local had agreed to labor cost concessions in 1981 in return for a pledge that the facility would be kept open. (See *Monthly Labor Review*, May 1982, p. 61, for the closing announcement.) Judge Herbert J. Stern found that the contract did not contain a promise that the sewing machine plant would be kept open, and that Singer, therefore, has the right to close the plant. However, he ruled that the company was liable for the approximately $2 million value of the concessions to date.

A&P wins concessions in local bargaining

The Great Atlantic and Pacific Tea Co. was successful in its new strategy of seeking labor-cost concessions in local bargaining, as workers in the Philadelphia area agreed to contract changes that will result in the reopening of "a large number" of stores. A&P had closed about 75 stores in the area during the preceding 12 months. The company adopted the local bargaining strategy after the United Food and Commercial Workers rejected its proposals for companywide concessions. (See *Monthly Labor Review*, June 1982, p. 64.) A&P indicated that it would form a subsidiary, Super Fresh Food Centers, Inc., to operate the reopened stores. Company chairman James A. Wood said the subsidiary would operate under a "unique collective bargaining agreement" that would include "incentives and investment programs" for the union members.

Apartment house workers settle

In New York City, 30,000 employees of 3,500 apartment buildings were covered by a settlement between the Service Employees and the Realty Advisory Board. Wage terms included an immediate raise of $24 a week, a $21-increase in the second year, and $20 in the final year. The cost-of-living adjustment formula was revised to provide for pay increases of 4 cents an hour (formerly 3) for each percentage point rise above 8.5 percent in the Consumer Price Index for New York, N.Y.—Northeastern, N.J.

Benefit provisions included an 11th paid holiday—with individual employees given the choice of selecting Good Friday, Yom Kippur, or the birthday of Dr. Martin Luther King Jr.; and full pay (instead of 70 percent) for unused sick leave.

Insurance companies offer early retirement

Three major insurance companies offered special early retirement inducements to 3,600 employees to help reduce operating costs in the face of a slowdown in sales resulting from increased competition and the economic recession. Two of the companies—Metropolitan Life Insurance Co. and Continental Corp.—indicated that the retirement inducements were an alternative to possible layoffs.

At Metropolitan, the offer applied to 500 workers at its New York City and San Francisco regional headquarters. The workers, most of them in their fifties, were offered payments of up to 1.5 years of salary as an inducement to early retirement. The company also reported that it eliminated 9,000 sales agent jobs through attrition during the last 10 years.

At Continental, 900 of 1,400 eligible employees had already accepted the offer, which included lump-sum payments up to 6 months' pay plus special pension supplements continuing to age 62.

Prudential Insurance Co.'s offer to 1,700 workers included cash payments of up to a year of salary. About

300 to 400 workers are expected to accept the offer. The company said that early retirement would relieve "surplus staffing" and also open promotions to more women and members of minority groups.

Workweek reduced for State employees

Idaho Governor John Evans ordered a 20-percent reduction in the workweek and pay of more than 3,000 State employees to help balance the budget for the fiscal year that ended June 30. The cut lasted 7 weeks and applied only to workers paid from the State's general fund; about 10,000 other workers were not affected. The balance of the $12 million shortfall was to be made up by deferring purchases, restricting travel, and a hiring freeze. The deficit resulted from reduced tax collections.

UFW, Teamsters again settle jurisdictional dispute

Renewal of jurisdictional disputes between the United Farm Workers and the Teamsters over organizing agricultural workers in California and other Western States was averted when a peace treaty, scheduled to expire in March, was extended for 1 year. The original 5-year treaty, signed in 1977, ended a struggle between the unions that began about 10 years earlier. (See *Monthly Labor Review*, May 1977, pp. 57–58). Under the agreement, the Farm Workers organize workers engaged in growing agricultural products and the Teamsters organize workers engaged in processing, preserving, and transporting farm products.

Prior to announcement of the agreement extension, Farm Workers' President Cesar Chavez had blamed the Teamsters for his union's financial and operating difficulties. A Teamsters' official said that if his union stayed out of farm labor, "it will give the lie to those who say we Teamsters are to blame for the weakening or the end of the UFW."

State employees get raise, minus 2 weeks of pay

About 165,000 employees of New York State were covered by 3-year agreements that provided similar overall gains in wages and benefits. All of the contracts provided for adoption of delays in paydays that were expected to save the State $88 million this fiscal year.

One of the settlements involved 107,000 administrative, clerical, and blue-collar employees represented by the Civil Service Employees Association. It provided for a 9-percent pay increase on April 1, 1982, and for 5 percent increases on April 1 and September 1 of 1983 and 1984. These employees previously averaged $11,395 a year. To help minimize the immediate cost of this accord, which also called for benefit improvements, the union agreed to a 2-week lag in payrolls. Under this procedure, paychecks will be delayed 1 additional day in each biweekly pay period, resulting in a cumulative delay of 10 workdays. At retirement, workers will be paid for the 10 days at the pay rates they are then receiving.

In a change sought by the union, the parties agreed to end a performance evaluation system which tied workers' pay to managements' assessment of their work. Instead, the parties agreed to return to the prior system, under which all workers in a particular grade will receive the same increase, if their individual performance is at least satisfactory.

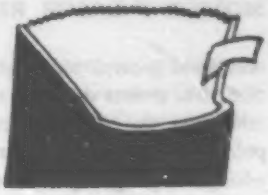
The second settlement, covering 47,000 professional, scientific, and technical workers, provided for a 9-percent salary increase effective April 1, 1982, and for 8 percent increases on each of the next two anniversaries. This settlement, negotiated by the Public Employees Federation, also provided that workers hired after March 31, 1982, accrue 10 days of sick leave and 3 days of personal leave a year, while those already on the payroll will continue to accrue 13 days of sick leave and 5 days of personal leave.

The final settlement, with Council 82 of the State, County and Municipal Employees, provided for essentially the same provisions as those won by the Civil Service Employees Association. One difference was that the witholding of 2 weeks of pay will be accomplished by paying employees for 9½ days (instead of 10 days) for 20 consecutive pay periods.

Ship pilots get pay increase

The 39 pilots who maneuver ships on the lower Columbia River will earn about $90,000 a year (an 11-percent increase) as a result of a decision by the Oregon Board of Maritime Pilots. The pilots earnings now are calculated at 6.2 cents per registered ton and $9.35 per draft foot, rising by 10 percent each in February 1983. In addition, they will receive a surcharge of $100 for each 50 feet of ship length above 699 feet. The pilots handled an average of 133 ships in 1980. Similar increases were being considered for other ship pilots in the area. □

Book Reviews



Social policies for the aging

The Elderly and the Future Economy. By Lawrence Olsen, Christopher Caton, and Martin Duffy, with contributions by Michael Shannon and Robert Tannenwald. Lexington, Mass., D. C. Heath and Co., Lexington Books, 1981. 143 pp., bibliography. $19.95.

This book was prepared by Lawrence Olsen, Christopher Caton, and Martin Duffy, all members of the staff of Data Resources, Inc. (DRI), to supplement the work of the Technical Committee on the Economy of the recent 1981 White House Conference on Aging. Using forecasting techniques based on two simulation models, the authors attempt to assess the general macroeconomic outlook for the period 1980 through 2005, how various age groups in the population will fare during this time period, and the effect on both the income position and status of both elderly and nonelderly individuals and families if four policy options, or a mix thereof, were to be enacted and put into operation over the next 25 years or so.

The four policy options selected for analysis were (1) increased labor force participation of "elderly" workers (age 65 and over) and "nonelderly" workers (age 55–64); (2) a national income guarantee program for the elderly; (3) an increase in personal saving rates by the nonelderly beginning in 1981, and (4) "investment-oriented" corporate tax cuts, also beginning in 1981. No detailed rationale is provided for the selection of these options, only one of which is an income transfer proposal.

After introductory and review of the literature chapters, chapter 3 outlines the DRI baseline simulation model of the economy through 2005. It forecasts slower rates of increase for both the GNP and consumption growth than experienced over the past two decades, only a slow moderation of inflation, and a slowing of the real-income growth of the elderly, at least when compared to the past decade or so. While the real income of the elderly as a group is projected to show some gains, the baseline model forecasts that significant numbers of the elderly population will have low incomes well into the 21st century. A welcome highlight of chapter 3 is the explanation and discussion of the two models, the DRI Macroeconomic Model and the DRI Demographic-Economic Model of the Elderly. The latter was used to project trends in elderly and nonelderly income by various age groups (under age 55, 55–61, 62–64, 65–71, and 72 and over), by family status and income level. The authors are to be commended for the complete income distribution tables for each of these age groups, discussed in both the text and the appendices material.

The next four chapters cover the aforementioned policy options and their macroeconomic effects as well as their effects on income and its distribution between nonelderly and elderly individuals and families. Chapter 4 assesses the effect of increased labor force participation by older people, and both the macroeconomic and income status of the elderly show some general improvement under this option, although the very oldest and the poorest benefit little. Chapter 5 examines the effects of guaranteeing the elderly an adequate level of income beginning in 1981. Interestingly, the minimum standard for income adequacy was the Bureau of Labor Statistics' "Intermediate Budget Level for a Retired Couple in 1979 ($8,562)," and indexed annually thereafter. While the initial annual cost of such an income guarantee is high, some $18 billion the first year, it would have only minimal effects on the economy as a whole, and, of course, prove to be a highly effective mechanism for assuring income adequacy to elderly families and individuals in greatest economic need.

Chapters 6 and 7 discuss options that, in some ways, have either already been implemented or are among the objectives of the Reagan Administration. Chapter 6 analyzes the effects of a personal saving-rate increase by nonelderly workers of about 2-percent higher than the saving rate variable built into the DRI Macroeconomic Model. The personal savings option would lead, according to DRI's analyses, to an appreciable growth of the real gross national product, especially from the period 1986 on. However, gains for the elderly are projected as being slow under this option; not until the year 2000 would the average real income of the elderly population rise above its baseline amount. In chapter 7, investment-oriented corporate tax cuts are analyzed. While economic growth substantially increases under this option, DRI points out that in the absence of new transfer initiatives, the elderly benefit less from the economic improvements that would result from this option than younger age groups. And, DRI emphasizes that this would be especially true for the poorest and the oldest among the older population.

The final chapter compares the various options with each other and with the baseline macroeconomic model. The authors argue for some mix of the various options discussed, although they point out that the greatest gains for the elderly would take place under either an increase in the labor force participation rates of the elderly and near elderly and, of course, the income guarantee option pegged to the BLS Intermediate Budget Level. It is a carefully written and analytical discussion that should aid policymakers at the national level, and those attempting to influence them, with a more sophisticated understanding of these options, their specific policy implications, and their effect on the economy as a whole.

Appendix A should also be mentioned. It includes the various assumptions used in the development of DRI's Macroeconomic simulation, including assumptions in such areas as labor force growth, employment and unemployment growth and rates, energy and energy policy, fiscal policy, consumption expenditures, housing, business investment, State and local spending, and productivity.

If one can assume that there is a fair degree of reliability in the basic DRI Macroeconomic Models and their Demographic-Economic Model, then this book may break some new ground insofar as social policy in the broad field of aging is concerned. The book should be particularly attractive to those working in the field of public retirement income programs, as legislators or policy analysts, including those analysts now working in various organizations attempting to influence national retirement income policy.

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Another look at labor market theory

Labor Economics: The Emerging Synthesis. By Robert M. Fearn. Cambridge, Mass., Winthrop Publishers, 1981. 278 pp. $14.50.

Robert Fearn, it appears, is determined to make economic labor market theory come alive. This book is among the new order of "analytical" labor economics texts emphasizing the applicability of neoclassical economic theory and techniques in the analysis of contemporary labor market issues. Where other authors have failed, Fearn succeeds in (1) identifying the most pressing of today's labor problems and (2) presenting a cogent review of the most important literature bearing on the issues. Indeed, it is in the literature review of each issue that Fearn's book is generally at its best. Early in the work, however, it becomes clear that Fearn disregards his arsenal of knowledge and technique and becomes distracted on mundane side issues.

Fearn covers issues ranging from the economics of women's liberation to the traditional chapter on the distribution of income. His introduction includes an excellent discussion of the changing nature and emphasis of labor economic study. It is here that the topical approach is explained and justified. A telling omission, however, is any indication of the theoretical and quantitative sophistication assumed of the book's readers. This omission returns to haunt the work in many chapters, for it becomes apparent that Fearn's vacillation on the level of analysis stems from either uncertainty regarding the nature of his audience or a futile attempt to serve the purposes of all.

There are several excellent chapters in the book, representing Fearn's ability to identify a meaningful problem and synthesize available literature on the subject. Chapter 8, "The Demand for Human Capital," is a subject traditionally covered in most labor texts. Fearn's contribution to the issue is most enlightening in his presentation of " . . . practical lessons for career choosers, guidance counselors, and others." "The Economics of Unions" chapter is superb as a review of the recent literature. Unfortunately, the treatment of unionism as a consumer good, a monopoly influence, and a cheap screening device, suffers from unnecessary attempts to blend mathematical rigor into the analysis. The discussion of unionism is highlighted, nonetheless, by an empirical investigation of the determinants of union membership and union wage effects. An exceptional chapter, "Economics of Women's Liberation," presents a lucid explanation of female labor force participation influences and skillfully separates the economic from noneconomic forces.

Fearn's book makes a substantial contribution to the labor economics literature, particularly in presenting concepts, theories, and literature reviews in an interesting topical framework. This achievement is marred, however, by extended presentations of mathematical model specifications. If the author considers such elaborations to be necessary, they would more appropriately be presented as chapter appendices.

As many authors are prone to do, Fearn occasionally gets carried away with digressions that detract from the major components of this analysis. Such is the case in the first chapter, "Labor Markets and Labor Force Attachment," where the discussion of "communards" and communal living is stretched over 13 pages in the following sections: "Indifference Curve Analysis and Communal Distribution; A Small Commune, or Tea for Two; Communes and 'Copping' or 'Opting Out'; and Communes, Households and Labor Force Attachment." A similar redundancy shows up in the presentation of President Nixon's Family Assistance Plan (FAP) in the chapter on "Welfare Programs and Work Incentives." While Fearn presents a straightforward treatment of many of the major issues surrounding income maintenance programs, in place of his diversion to mathematical elucidation of the FAP model could have been a simple algebraic formulation demonstrating that the principal objectives of U.S. welfare policy are mutually inconsistent.

Labor Economics: An Emerging Synthesis should be read by students of labor economics (and teachers) interested in an up-to-date analysis of current labor problems. While I argue at some points with Fearn's presentation, I find the book generally to be free of major errors of analysis and interpretation.

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Foreign policy: ways and means

Solvency—The Price of Survival: An Essay on American Foreign Policy. By James Chace. New York, Random House, Inc., 1981. 115 pp. $9.95.

In a clear, accessible, even personable style, James Chace, the managing editor of *Foreign Affairs,* addresses the conduct of foreign relations and economic policy with broad, vigorous strokes. At the same time, he illuminates the subtle and generally unexamined interstices between these two fields with a clarity not too short of brilliance. After reading this book, we can understand that a $1.5 trillion unfunded liability in the Social Security system may keep a strategic window of vulnerability open that much wider or that today's high rate of unemployment could mean that a U.S. Army division will have to go 1 more year without updating its equipment. These are some of the hard choices that must be made when competing commitments meet the reality of too scarce resources.

Tension between wants and means is the foundation of Chace's discussion of foreign policy. His analysis can be reduced, with admitted oversimplification, to a variety of accounting problems. On the debit side are the national security commitments, the international political debts, the promises made to others in conducting foreign policy, and the huge domestic commitments America has made to its own people. On the credit side, there are the promises and commitments returned to the United States, the Nation's standing military power, and the fecundity of the economy. In such an accounting framework, Chace quotes Walter Lippmann:

> . . . the level may vary at which a solvent balance is struck. If its expenditures are safely within its assured means, a family is solvent if it is poor, is well-to-do, or is rich. The same principle holds true of nations. The statesman of a strong country may balance its commitments at a high level or at a low. But whether he is conducting the affairs of Germany, which has had dynamic ambitions, or the affairs of Switzerland, which seeks to hold what it already has, or the United States, he must bring his means and ends into balance. If he does not, he will follow a course that leads to disaster.

James Chace argues that we are well along such a course. We have spent too much—Chace is especially mindful of Vietnam—and we are building too little.

The analysis of the economy and why it is not producing enough is less assured than Chace's commentary on foreign affairs. His economics rely heavily on the oldtime religion that holds its meetings in the middle of the road that runs past the Wall in lower Manhattan: The government has spent too much and taxed too little; the authorities have printed too much money to make up the difference; and we have all gotten too lazy and complacent in our labor. The theory is arguable, but the implications are clear—the United States is no longer so overwhelmingly dominant an economy that it can more or less demand, and generally get, its own political and economic terms on all issues. The United States must now choose between its "vital interests" and "secondary goals" and, in many ways, must learn to define these concepts in terms of the limited means available.

Solvency is a provocative and disturbing book. Words like "retrenchment" and "withdrawal" and even "isolation" can whisper through one's thoughts. Simple logical extension of Chace's theme of bringing means and ends into balance leads to thoughts of digging into a new, nuclear Fortress America. But I think Chace would agree that policy can be made to cope with the solvency crisis without drawing back from our basic commitment as the principal country among the free nations of the world. I would like to add that the parameters of that exercise may not ultimately be set in Washington's foreign policy councils, but on the boardroom tables and shop floors of America's production machine.

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NOTES ON CURRENT LABOR STATISTICS

This section of the *Review* presents the principal statistical series collected and calculated by the Bureau of Labor Statistics. A brief introduction to each group of tables provides definitions, notes on the data, sources, and other material usually found in footnotes.

Readers who need additional information are invited to consult the BLS regional offices listed on the inside front cover of this issue of the *Review*. Some general notes applicable to several series are given below.

Seasonal adjustment. Certain monthly and quarterly data are adjusted to eliminate the effect of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might otherwise mask short-term movements of the statistical series. Tables containing these data are identified as "seasonally adjusted." Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years.

Seasonally adjusted labor force data in tables 2–7 were revised in the March 1982 issue of the *Review* to reflect experience through 1981. The original estimates also were revised to 1970 to reflect 1980 census population controls.

Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are being seasonally adjusted with a new procedure called X-11/ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada Catalogue No. 12-564E, February 1980). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. Revisions of historical data continue to be made only at the end of each calendar year.

Annual revision of the seasonally adjusted payroll data in tables 11, 14, and 16 begins with the August 1980 issue using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 30 and 31 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

Adjustments for price changes. Some data are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of $3 and a current price index number of 150, where 1967 = 100, the hourly rate expressed in 1967 dollars is $2 ($3/150 × 100 = $2). The resulting values are described as "real," "constant," or "1967" dollars.

Availability of information. Data that supplement the tables in this section are published by the Bureau of Labor Statistics in a variety of sources. Press releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule given below. The *BLS Handbook of Labor Statistics*, Bulletin 2070, provides more detailed data and greater historical coverage for most of the statistical series presented in the *Monthly Labor Review*. More information from the household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau. Historically, comparable information from the establishment survey is published in two comprehensive data books—*Employment and Earnings, United States* and *Employment and Earnings, States and Areas*, and their annual supplements. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

Symbols

p = preliminary. To improve the timeliness of some series, preliminary figures are issued based on representative but incomplete returns.
r = revised. Generally, this revision reflects the availability of later data but may also reflect other adjustments.
n.e.c. = not elsewhere classified.

Schedule of release dates for major BLS statistical series

Series	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	July 2	June	August 6	July	1–11
Producer Price Index	July 16	June	August 13	July	23–27
Consumer Price Index	July 23	June	August 24	July	19–22
Real earnings	July 23	June	August 24	July	12–17
Productivity and costs:					
Nonfarm business and manufacturing	July 28	2nd quarter	....	....	28–31
Nonfinancial corporations	....	....	August 26	2nd quarter	28–31
Employment Cost Index	....	....	August 19	2nd quarter	32–34

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 60,000 households selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

Definitions

Employed persons are (1) those who worked for pay any time during the week which includes the 12th day of the month or who worked unpaid for 15 hours or more in a family-operated enterprise and (2) those who were temporarily absent from their regular jobs because of illness, vacation, industrial dispute, or similar reasons. A person working at more than one job is counted only in the job at which he or she worked the greatest number of hours.

Unemployed persons are those who did not work during the survey week, but were available for work except for temporary illness and had looked for jobs within the preceding 4 weeks. Persons who did not look for work because they were on layoff or waiting to start new jobs within the next 30 days are also counted among the unemployed. The **unemployment rate** represents the number unemployed as a percent of the civilian labor force.

The **civilian labor force** consists of all employed or unemployed persons in the civilian noninstitutional population; the **total labor force** includes military personnel. Persons **not in the labor force** are those not classified as employed or unemployed; this group includes persons retired, those engaged in their own housework, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job market factors, and those who are voluntarily idle. The **noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy.

Full-time workers are those employed at least 35 hours a week; **part-time workers** are those who work fewer hours. Workers on part-time schedules for economic reasons (such as slack work, terminating or starting a job during the week, material shortages, or inability to find full-time work) are among those counted as being on full-time status, under the assumption that they would be working full time if conditions permitted. The survey classifies unemployed persons in full-time or part-time status by their reported preferences for full-time or part-time work.

Notes on the data

From time to time, and especially after a decennial census, adjustments are made in the Current Population Survey figures to correct for estimating errors during the preceding years. These adjustments affect the comparability of historical data presented in table 1. A description of these adjustments and their effect on the various data series appear in the Explanatory Notes of *Employment and Earnings*.

Data in tables 2–7 are seasonally adjusted, based on the seasonal experience through December 1981.

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950–81

[Numbers in thousands]

Year	Total noninstitutional population	Total labor force		Civilian labor force						Not in labor force
		Number	Percent of population	Total	Employed			Unemployed		
					Total	Agriculture	Nonagricultural industries	Number	Percent of labor force	
1950	106,645	63,858	59.9	62,208	58,918	7,160	51,758	3,288	5.3	42,787
1955	112,732	68,072	60.4	65,023	62,170	6,450	55,722	2,852	4.4	44,660
1960	119,759	72,142	60.2	69,628	65,778	5,458	60,318	3,852	5.5	47,617
1964	127,224	75,830	59.6	73,091	69,305	4,523	64,782	3,786	5.2	51,394
1965	129,236	77,178	59.7	74,455	71,088	4,361	66,726	3,366	4.5	52,058
1966	131,180	78,893	60.1	75,770	72,895	3,979	68,915	2,875	3.8	52,288
1967	133,319	80,793	60.6	77,347	74,372	3,844	70,527	2,975	3.8	52,527
1968	135,562	82,272	60.7	78,737	75,920	3,817	72,103	2,817	3.6	53,291
1969	137,841	84,240	61.1	80,734	77,902	3,606	74,296	2,832	3.5	53,602
1970	140,272	85,959	61.3	82,771	78,678	3,463	75,215	4,093	4.9	54,315
1971	143,033	87,198	61.0	84,382	79,367	3,394	75,972	5,016	5.9	55,834
1972	146,574	89,484	61.1	87,034	82,153	3,484	78,669	4,882	5.6	57,091
1973	149,423	91,756	61.4	89,429	85,064	3,470	81,594	4,365	4.9	57,667
1974	152,349	94,179	61.8	91,949	86,794	3,515	83,279	5,156	5.6	58,171
1975	155,333	95,955	61.8	93,775	85,846	3,408	82,438	7,929	8.5	59,377
1976	158,294	98,302	62.1	96,158	88,752	3,331	85,421	7,406	7.7	59,991
1977	161,166	101,142	62.8	99,009	92,017	3,283	88,734	6,991	7.1	60,025
1978	164,027	104,368	63.6	102,251	96,048	3,387	92,661	6,202	6.1	59,659
1979	166,951	107,050	64.1	104,962	98,824	3,347	95,477	6,137	5.8	59,900
1980	169,848	109,042	64.2	106,940	99,303	3,364	95,938	7,637	7.1	60,806
1981	172,272	110,812	64.3	108,670	100,397	3,368	97,030	8,273	7.6	61,460

2. Employment status by sex, age, and race, seasonally adjusted

[Numbers in thousands]

Employment status	Annual average		1981								1982				
	1980	1981	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
TOTAL															
Total noninstitutional population[1]	169,848	172,272	171,958	172,172	172,386	172,559	172,756	172,966	173,185	173,380	173,465	173,667	173,843	174,020	174,201
Total labor force	109,042	110,812	111,429	110,595	110,827	110,978	110,959	111,170	111,430	111,246	111,088	111,333	111,521	111,824	112,841
Civilian noninstitutional population[1]	167,745	170,130	169,819	170,042	170,246	170,399	170,593	170,809	170,996	171,166	171,335	171,489	171,667	171,844	172,028
Civilian labor force	106,940	108,670	109,283	108,434	108,708	108,818	108,494	109,012	109,272	109,184	108,879	109,165	109,346	109,647	110,686
Employed	99,303	100,397	101,045	100,430	100,884	100,840	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117
Agriculture	3,364	3,368	3,405	3,348	3,342	3,404	3,359	3,378	3,372	3,209	3,411	3,373	3,348	3,309	3,488
Nonagricultural industries	95,938	97,030	97,640	97,082	97,522	97,436	96,899	96,965	96,800	96,404	96,170	96,217	96,144	96,032	96,629
Unemployed	7,637	8,273	8,238	8,004	7,824	7,978	8,236	8,669	9,100	9,571	9,298	9,575	9,854	10,307	10,569
Unemployment rate	7.1	7.6	7.5	7.4	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5
Not in labor force	60,806	61,460	60,536	61,608	61,538	61,581	62,099	61,797	61,724	61,982	62,456	62,324	62,321	62,197	61,342
Men, 20 years and over															
Civilian noninstitutional population[1]	71,138	72,419	72,251	72,359	72,472	72,559	72,670	72,795	72,921	73,020	73,120	73,209	73,287	73,392	73,490
Civilian labor force	56,455	57,197	57,479	57,094	57,172	57,250	57,282	57,355	57,469	57,665	57,369	57,448	57,554	57,730	58,104
Employed	53,101	53,582	53,884	53,597	53,874	53,791	53,693	53,504	53,364	53,122	53,047	53,097	53,006	52,988	53,200
Agriculture	2,396	2,384	2,390	2,379	2,383	2,432	2,383	2,413	2,392	2,311	2,390	2,386	2,377	2,382	2,464
Nonagricultural industries	50,705	51,199	51,494	51,218	51,491	51,359	51,310	51,091	50,972	50,811	50,657	50,711	50,629	50,606	50,736
Unemployed	3,353	3,615	3,595	3,497	3,298	3,459	3,589	3,851	4,105	4,543	4,322	4,351	4,548	4,742	4,904
Unemployment rate	5.9	6.3	6.3	6.1	5.8	6.0	6.2	6.7	7.1	7.9	7.5	7.6	7.9	8.2	8.4
Not in labor force	14,683	15,222	14,772	15,265	15,300	15,309	15,388	15,440	15,452	15,355	15,752	15,761	15,733	15,662	15,386
Women, 20 years and over															
Civilian noninstitutional population[1]	80,065	81,497	81,308	81,434	81,561	81,671	81,792	81,900	82,038	82,151	82,260	82,367	82,478	82,591	82,707
Civilian labor force	41,106	42,485	42,608	42,581	42,682	42,666	42,344	42,831	42,987	42,888	42,868	43,031	43,243	43,301	43,683
Employed	38,492	39,590	39,737	39,757	39,810	39,841	39,426	39,814	39,878	39,713	39,764	39,744	39,807	39,715	40,075
Agriculture	584	604	605	585	580	609	608	596	635	572	649	628	636	601	634
Nonagricultural industries	37,907	38,986	39,132	39,172	39,230	39,232	38,818	39,218	39,243	39,141	39,115	39,116	39,172	39,114	39,441
Unemployed	2,615	2,895	2,871	2,824	2,872	2,825	2,918	3,017	3,109	3,175	3,104	3,286	3,436	c3,586	3,608
Unemployment rate	6.4	6.8	6.7	6.6	6.7	6.6	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3
Not in labor force	38,959	39,012	38,700	38,853	38,879	39,005	39,448	39,069	39,051	39,263	39,392	39,336	39,235	39,290	39,024
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	16,543	16,214	16,270	16,249	16,213	16,169	16,131	16,093	16,037	15,985	15,955	15,913	15,902	15,861	15,820
Civilian labor force	9,378	8,988	9,206	8,759	8,834	8,902	8,888	8,826	8,826	8,631	8,643	8,686	8,549	8,616	8,819
Employed	7,710	7,225	7,424	7,076	7,180	7,208	7,139	7,025	6,940	6,778	6,771	6,748	6,679	6,637	6,782
Agriculture	385	380	410	394	369	373	367	369	355	326	373	359	336	326	390
Nonagricultural industries	7,325	6,845	7,014	6,682	6,811	6,835	6,772	6,656	6,585	6,452	6,398	6,389	6,343	6,311	6,392
Unemployed	1,669	1,763	1,782	1,683	1,654	1,694	1,749	1,801	1,886	1,853	1,872	1,938	1,870	1,979	2,037
Unemployment rate	17.8	19.6	19.4	19.2	18.7	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1
Not in labor force	7,165	7,226	7,064	7,490	7,379	7,267	7,243	7,267	7,211	7,354	7,312	7,227	7,353	7,245	7,001
White															
Civilian noninstitutional population[1]	146,122	147,908	147,670	147,804	147,976	148,144	148,370	148,562	148,631	148,755	148,842	148,852	149,132	149,249	149,250
Civilian labor force	93,600	95,052	95,666	94,887	95,126	95,163	94,884	95,365	95,535	95,329	95,120	95,330	95,508	96,015	96,641
Employed	87,715	88,709	89,237	88,789	89,170	89,221	88,628	88,734	88,498	88,010	87,955	87,986	87,956	87,988	88,450
Unemployed	5,884	6,343	6,429	6,098	5,956	5,942	6,256	6,631	7,037	7,319	7,165	7,344	7,552	8,026	8,191
Unemployment rate	6.3	6.7	6.7	6.4	6.3	6.2	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5
Not in labor force	52,522	52,856	52,004	52,917	52,850	52,981	53,486	53,197	53,096	53,426	53,722	53,522	53,624	53,234	52,609
Black															
Civilian noninstitutional population[1]	17,824	18,219	18,170	18,206	18,239	18,276	18,297	18,333	18,362	18,392	18,423	18,450	18,480	18,511	18,542
Civilian labor force	10,865	11,086	11,126	11,033	10,971	11,089	11,134	11,188	11,207	11,226	11,188	11,205	11,217	11,170	11,335
Employed	9,313	9,355	9,460	9,310	9,338	9,287	9,319	9,313	9,321	9,279	9,314	9,265	9,197	9,111	9,216
Unemployed	1,553	1,731	1,666	1,723	1,633	1,802	1,815	1,875	1,886	1,947	1,874	1,940	2,020	2,059	2,120
Unemployment rate	14.3	15.6	15.0	15.6	14.9	16.3	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7
Not in labor force	6,959	7,133	7,044	7,173	7,268	7,187	7,163	7,145	7,155	7,166	7,235	7,245	7,263	7,341	7,207

[1] As in table 1, population figures are not seasonally adjusted.

c = corrected.

3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1981								1982				
	1980	1981	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
CHARACTERISTIC															
Total employed, 16 years and over	99,303	100,397	101,045	100,430	100,884	100,840	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,240	100,117
Men	57,186	57,397	57,793	57,279	57,640	57,551	57,471	57,266	57,051	56,725	56,629	56,608	56,472	56,401	56,820
Women	42,117	43,000	43,252	43,151	43,224	43,289	42,787	43,077	43,121	42,888	42,952	42,982	43,020	42,840	43,297
Married men, spouse present	39,004	38,882	39,120	38,890	38,861	38,961	38,865	38,746	38,553	38,342	38,224	38,255	38,161	38,142	38,312
Married women, spouse present	23,532	23,915	24,182	24,106	24,159	24,043	23,626	23,874	23,629	23,681	23,744	23,727	23,900	23,831	24,213
OCCUPATION															
White-collar workers	51,882	52,940	53,016	52,887	52,957	53,141	52,908	53,199	52,986	53,094	52,836	52,841	52,763	53,177	53,705
Professional and technical	15,968	16,420	16,863	16,410	16,384	16,621	16,598	16,681	16,657	16,774	16,803	16,812	16,658	16,844	16,818
Managers and administrators, except farm	11,138	11,540	11,469	11,411	11,576	11,480	11,533	11,616	11,461	11,424	11,081	11,253	11,311	11,501	11,541
Salesworkers	6,303	6,425	6,562	6,513	6,373	6,460	6,441	6,400	6,418	6,450	6,580	6,544	6,637	6,603	6,587
Clerical workers	18,473	18,564	18,673	18,623	18,582	18,570	18,326	18,502	18,550	18,436	18,423	18,432	18,155	18,229	18,759
Blue-collar workers	31,452	31,261	31,766	31,536	31,580	31,611	31,266	30,953	30,683	30,344	30,255	30,309	30,416	29,924	29,926
Craft and kindred workers	12,787	12,662	12,911	12,749	12,767	12,724	12,514	12,446	12,411	12,448	12,370	12,464	12,511	12,462	12,316
Operatives, except transport	10,595	10,540	10,716	10,700	10,710	10,658	10,524	10,410	10,220	10,169	9,988	9,865	9,880	9,868	9,585
Transport equipment operatives	3,531	3,476	3,488	3,480	3,526	3,530	3,506	3,580	3,438	3,388	3,415	3,563	3,367	3,480	3,419
Nonfarm laborers	4,567	4,583	4,703	4,580	4,548	4,699	4,722	4,517	4,614	4,351	4,451	4,387	4,648	4,343	4,657
Service workers	13,228	13,438	13,470	13,214	13,526	13,282	13,381	13,525	13,670	13,639	13,709	13,612	13,526	13,586	13,739
Farmworkers	2,741	2,749	2,746	2,710	2,727	2,753	2,743	2,770	2,802	2,680	2,817	2,787	2,710	2,683	2,731
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,425	1,464	1,499	1,437	1,485	1,501	1,481	1,502	1,436	1,252	1,377	1,426	1,416	1,423	1,541
Self-employed workers	1,642	1,638	1,654	1,664	1,563	1,636	1,643	1,631	1,641	1,602	1,674	1,586	1,644	1,664	1,668
Unpaid family workers	297	286	235	263	244	258	258	261	321	229	380	359	277	270	238
Nonagricultural industries:															
Wage and salary workers	88,525	89,543	90,402	89,508	89,971	89,985	89,376	89,460	89,238	88,991	88,759	88,586	88,526	88,322	89,051
Government	15,912	15,689	15,776	15,707	15,637	15,526	15,475	15,491	15,297	15,585	15,578	15,527	15,492	15,453	15,422
Private industries	72,612	73,853	74,626	73,801	74,334	74,469	73,901	73,969	73,941	73,406	73,181	73,059	73,034	72,869	73,629
Private households	1,192	1,208	1,192	1,177	1,216	1,259	1,102	1,162	1,204	1,291	1,249	1,161	1,225	1,192	1,202
Other industries	71,420	72,645	73,434	72,624	73,118	73,210	72,799	72,807	72,637	72,115	71,932	71,898	71,809	71,677	72,427
Self-employed workers	7,000	7,267	6,969	7,138	7,071	7,103	7,217	7,152	7,141	7,057	6,971	7,055	7,120	7,284	7,299
Unpaid family workers	413	395	358	370	383	397	388	451	425	410	410	408	434	413	382
PERSONS AT WORK[1]															
Nonagricultural industries	89,299	91,377	91,745	91,509	92,532	91,569	90,679	91,384	91,323	90,902	90,125	90,892	90,540	90,596	91,282
Full-time schedules	73,590	74,339	74,671	74,683	75,609	74,467	73,794	73,886	73,815	73,360	72,803	73,029	72,640	72,335	73,036
Part time for economic reasons	4,094	4,499	4,264	4,033	4,374	4,350	4,656	5,009	5,036	5,268	5,071	5,563	5,717	5,634	5,763
Usually work full time	1,714	1,738	1,657	1,465	1,680	1,729	1,758	2,006	1,945	2,121	1,763	2,193	2,237	2,223	2,211
Usually work part time	2,380	2,761	2,607	2,568	2,694	2,621	2,897	3,003	3,091	3,147	3,307	3,370	3,480	3,411	3,552
Part time for noneconomic reasons	12,595	12,539	12,810	12,774	12,538	12,752	12,429	12,489	12,362	12,274	12,251	12,300	12,183	12,427	12,483

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[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial disputes.

4. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1981								1982				
	1980	1981	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
CHARACTERISTIC															
Total, 16 years and over	7.1	7.6	7.5	7.4	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5
Men, 20 years and over	5.9	6.3	6.3	6.1	5.8	6.0	6.2	6.7	7.1	7.8	7.5	7.6	7.9	8.2	8.4
Women, 20 years and over	6.4	6.8	6.7	6.6	6.7	6.6	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3
Both sexes, 16 to 19 years	17.8	19.6	19.4	19.2	18.7	19.0	18.7	20.4	21.4	21.5	21.7	22.3	21.8	23.0	23.1
White, total	6.3	6.7	6.7	6.4	6.3	6.2	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5
Men, 20 years and over	5.3	5.6	5.6	5.3	5.0	5.2	5.5	5.9	6.4	6.9	6.6	6.7	7.0	7.3	7.5
Women, 20 years and over	5.6	5.9	5.9	5.7	5.8	5.5	5.9	6.1	6.3	6.4	6.3	6.6	6.9	7.2	7.3
Both sexes, 16 to 19 years	15.5	17.3	17.5	16.6	16.4	16.1	17.2	17.7	19.0	19.0	19.6	20.0	19.0	20.8	20.3
Black, total	14.3	15.6	15.0	15.6	14.0	16.3	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7
Men, 20 years and over	12.4	13.5	13.0	13.7	12.7	13.6	14.5	14.7	15.5	16.5	16.3	16.0	16.0	16.9	17.0
Women, 20 years and over	11.9	13.4	13.1	13.3	13.1	13.8	14.0	13.9	13.6	14.1	13.3	14.5	15.4	15.6	15.3
Both sexes, 16 to 19 years	38.5	41.4	38.9	40.6	40.0	48.0	40.6	36.6	44.1	42.2	41.2	42.3	46.0	48.1	48.6
Married men, spouse present	4.2	4.3	4.0	4.2	3.9	4.0	4.4	4.8	5.2	5.7	5.3	5.3	5.5	6.0	6.1
Married women, spouse present	5.8	6.0	5.8	5.7	5.7	5.5	6.0	6.1	6.5	6.6	6.2	7.0	7.1	7.0	7.4
Women who maintain families	9.2	10.4	10.4	10.7	11.2	10.1	10.7	10.6	10.8	10.5	10.4	10.2	10.6	11.5	11.8
Full-time workers	6.9	7.3	7.1	7.1	6.8	6.9	7.3	7.7	8.1	8.7	8.4	8.5	8.9	9.2	9.2
Part-time workers	8.6	9.4	9.6	9.2	9.3	9.6	9.6	9.5	10.2	9.2	9.6	10.6	10.0	10.9	10.5
Unemployed 15 weeks and over	1.7	2.1	2.0	2.2	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.5	2.7	2.7	3.0
Labor force time lost[1]	7.9	8.5	8.6	7.9	7.9	7.9	8.5	9.1	9.5	10.1	10.0	9.8	10.4	10.4	11.1
OCCUPATION															
White-collar workers	3.7	4.0	4.0	3.9	4.0	3.9	4.1	4.1	4.2	4.5	4.2	4.6	4.8	4.9	4.8
Professional and technical	2.5	2.8	2.8	2.8	2.8	2.5	2.8	2.6	2.7	3.4	2.9	3.1	3.2	3.2	3.3
Managers and administrators, except farm	2.4	2.7	2.6	2.7	2.6	2.7	2.7	2.8	3.0	3.1	2.7	3.1	3.0	3.3	3.5
Salesworkers	4.4	4.8	4.6	4.3	4.9	4.7	5.0	4.9	5.0	4.9	4.5	4.8	5.8	5.8	5.2
Clerical workers	5.3	5.7	5.6	5.4	5.7	5.7	5.8	6.0	6.0	6.2	6.3	6.7	6.9	7.2	6.8
Blue-collar workers	10.0	10.3	9.9	9.8	9.5	9.5	10.2	10.9	11.8	12.7	12.5	12.5	12.9	13.7	13.5
Craft and kindred workers	6.6	7.5	7.2	7.1	6.9	7.0	7.7	8.3	8.5	9.3	9.0	8.4	9.1	9.6	9.4
Operatives, except transport	12.2	12.2	11.8	11.1	11.1	11.1	11.6	12.8	14.1	15.5	15.4	15.4	15.9	16.9	16.5
Transport equipment operatives	8.8	8.7	8.2	8.1	7.3	8.0	8.7	8.0	10.4	10.5	10.2	10.3	10.4	10.7	11.8
Nonfarm laborers	14.6	14.7	13.5	14.7	14.4	13.2	14.6	15.6	16.0	16.9	16.9	17.9	17.9	19.2	18.3
Service workers	7.9	8.9	9.4	8.9	8.0	8.9	9.0	9.3	9.7	9.6	9.2	9.8	10.2	11.1	11.3
Farmworkers	4.8	5.5	5.2	6.2	4.8	5.4	4.0	6.2	6.2	6.4	6.9	4.9	5.4	5.8	6.3
INDUSTRY															
Nonagricultural private wage and salary workers[2]	7.4	7.7	7.7	7.4	7.2	7.3	7.7	8.1	8.4	9.1	8.8	9.0	9.5	9.9	9.9
Construction	14.1	15.6	15.7	16.1	15.2	16.2	16.3	17.6	17.8	18.1	18.7	18.1	17.9	19.4	18.8
Manufacturing	8.5	8.3	7.8	7.4	7.3	7.0	7.9	8.6	9.4	11.0	10.4	10.6	10.8	11.3	11.6
Durable goods	8.9	8.2	7.4	7.1	7.1	6.5	7.7	8.6	9.6	11.8	11.0	11.3	10.8	11.9	12.2
Nondurable goods	7.9	8.4	8.6	7.9	7.6	7.9	8.3	8.8	9.3	9.6	9.5	9.5	10.8	10.5	10.7
Transportation and public utilities	4.9	5.2	5.7	4.9	4.1	4.8	4.2	4.8	5.5	6.0	6.4	5.9	5.6	7.0	6.5
Wholesale and retail trade	7.4	8.1	8.3	7.7	7.9	7.9	8.5	8.4	8.8	8.9	8.7	9.0	10.3	10.1	10.6
Finance and service industries	5.3	5.9	5.8	5.8	5.7	5.7	6.0	6.2	6.1	6.4	5.9	6.5	6.9	7.0	6.9
Government workers	4.1	4.7	4.7	4.6	4.6	4.5	4.7	4.7	5.2	5.0	4.8	5.2	4.9	5.3	5.0
Agricultural wage and salary workers	11.0	12.1	11.0	13.3	10.7	12.0	11.0	13.4	14.1	14.8	16.2	12.8	14.0	14.6	16.2

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[1] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

[2] Includes mining, not shown separately.

5. Unemployment rates, by sex and age, seasonally adjusted

Sex and age	Annual average 1980	Annual average 1981	1981 May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1982 Jan.	Feb.	Mar.	Apr.	May
Total, 16 years and over	7.1	7.6	7.5	7.4	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5
16 to 19 years	17.8	19.6	19.4	19.2	18.7	19.6	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1
16 to 17 years	20.0	21.4	21.3	22.6	19.8	20.8	21.4	21.5	22.6	21.9	21.9	22.7	22.7	24.6	25.3
18 to 19 years	16.2	18.4	17.7	17.5	17.8	17.8	18.5	20.0	20.5	21.2	21.3	22.0	21.3	21.9	21.3
20 to 24 years	11.5	12.3	12.6	12.1	11.5	12.1	12.3	12.7	13.0	13.5	13.5	14.1	14.2	14.7	14.3
25 years and over	5.1	5.4	5.2	5.3	5.2	5.2	5.4	5.7	6.0	6.5	6.3	6.4	6.8	7.0	7.1
25 to 54 years	5.5	5.8	5.6	5.6	5.5	5.5	5.8	6.2	6.5	6.9	6.7	6.8	7.3	7.4	7.7
55 years and over	3.3	3.6	3.4	3.5	3.5	3.5	3.8	3.8	3.8	4.1	4.2	4.3	4.6	5.0	4.8
Men, 16 years and over	6.9	7.4	7.3	7.2	6.7	7.1	7.3	7.7	8.3	9.0	8.6	8.7	9.0	9.4	9.6
16 to 19 years	18.3	20.1	20.0	20.0	18.8	19.8	19.9	20.1	21.6	22.3	22.1	22.5	23.5	24.4	24.0
16 to 17 years	20.4	22.0	22.3	24.0	19.9	21.5	21.5	21.7	22.7	22.6	23.0	23.0	24.3	24.7	26.3
18 to 19 years	16.7	18.8	18.0	18.2	17.9	18.3	18.7	[illegible]	21.0	22.2	21.4	22.1	22.9	24.3	21.9
20 to 24 years	12.5	13.2	13.8	12.9	11.6	12.9	13.1	13.8	14.4	14.8	14.9	15.4	15.7	16.0	15.5
25 years and over	4.8	5.1	4.7	5.0	4.7	4.9	5.0	5.5	5.8	6.5	6.3	6.3	6.6	6.8	6.9
25 to 54 years	5.1	5.6	5.1	5.2	5.0	5.2	5.5	5.9	6.3	6.9	6.7	6.7	7.1	7.2	7.5
55 years and over	3.3	3.5	3.4	3.4	3.4	3.4	3.5	3.7	3.7	4.4	4.3	4.2	4.6	5.1	4.7
Women, 16 years and over	7.4	7.9	7.8	7.7	7.8	7.7	8.0	8.2	8.4	8.5	8.4	8.9	9.0	9.4	9.5
16 to 19 years	17.2	19.0	18.7	18.4	18.6	18.2	19.5	20.7	20.9	20.5	21.2	22.1	20.1	21.3	22.1
16 to 17 years	19.6	20.7	20.2	21.1	19.7	20.0	21.2	21.9	22.5	21.1	20.6	22.5	20.8	24.5	24.1
18 to 19 years	15.6	17.9	17.4	16.8	17.7	16.9	18.3	20.6	19.9	20.0	21.1	21.9	19.6	19.4	20.6
20 to 24 years	10.4	11.2	11.2	11.2	11.3	11.1	11.4	11.5	11.3	12.0	11.9	12.7	12.6	13.3	12.9
25 years and over	5.5	5.9	5.8	5.7	5.8	5.6	6.0	6.1	6.4	6.4	6.3	6.5	7.0	7.2	7.4
25 to 54 years	6.0	6.3	6.4	6.1	6.1	6.0	6.3	6.5	6.8	6.9	6.7	7.0	7.6	7.7	8.0
55 years and over	3.2	3.8	3.4	3.5	3.7	3.7	4.3	4.0	3.8	3.7	4.1	4.3	4.3	4.8	5.0

6. Unemployed persons, by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	1981 May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1982 Jan.	Feb.	Mar.	Apr.	May
NUMBER OF UNEMPLOYED													
Lost last job	4,032	4,173	3,867	4,106	4,426	4,573	4,905	5,343	5,205	5,153	5,622	5,806	5,901
On layoff	1,357	1,302	1,225	1,276	1,452	1,631	1,826	2,042	1,960	1,740	1,828	1,946	1,969
Other job losers	2,675	2,871	2,642	2,830	2,974	2,942	3,079	3,301	3,245	3,413	3,794	3,859	3,932
Left last job	1,004	896	926	879	921	976	916	923	835	984	865	937	874
Reentered labor force	2,106	2,030	2,078	2,034	2,058	2,178	2,339	2,244	2,070	2,277	2,249	2,285	2,438
Seeking first job	956	973	940	971	977	1,032	996	1,021	1,056	1,100	1,044	1,081	1,154
PERCENT DISTRIBUTION													
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	49.8	51.6	49.5	51.4	52.8	52.4	53.6	58.1	56.7	54.3	57.4	57.4	58.9
On layoff	16.8	16.1	15.7	16.0	17.3	18.7	19.9	21.4	20.3	18.3	18.7	18.9	19.0
Other job losers	33.0	35.5	33.8	35.4	35.5	33.7	33.6	34.6	36.5	35.9	38.7	38.5	37.9
Job leavers	12.4	11.1	11.9	11.0	11.0	11.2	10.0	9.7	9.1	10.2	9.0	9.1	8.4
Reentrants	26.0	25.2	26.6	25.5	24.6	25.0	25.5	23.5	22.7	24.0	22.9	23.0	23.5
New entrants	11.8	12.0	12.0	12.2	11.7	11.5	10.9	10.7	11.5	11.6	10.7	10.5	11.1
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE													
Job losers	3.7	3.8	3.6	3.8	4.1	4.2	4.5	4.9	4.8	4.7	5.1	5.4	5.3
Job leavers	.9	.8	.9	.8	.8	.9	.8	.8	.8	.9	.8	.9	.8
Reentrants	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.1	1.9	2.1	2.1	2.2	2.2
New entrants	.9	.9	.9	.9	.9	.9	.9	.9	1.0	1.0	1.0	1.0	1.0

7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average 1980	Annual average 1981	1981 May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1982 Jan.	Feb.	Mar.	Apr.	May
Less than 5 weeks	3,295	3,449	3,378	3,303	3,323	3,326	3,529	3,707	3,852	4,037	3,852	3,789	3,825	3,858	3,874
5 to 14 weeks	2,470	2,539	2,806	2,423	2,312	2,469	2,585	2,886	2,862	3,016	3,068	3,052	3,078	3,304	3,320
15 weeks and over	1,871	2,285	2,231	2,363	2,170	2,217	2,248	2,292	2,364	2,372	2,399	2,724	2,954	3,015	3,296
15 to 26 weeks	1,052	1,122	1,061	1,227	1,096	1,078	1,146	1,166	1,229	1,189	1,210	1,445	1,605	1,508	1,634
27 weeks and over	820	1,162	1,170	1,136	1,074	1,139	1,102	1,126	1,135	1,183	1,190	1,278	1,349	1,507	1,662
Average (mean) duration, in weeks	11.9	13.7	13.3	14.3	14.1	14.3	13.7	13.6	13.1	12.8	13.5	14.1	13.9	14.2	14.6

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by 177,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

Definitions

Employed persons are all persons who received pay (including holiday and sick pay) for any part of the payroll period including the 12th of the month. Persons holding more than one job (about 5 percent of all persons in the labor force) are counted in each establishment which reports them.

Production workers in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 12–17 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities; in wholesale and retail trade; in finance, insurance, and real estate; and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to eliminate the effects of price change, using the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated to underlying wage-rate developments: fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries.

Hours represent the average weekly hours of production or nonsupervisory workers for which pay was received and are different from standard or scheduled hours. **Overtime hours** represent the portion of gross average weekly hours which were in excess of regular hours and for which overtime premiums were paid.

Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of May 1982 data, published in the July 1982 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Complete comparable historical unadjusted and seasonally adjusted data are published in a Supplement to Employment and Earnings (unadjusted data from April 1977 through February 1982 and seasonally adjusted data from January 1974 through February 1982) and in *Employment and Earnings, United States, 1909–78*, BLS Bulletin 1312-11 (for prior periods).

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9–20. See also *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976).

8. Employment by industry, selected years, 1950-81

[Nonagricultural payroll data, in thousands]

Year	Total	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale and retail trade	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services	Government: Total	Government: Federal	Government: State and local
1950	45,197	901	2,364	15,241	4,034	9,386	2,635	6,751	1,888	5,357	6,026	1,928	4,098
1955	50,641	792	2,839	16,882	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1960¹	54,189	712	2,926	16,796	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1964	58,283	634	3,097	17,274	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	632	3,232	18,062	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	627	3,317	19,214	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	613	3,248	19,447	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	606	3,350	19,781	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	619	3,575	20,167	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	623	3,588	19,367	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	609	3,704	18,623	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	628	3,889	19,151	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	642	4,097	20,154	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	697	4,020	20,077	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	752	3,525	18,323	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	779	3,576	18,997	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	813	3,851	19,682	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	851	4,229	20,505	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	958	4,463	21,040	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,147
1980ʳ	90,406	1,027	4,346	20,285	5,146	20,310	5,275	15,035	5,160	17,890	16,241	2,866	13,375
1981ʳ	91,105	1,132	4,176	20,173	5,157	20,551	5,358	15,192	5,301	18,592	16,024	2,772	13,253

¹Data include Alaska and Hawaii beginning in 1959.

r = revised.

9. Employment by State

[Nonagricultural payroll data, in thousands]

State	Apr. 1981	Mar. 1982	Apr. 1982ᵖ	State	Apr. 1981	Mar. 1982	Apr. 1982ᵖ
Alabama	1,349.3	1,332.8	1,337.5	Montana	281.0	286.5	290.7
Alaska	171.0	179.8	180.5	Nebraska	623.6	609.7	611.4
Arizona	1,045.6	1,030.1	1,040.7	Nevada	408.2	412.9	414.4
Arkansas	748.0	722.0	729.0	New Hampshire	387.3	389.6	389.0
California	9,891.8	10,084.7	10,080.2	New Jersey	3,072.4	3,037.6	3,048.6
Colorado	1,273.0	1,284.5	1,288.1	New Mexico	475.0	472.7	474.9
Connecticut	1,430.4	1,413.8	1,417.7	New York	7,259.0	7,229.3	7,249.0
Delaware	259.1	253.7	258.0	North Carolina	2,385.4	2,343.1	2,352.8
District of Columbia	612.2	603.8	602.0	North Dakota	244.9	245.5	247.6
Florida	3,735.4	3,828.0	3,839.9	Ohio	4,328.0	4,182.5	4,220.2
Georgia	2,181.2	2,158.7	2,164.2	Oklahoma	1,188.5	1,213.8	1,218.9
Hawaii	400.7	403.1	403.1	Oregon	1,021.7	971.3	970.7
Idaho	320.5	314.8	315.7	Pennsylvania	4,731.5	4,577.9	4,588.1
Illinois	4,720.8	4,618.3	4,624.6	Rhode Island	400.0	386.9	387.2
Indiana	2,122.7	2,035.9	2,032.5	South Carolina	1,204.8	1,180.8	1,188.1
Iowa	1,106.7	1,044.8	1,059.4	South Dakota	226.5	229.5	231.5
Kansas	954.7	939.8	938.8	Tennessee	1,751.5	1,720.0	1,720.8
Kentucky	1,186.6	1,164.7	1,167.7	Texas	6,050.8	6,298.1	6,307.5
Louisiana	1,614.0	1,630.6	1,628.3	Utah	552.7	560.3	560.6
Maine	412.0	398.9	400.0	Vermont	200.2	203.3	197.2
Maryland	1,723.1	1,682.7	1,683.5	Virginia	2,140.2	2,144.8	2,155.0
Massachusetts	2,668.2	2,608.3	2,625.1	Washington	1,605.6	1,550.7	1,553.3
Michigan	3,350.4	3,223.8	3,205.3	West Virginia	585.0	606.5	606.6
Minnesota	1,760.3	1,711.0	1,724.8	Wisconsin	1,908.8	1,857.0	1,864.2
Mississippi	824.5	809.4	808.6	Wyoming	203.9	210.7	213.3
Missouri	1,978.4	1,940.6	1,959.9	Virgin Islands	37.9	36.6	35.9

10. Employment by industry division and major manufacturing group

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1981								1982				
	1980	1981	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.p	May p
TOTAL	90,406	91,105	91,432	92,058	91,107	91,087	91,820	91,884	91,765	91,437	89,280	89,413	89,679	89,897	90,250
MINING	1,027	1,132	986	1,150	1,184	1,200	1,201	1,198	1,203	1,209	1,183	1,180	1,178	1,171	1,158
CONSTRUCTION	4,346	4,176	4,226	4,380	4,415	4,431	4,388	4,340	4,221	4,029	3,576	3,559	3,631	3,750	3,907
MANUFACTURING	20,285	20,173	20,262	20,446	20,246	20,370	20,499	20,271	20,025	19,725	19,353	19,298	19,207	19,059	19,049
Production workers	14,214	14,021	14,141	14,267	14,049	14,152	14,304	14,079	13,834	13,515	13,200	13,168	13,093	12,961	12,966
Durable goods	12,187	12,117	12,220	12,317	12,179	12,164	12,272	12,144	11,979	11,782	11,557	11,503	11,454	11,341	11,323
Production workers	8,442	8,301	8,426	8,486	8,320	8,302	8,423	8,297	8,135	7,922	7,739	7,705	7,664	7,561	7,549
Lumber and wood products	690.5	668.7	692.6	698.4	688.9	691.2	689.9	664.5	629.1	606.4	587.1	582.9	582.0	602.2	614.1
Furniture and fixtures	465.8	467.3	468.5	470.9	462.3	473.6	474.9	473.9	467.4	461.9	454.2	450.8	446.3	443.9	440.7
Stone, clay, and glass products	662.1	658.2	647.9	668.2	664.2	666.3	652.0	639.0	629.5	606.9	576.0	571.5	574.2	590.2	587.8
Primary metal industries	1,142.2	1,121.1	1,149.0	1,149.1	1,128.4	1,132.6	1,131.7	1,102.2	1,081.0	1,051.5	1,034.9	1,018.4	1,004.4	977.9	980.6
Fabricated metal products	1,613.1	1,592.4	1,605.6	1,616.6	1,583.6	1,589.9	1,615.8	1,591.8	1,570.4	1,538.3	1,508.7	1,500.3	1,481.3	1,474.5	1,484.3
Machinery, except electrical	2,494.0	2,507.0	2,501.3	2,524.9	2,512.2	2,507.1	2,536.2	2,525.1	2,510.0	2,494.7	2,464.8	2,458.5	2,428.8	2,389.3	2,388.8
Electric and electronic equipment	2,090.6	2,092.2	2,090.1	2,109.5	2,086.0	2,102.5	2,120.0	2,113.3	2,096.8	2,081.4	2,054.6	2,046.2	2,034.2	2,030.0	2,030.8
Transportation equipment	1,899.7	1,892.6	1,906.8	1,942.6	1,887.0	1,850.9	1,904.5	1,888.9	1,857.9	1,858.2	1,768.0	1,758.5	1,770.2	1,749.1	1,765.8
Instruments and related products	711.3	729.8	733.8	732.3	731.2	735.9	732.6	729.6	727.6	726.5	719.0	715.3	713.8	711.3	711.4
Miscellaneous manufacturing	418.8	419.7	408.3	414.9	407.5	417.0	423.8	425.0	421.5	408.6	389.6	391.3	392.3	389.9	389.7
Nondurable goods	8,098	8,056	8,042	8,129	8,067	8,206	8,227	8,127	8,046	7,943	7,796	7,795	7,753	7,718	7,726
Production workers	5,772	5,721	5,715	5,781	5,713	5,851	5,881	5,782	5,699	5,593	5,461	5,463	5,429	5,400	5,417
Food and kindred products	1,708.0	1,674.3	1,609.4	1,663.9	1,703.0	1,799.6	1,783.2	1,718.4	1,660.6	1,646.1	1,605.0	1,604.7	1,587.9	1,578.6	1,603.0
Tobacco manufactures	68.9	69.8	64.2	65.5	65.3	73.8	75.7	75.0	73.1	71.7	70.5	67.5	64.2	61.9	60.9
Textile mill products	847.7	822.5	827.6	824.1	819.6	829.7	821.9	816.4	808.1	798.2	777.8	776.8	780.0	771.8	784.4
Apparel and other textile products	1,263.5	1,244.0	1,258.6	1,271.8	1,216.2	1,280.3	1,270.5	1,257.9	1,243.5	1,216.5	1,175.8	1,194.4	1,184.5	1,166.4	1,168.1
Paper and allied products	692.8	687.8	688.0	698.5	691.8	695.5	687.1	686.4	681.1	676.0	668.3	665.8	665.1	663.1	660.7
Printing and publishing	1,252.1	1,265.6	1,259.9	1,264.0	1,264.0	1,265.9	1,270.0	1,274.5	1,279.4	1,286.3	1,273.8	1,276.9	1,279.1	1,274.9	1,270.8
Chemicals and allied products	1,107.4	1,107.3	1,110.1	1,121.6	1,116.7	1,112.0	1,110.1	1,104.4	1,100.1	1,094.9	1,090.0	1,087.5	1,087.1	1,081.2	1,079.1
Petroleum and coal products	197.9	215.6	217.5	220.0	221.1	220.7	218.0	216.8	215.9	212.5	204.7	203.2	203.7	203.3	208.5
Rubber and miscellaneous plastics products	728.8	736.1	741.1	750.9	738.8	749.2	752.9	740.0	730.5	718.3	710.8	708.5	699.8	701.5	702.3
Leather and leather products	232.9	233.0	237.2	240.1	229.4	230.1	237.4	235.8	232.4	223.5	219.0	212.5	211.8	213.4	217.0
TRANSPORTATION AND PUBLIC UTILITIES	5,146	5,157	5,151	5,199	5,181	5,180	5,227	5,209	5,188	5,157	5,085	5,051	5,049	5,063	5,059
WHOLESALE AND RETAIL TRADE	20,310	20,551	20,529	20,671	20,600	20,684	20,731	20,731	20,883	21,170	20,417	20,258	20,306	20,445	20,603
WHOLESALE TRADE	5,275	5,359	5,361	5,397	5,391	5,402	5,388	5,400	5,398	5,372	5,314	5,303	5,309	5,304	5,314
RETAIL TRADE	15,035	15,192	15,168	15,274	15,209	15,282	15,343	15,331	15,485	15,798	15,103	14,955	14,997	15,141	15,289
FINANCE, INSURANCE, AND REAL ESTATE	5,160	5,301	5,299	5,353	5,376	5,374	5,327	5,314	5,308	5,313	5,290	5,295	5,304	5,312	5,327
SERVICES	17,890	18,592	18,584	18,711	18,771	18,771	18,749	18,824	18,800	18,775	18,523	18,696	18,828	18,982	18,998
GOVERNMENT	16,241	16,024	16,388	16,168	15,334	16,087	15,529	16,030	16,137	16,108	15,862	16,095	16,176	16,145	16,159
Federal	2,866	2,772	2,782	2,825	2,833	2,803	2,735	2,737	2,729	2,729	2,717	2,733	2,725	2,730	2,733
State and local	13,375	13,253	13,606	13,343	12,501	13,284	12,794	13,293	13,408	13,379	13,145	13,362	13,451	13,415	13,426

NOTE: In accordance with usual practice, BLS has revised establishment survey data to reflect a new benchmark and updated seasonal adjustment factors. Because of these revisions, establishment data in this table may differ from data published earlier. See technical note, page 70.

11. Employment by industry division and major manufacturing group, seasonally adjusted

[Nonagricultural payroll data, in thousands]

Industry division and group	1981								1982				
	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.ᵖ	Mayᵖ
TOTAL	91,131	91,286	91,396	91,322	91,363	91,224	90,996	90,642	90,460	90,459	90,304	89,983	89,989
MINING	985	1,137	1,184	1,180	1,192	1,195	1,202	1,206	1,201	1,203	1,197	1,162	1,158
CONSTRUCTION	4,223	4,185	4,175	4,146	4,124	4,101	4,071	4,026	3,966	3,974	3,934	3,900	3,899
MANUFACTURING	20,332	20,334	20,379	20,311	20,267	20,087	19,903	19,676	19,517	19,454	19,319	19,154	19,120
Production workers	14,190	14,177	14,212	14,136	14,087	13,915	13,717	13,488	13,341	13,290	13,179	13,031	13,014
Durable goods	12,237	12,246	12,266	12,228	12,184	12,059	11,901	11,724	11,622	11,575	11,490	11,360	11,341
Production workers	8,428	8,427	8,439	8,389	8,345	8,218	8,061	7,885	7,793	7,759	7,685	7,564	7,553
Lumber and wood products	684	685	683	671	661	643	628	615	607	611	607	614	615
Furniture and fixtures	473	474	476	475	473	466	462	457	452	449	446	443	444
Stone, clay, and glass products	646	644	644	643	636	625	620	610	596	596	590	584	586
Primary metal industries	1,137	1,137	1,132	1,134	1,125	1,104	1,082	1,053	1,038	1,024	1,007	977	958
Fabricated metal products	1,613	1,611	1,617	1,610	1,604	1,577	1,553	1,529	1,515	1,505	1,496	1,479	1,472
Machinery, except electrical	2,506	2,516	2,527	2,532	2,536	2,532	2,511	2,486	2,459	2,446	2,419	2,378	2,365
Electric and electronic equipment	2,101	2,104	2,112	2,116	2,113	2,101	2,077	2,049	2,055	2,046	2,036	2,036	2,030
Transportation equipment	1,930	1,938	1,965	1,901	1,884	1,881	1,830	1,791	1,777	1,778	1,774	1,747	1,760
Instruments and related products	726	726	731	734	734	731	727	725	720	718	716	713	714
Miscellaneous manufacturing	411	411	419	412	413	412	411	409	403	400	397	391	388
Nondurable goods	8,095	8,088	8,113	8,083	8,083	8,028	8,002	7,952	7,895	7,879	7,829	7,794	7,779
Production workers	5,762	5,750	5,773	5,747	5,742	5,697	5,656	5,603	5,548	5,531	5,494	5,467	5,461
Food and kindred products	1,660	1,673	1,678	1,658	1,658	1,662	1,664	1,661	1,667	1,663	1,658	1,643	1,653
Tobacco manufactures	70	71	70	70	69	69	69	66	68	68	68	67	67
Textile mill products	828	830	835	829	827	814	804	794	780	777	780	774	755
Apparel and other textile products	1,250	1,251	1,255	1,250	1,253	1,243	1,235	1,222	1,201	1,201	1,186	1,166	1,162
Paper and allied products	690	690	691	691	695	685	681	677	674	670	668	664	662
Printing and publishing	1,262	1,263	1,269	1,271	1,274	1,276	1,276	1,276	1,275	1,276	1,278	1,275	1,273
Chemicals and allied products	1,109	1,111	1,110	1,107	1,110	1,107	1,103	1,100	1,096	1,093	1,088	1,082	1,078
Petroleum and coal products	217	217	217	216	216	215	215	214	210	208	207	205	208
Rubber and miscellaneous plastics products	745	747	750	752	746	734	725	716	712	708	703	704	706
Leather and leather products	235	235	239	235	235	233	230	224	222	215	213	214	215
TRANSPORTATION AND PUBLIC UTILITIES	5,158	5,162	5,166	5,166	5,161	5,162	5,150	5,128	5,125	5,115	5,100	5,089	5,084
WHOLESALE AND RETAIL TRADE	20,543	20,590	20,620	20,650	20,660	20,654	20,623	20,524	20,630	20,670	20,655	20,583	20,629
WHOLESALE TRADE	5,361	5,366	5,375	5,387	5,383	5,380	5,375	5,357	5,346	5,343	5,336	5,320	5,325
RETAIL TRADE	15,182	15,224	15,245	15,263	15,277	15,274	15,248	15,167	15,284	15,327	15,319	15,263	15,304
FINANCE, INSURANCE, AND REAL ESTATE	5,295	5,302	5,311	5,319	5,328	5,325	5,324	5,331	5,326	5,326	5,336	5,328	5,327
SERVICES	18,517	18,556	18,615	18,654	18,707	18,773	18,815	18,834	18,831	18,867	18,904	18,924	18,920
GOVERNMENT	16,078	16,020	15,964	15,894	15,904	15,917	15,908	15,917	15,864	15,850	15,859	15,843	15,852
Federal	2,776	2,777	2,775	2,769	2,764	2,757	2,749	2,756	2,741	2,737	2,736	2,730	2,728
State and local	13,302	13,243	13,189	13,125	13,140	13,160	13,159	13,161	13,123	13,113	13,123	13,113	13,124

NOTE: In accordance with usual practice, BLS has revised establishment survey data to reflect a new benchmark and updated seasonal adjustment factors. Because of these revisions, establishment data in this table may differ from data published earlier. See technical note, page 70.

12. Hours and earnings, by industry division, selected years, 1950–81

[Gross averages, production or nonsupervisory workers on nonagricultural payrolls]

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Total private			Mining			Construction			Manufacturing		
1950	$53.13	39.8	$1.335	$67.16	37.9	$1.772	$69.68	37.4	$1.863	$58.32	40.5	$1.440
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1960[1]	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	269.34	40.2	6.70
1980[r]	235.10	35.3	6.66	397.06	43.3	9.17	367.78	37.0	9.94	288.62	39.7	7.27
1981[r]	255.20	35.2	7.25	439.19	43.7	10.05	398.52	36.9	10.80	318.00	39.8	7.99
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950	....	....	....	$44.55	40.5	$1.100	$50.52	37.7	$1.340	....	....	....
1955	....	....	....	55.16	39.4	1.40	63.92	37.6	1.70	....	....	....
1960[1]	....	....	....	66.01	38.6	1.71	75.14	37.2	2.02	....	....	....
1964	$118.78	41.1	$2.89	74.66	37.9	1.97	85.79	37.3	2.30	$70.03	36.1	$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980[r]	351.25	39.6	8.87	176.46	32.2	5.48	209.60	36.2	5.79	190.71	32.6	5.85
1981[r]	382.18	39.4	9.70	190.95	32.2	5.93	229.05	36.3	6.31	208.97	32.6	6.41

[1] Data include Alaska and Hawaii beginning in 1959.

r = revised.

13. Weekly hours, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981								1982				
	1980	1981	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.ᵖ	Mayᵖ
TOTAL PRIVATE	35.3	35.2	35.2	35.4	35.6	35.6	35.1	35.2	35.1	35.2	33.9	34.8	34.7	34.8	34.9
MINING	43.3	43.7	43.9	42.3	43.6	44.2	43.9	44.5	44.4	44.8	42.9	43.6	43.8	42.7	42.5
CONSTRUCTION	37.0	36.9	37.0	37.2	37.8	37.4	35.8	37.6	37.1	37.1	33.3	35.9	37.0	36.5	37.5
MANUFACTURING	39.7	39.8	40.1	40.2	39.6	39.8	39.5	39.7	39.7	39.9	37.1	39.2	39.1	38.7	39.0
Overtime hours	2.8	2.8	2.9	3.0	2.8	3.0	2.9	2.8	2.6	2.6	2.2	2.3	2.3	2.1	2.3
Durable goods	40.1	40.2	40.6	40.6	40.0	40.2	39.8	40.1	40.1	40.4	37.7	39.7	39.6	39.2	39.5
Overtime hours	2.8	2.8	3.0	3.0	2.8	2.9	2.8	2.7	2.5	2.6	2.1	2.2	2.2	2.0	2.2
Lumber and wood products	38.5	38.7	39.6	38.5	38.7	39.0	37.9	38.2	37.7	38.1	33.7	37.5	37.6	37.3	37.9
Furniture and fixtures	38.1	38.4	38.5	38.9	37.8	38.6	37.7	38.6	38.1	38.9	32.5	37.4	37.6	37.1	37.1
Stone, clay, and glass products	40.8	40.6	41.1	41.2	40.8	41.0	40.6	40.5	40.5	40.1	37.4	39.2	39.8	40.0	40.4
Primary metal industries	40.1	40.5	40.9	40.9	40.3	40.3	40.8	39.7	38.7	38.6	38.4	39.6	39.0	38.8	38.6
Fabricated metal products	40.4	40.3	40.7	40.8	39.9	40.3	39.7	40.2	40.1	40.5	37.8	39.4	39.6	39.0	39.3
Machinery except electrical	41.0	40.9	41.2	41.1	40.5	40.7	40.4	40.7	41.0	41.6	39.2	40.7	40.4	39.8	39.9
Electric and electronic equipment	39.8	39.9	40.1	40.2	39.7	40.0	39.7	39.9	39.8	40.4	38.1	39.8	39.5	39.0	39.3
Transportation equipment	40.6	40.9	41.6	41.4	40.8	40.6	39.9	41.0	40.8	41.4	38.4	40.4	40.4	40.5	41.3
Instruments and related products	40.5	40.4	40.3	40.4	38.9	40.4	40.4	40.4	40.8	40.7	38.6	40.0	40.1	39.5	40.3
Miscellaneous manufacturing	38.7	38.8	38.9	39.0	38.5	38.9	38.7	39.3	39.5	39.1	38.6	38.4	38.7	38.1	38.1
Nondurable goods	39.0	39.1	39.4	39.5	39.1	39.4	39.1	39.1	39.1	39.2	38.2	38.6	38.3	38.0	38.3
Overtime hours	2.8	2.8	2.9	2.9	2.8	3.0	3.1	2.9	2.8	2.7	2.4	2.5	2.4	2.3	2.4
Food and kindred products	39.7	39.7	39.7	39.7	39.6	39.9	39.8	39.5	39.8	40.4	39.7	39.7	39.0	38.8	39.3
Tobacco manufactures	38.1	38.8	38.7	38.5	38.6	40.7	40.2	39.4	38.8	38.1	36.1	38.3	37.3	36.5	36.8
Textile mill products	40.1	39.6	40.2	40.4	39.6	39.9	38.9	39.4	39.2	38.6	31.2	38.1	37.7	37.3	37.8
Apparel and other textile products	35.4	35.7	36.0	36.3	36.0	36.3	35.2	35.8	35.8	35.5	30.0	35.2	35.1	34.4	34.9
Paper and allied products	42.2	42.5	42.5	42.7	42.4	42.4	43.2	42.4	42.3	42.7	41.3	42.0	41.7	41.8	41.5
Printing and publishing	37.1	37.3	37.3	37.2	37.2	37.5	37.4	37.2	37.3	37.9	36.4	37.1	37.1	36.8	36.7
Chemicals and allied products	41.5	41.6	41.5	41.6	41.5	41.4	42.2	41.5	41.6	41.8	40.8	41.1	40.7	40.7	41.0
Petroleum and coal products	41.8	43.2	43.6	43.5	43.7	43.0	44.4	43.1	43.1	42.6	43.2	42.2	42.4	42.6	42.5
Rubber and miscellaneous plastics products	40.0	40.3	40.8	40.9	39.9	40.4	39.7	40.2	39.9	40.1	37.8	38.9	39.7	39.5	39.8
Leather and leather products	36.7	36.8	37.4	38.1	36.5	36.9	36.0	36.7	36.6	36.4	33.3	35.3	35.8	35.1	35.5
TRANSPORTATION AND PUBLIC UTILITIES	39.6	39.4	39.3	39.7	39.7	39.5	39.2	39.1	39.2	39.3	38.5	39.2	39.0	39.0	39.1
WHOLESALE AND RETAIL TRADE	32.2	32.2	32.0	32.4	32.8	32.8	32.2	32.0	31.9	32.3	31.1	31.6	31.6	31.7	31.9
WHOLESALE TRADE	38.5	38.6	38.5	38.6	38.8	38.7	38.5	38.6	38.6	38.7	37.8	38.2	38.3	38.2	38.5
RETAIL TRADE	30.2	30.1	29.9	30.3	30.9	30.9	30.2	29.8	29.8	30.3	29.0	29.4	29.4	29.6	29.9
FINANCE, INSURANCE, AND REAL ESTATE	36.2	36.3	36.1	36.1	36.3	36.4	36.0	36.2	36.2	36.2	36.2	36.2	36.3	36.2	36.5
SERVICES	32.6	32.6	32.5	32.7	33.1	32.9	32.4	32.5	32.5	32.6	32.3	32.5	32.5	32.5	32.5

NOTE: In accordance with usual practice, BLS has revised establishment survey data to reflect a new benchmark and updated seasonal adjustment factors. Because of these revisions, establishment data in this table may differ from data published earlier. See technical note, page 70.

14. Weekly hours, by industry division and major manufacturing group, seasonally adjusted

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	1981								1982				
	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.^{p}	May^p
TOTAL PRIVATE	35.4	35.2	35.3	35.2	35.0	35.1	35.1	35.0	34.4	35.0	34.9	34.9	35.0
MANUFACTURING	40.2	40.1	40.0	39.9	39.4	39.5	39.3	39.1	37.6	39.4	39.0	39.0	39.1
Overtime hours	3.1	3.0	3.0	3.0	2.7	2.7	2.5	2.4	2.3	2.4	2.3	2.4	2.4
Durable goods	40.7	40.5	40.5	40.4	39.7	40.0	39.7	39.5	38.2	39.8	39.5	39.5	39.6
Overtime hours	3.1	3.0	3.0	3.0	2.7	2.6	2.4	2.3	2.2	2.2	2.2	2.2	2.3
Lumber and wood products	38.6	38.9	38.7	38.4	37.6	37.8	37.7	37.7	35.0	37.9	37.6	37.6	37.9
Furniture and fixtures	38.8	38.8	38.6	38.4	37.4	38.0	37.6	37.9	33.6	37.7	37.3	37.4	37.4
Stone, clay, and glass products	40.9	40.7	40.8	40.7	40.3	40.1	40.1	39.7	38.6	40.1	40.0	40.1	40.2
Primary metal industries	41.1	40.9	40.7	40.8	40.6	40.0	39.6	39.2	38.3	39.4	38.8	38.6	38.8
Fabricated metal products	40.8	40.6	40.5	40.4	39.8	40.0	39.7	39.5	38.1	39.7	39.5	39.4	39.4
Machinery, except electrical	41.4	41.1	41.2	41.1	40.3	40.8	40.7	40.4	39.3	40.7	40.2	40.1	40.0
Electric and electronic equipment	40.3	40.2	40.4	40.3	39.7	39.8	39.4	39.5	38.3	39.8	39.4	39.3	39.5
Transportation equipment	41.6	41.4	41.2	41.2	40.1	40.6	40.4	39.7	39.0	40.5	40.4	41.1	41.3
Instruments and related products	40.4	40.4	40.5	40.6	40.4	40.3	40.2	39.9	39.0	39.9	39.9	39.9	40.4
Miscellaneous manufacturing	39.1	39.0	39.0	38.9	38.4	38.0	39.0	38.5	37.3	38.6	38.6	38.4	38.3
Nondurable goods	39.4	39.4	39.2	39.2	38.9	38.9	38.7	38.6	36.8	38.9	38.5	38.4	38.4
Overtime hours	3.0	2.9	2.9	2.9	2.8	2.8	2.7	2.6	2.5	2.6	2.5	2.6	2.5
Food and kindred products	39.7	39.7	39.5	39.4	39.3	39.5	39.5	39.8	38.1	40.2	39.5	39.4	39.3
Textile mill products	40.2	40.1	40.1	39.8	38.8	38.0	38.7	37.8	32.3	38.3	37.6	37.8	37.8
Apparel and other textile products	35.9	35.9	35.8	35.9	35.2	35.5	35.5	35.1	31.4	35.5	35.0	34.7	34.8
Paper and allied products	42.8	42.7	42.7	42.5	43.0	42.4	42.0	41.8	41.3	42.3	41.8	42.1	41.8
Printing and publishing	37.4	37.4	37.3	37.3	37.1	37.1	37.1	37.1	36.9	37.4	37.1	37.1	36.8
Chemicals and allied products	41.6	41.7	41.7	41.7	42.2	41.5	41.2	41.3	41.0	41.2	40.7	40.7	41.2
Petroleum and coal products	43.8	43.4	43.1	42.9	43.1	42.2	42.5	42.7	44.3	43.5	43.5	42.6	42.7
Rubber and miscellaneous plastics products	41.1	40.9	40.5	40.5	39.7	39.9	39.6	39.4	37.9	40.0	39.6	39.8	40.1
Leather and leather products	37.0	37.1	36.4	36.7	36.2	36.7	36.5	36.1	34.1	35.6	35.8	35.5	35.1
WHOLESALE AND RETAIL TRADE	32.2	32.1	35.2	32.2	32.1	32.0	32.1	32.0	31.7	32.0	31.9	31.8	32.1
WHOLESALE TRADE	38.6	38.5	38.6	38.6	38.5	38.4	38.5	38.4	38.1	38.5	38.4	38.3	38.6
RETAIL TRADE	30.2	30.0	30.1	30.1	30.1	29.9	30.0	29.9	29.7	29.9	29.8	29.8	30.1
SERVICES	32.7	32.5	32.6	32.5	32.5	32.6	32.6	32.6	32.5	32.6	32.6	32.7	32.7

NOTE: The industry divisions of mining; construction; tobacco manufactures (a major manufacturing group, nondurable goods); transportation and public utilities; and finance, insurance, and real estate are no longer shown. This is because the seasonal component in these is small relative to the trend-cycle, or irregular components, or both, and consequently cannot be precisely separated.

NOTE: In accordance with usual practice, BLS has revised establishment survey data to reflect a new benchmark and updated seasonal adjustment factors. Because of these revisions, establishment data in this table may differ from data published earlier. See technical note, page 70.

15. Hourly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981								1982				
	1980	1981	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.[p]	May[p]
TOTAL PRIVATE	$6.66	$7.25	$7.17	$7.20	$7.24	$7.30	$7.40	$7.42	$7.47	$7.45	$7.55	$7.54	$7.55	$7.57	$7.61
MINING	9.17	10.05	9.88	9.93	10.09	10.12	10.27	10.25	10.39	10.41	10.65	10.62	10.62	10.66	10.71
CONSTRUCTION	9.94	10.80	10.57	10.64	10.79	10.92	11.07	11.05	11.18	11.26	11.59	11.32	11.33	11.29	11.28
MANUFACTURING	7.27	7.99	7.92	7.97	8.02	8.03	8.10	8.16	8.20	8.27	8.42	8.34	8.37	8.41	8.45
Durable goods	7.75	8.53	8.47	8.54	8.57	8.59	8.70	8.73	8.77	8.83	8.92	8.90	8.91	8.93	9.01
Lumber and wood products	6.55	7.00	6.92	7.09	7.15	7.13	7.16	7.10	7.16	7.16	7.38	7.27	7.29	7.25	7.35
Furniture and fixtures	5.49	5.91	5.84	5.90	5.92	5.99	6.01	6.06	6.05	6.12	6.28	6.19	6.21	6.22	6.25
Stone, clay, and glass products	7.50	8.27	8.20	8.31	8.40	8.41	8.53	8.50	8.54	8.56	8.70	8.62	8.65	8.72	8.77
Primary metal industries	9.77	10.81	10.68	10.75	10.78	10.99	11.22	10.97	11.10	11.08	11.23	11.20	11.15	11.23	11.28
Fabricated metal products	7.45	8.20	8.16	8.23	8.21	8.26	8.33	8.39	8.42	8.53	8.55	8.57	8.64	8.69	8.76
Machinery, except electrical	8.00	8.81	8.73	8.79	8.83	8.84	8.96	9.04	9.08	9.18	9.19	9.20	9.18	9.19	9.24
Electric and electronic equipment	6.94	7.62	7.51	7.56	7.65	7.73	7.75	7.80	7.83	7.90	7.96	7.96	8.01	8.00	8.09
Transportation equipment	9.35	10.39	10.33	10.45	10.44	10.37	10.49	10.74	10.74	10.78	10.79	10.82	10.89	10.88	11.02
Instruments and related products	6.80	7.43	7.30	7.33	7.43	7.55	7.59	7.60	7.68	7.81	7.93	7.94	8.00	8.06	8.17
Miscellaneous manufacturing	5.46	5.96	5.92	5.92	5.97	5.98	6.05	6.05	6.11	6.19	6.27	6.29	6.32	6.36	6.40
Nondurable goods	6.55	7.18	7.10	7.13	7.22	7.23	7.36	7.33	7.38	7.44	7.67	7.54	7.57	7.65	7.64
Food and kindred products	6.85	7.43	7.41	7.41	7.45	7.48	7.56	7.51	7.61	7.67	7.82	7.74	7.79	7.90	7.88
Tobacco manufactures	7.74	8.88	9.05	9.35	9.46	8.70	8.76	8.67	9.04	8.96	9.21	9.58	9.72	10.00	9.87
Textile mill products	5.07	5.52	5.40	5.41	5.50	5.65	5.69	5.72	5.73	5.72	5.76	5.76	5.76	5.79	5.77
Apparel and other textile products	4.56	4.96	4.96	4.97	4.92	4.96	5.04	5.05	5.04	5.04	5.18	5.13	5.15	5.18	5.15
Paper and allied products	7.84	8.60	8.42	8.54	8.73	8.67	8.85	8.82	8.80	8.86	9.06	8.99	9.00	9.12	9.17
Printing and publishing	7.53	8.18	8.08	8.11	8.20	8.25	8.37	8.40	8.42	8.46	8.58	8.56	8.58	8.60	8.64
Chemicals and allied products	8.30	9.12	8.90	9.07	9.16	9.19	9.38	9.37	9.42	9.53	9.68	9.66	9.71	9.79	9.77
Petroleum and coal products	10.10	11.38	11.30	11.31	11.43	11.32	11.55	11.47	11.58	11.59	11.91	12.29	12.32	12.50	12.44
Rubber and miscellaneous plastics products	6.52	7.16	7.13	7.14	7.18	7.23	7.29	7.30	7.31	7.38	7.51	7.49	7.45	7.53	7.53
Leather and leather products	4.58	4.99	4.98	4.98	4.97	4.97	5.08	5.09	5.11	5.15	5.19	5.22	5.24	5.31	5.29
TRANSPORTATION AND PUBLIC UTILITIES	8.87	9.70	9.57	9.61	9.67	9.87	9.85	9.94	10.05	10.06	10.10	10.13	10.07	10.11	10.14
WHOLESALE AND RETAIL TRADE	5.48	5.93	5.89	5.88	5.91	5.94	6.04	6.01	6.04	6.02	6.17	6.16	6.16	6.18	6.19
WHOLESALE TRADE	6.96	7.57	7.49	7.49	7.58	7.65	7.70	7.73	7.79	7.81	7.94	7.94	7.93	7.96	8.01
RETAIL TRADE	4.88	5.25	5.22	5.22	5.24	5.25	5.37	5.29	5.32	5.31	5.43	5.42	5.43	5.44	5.46
FINANCE, INSURANCE, AND REAL ESTATE	5.79	6.31	6.25	6.25	6.28	6.36	6.36	6.43	6.52	6.47	6.56	6.62	6.59	6.63	6.74
SERVICES	5.85	6.41	6.34	6.33	6.34	6.41	6.52	6.58	6.67	6.66	6.70	6.79	6.77	6.81	6.84

NOTE: In accordance with usual practice, BLS has revised establishment survey data to reflect a new benchmark and updated seasonal adjustment factors. Because of these revisions, establishment data in this table may differ from data published earlier. See technical note, page 70.

16. Hourly Earnings Index for production or nonsupervisory workers on private nonagricultural payrolls, by industry division

[Seasonally adjusted data: 1977=100]

Industry	1981									1982				Apr. 1982 to May 1982	May 1981 to May 1982[1]
	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.[p]	May[p]		
TOTAL PRIVATE (in current dollars)	137.6	138.4	139.1	140.5	141.4	142.0	143.0	143.5	144.9	145.0	145.4	146.2	147.4	.8	7.1
Mining[2]	145.8	147.4	149.0	149.5	151.7	151.4	153.4	153.4	156.2	156.0	156.0	156.5	157.6	.7	8.1
Construction	129.9	130.9	132.2	132.8	133.5	134.7	135.7	136.6	139.9	137.9	138.1	138.3	139.0	.5	7.0
Manufacturing	140.6	141.5	142.4	143.5	144.7	145.4	146.4	146.9	148.9	149.1	149.9	150.7	151.6	.6	7.8
Transportation and public utilities	138.7	139.6	139.0	141.6	141.5	142.3	143.5	144.3	145.5	146.0	146.3	146.3	147.5	.8	6.4
Wholesale and retail trade	137.2	137.6	138.4	139.7	141.0	140.5	141.3	141.7	142.1	142.5	142.8	143.7	144.8	.8	5.6
Finance, insurance, and real estate	136.8	137.1	137.8	140.1	140.4	141.4	142.6	142.0	143.1	143.3	143.8	144.7	147.5	2.0	7.8
Services	135.9	136.7	137.4	139.2	139.7	140.9	142.2	142.6	143.4	143.7	143.9	145.2	146.5	.9	7.8
TOTAL PRIVATE (in constant dollars)	93.0	92.9	92.2	92.5	92.1	92.1	92.3	92.3	92.9	92.8	93.3	93.7	(3)	(3)	(3)

[1] Over-the-year percent change before seasonal adjustment.

[2] This series is not seasonally adjusted because the seasonal component is small relative to the trend-cycle, irregular components, or both, and consequently cannot be separated with sufficient precision.

[3] Not available.

NOTE: In accordance with usual practice, BLS has revised establishment survey data to reflect a new benchmark and updated seasonal adjustment factors. Because of these revisions, establishment data in this table may differ from data published earlier. See technical note, page 70.

17. Weekly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981								1982				
	1980	1981	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.ᵖ	Mayᵖ
TOTAL PRIVATE:															
Current dollars	$235.10	$255.20	$252.38	$254.08	$257.74	$259.60	$259.74	$261.10	$260.20	$262.34	$256.66	$262.39	$261.89	$261.82	$265.59
Constant (1977) dollars	172.74	170.13	170.18	170.48	170.35	170.64	168.89	168.49	168.71	168.30	164.70	168.31	168.37	167.58	(¹)
MINING	397.06	439.19	424.95	420.04	439.92	447.30	459.85	458.13	461.32	466.37	458.89	463.03	465.16	454.78	$455.18
CONSTRUCTION	367.78	398.52	391.89	395.61	407.88	408.41	398.31	419.68	414.78	417.75	395.95	409.38	410.21	411.72	429.75
MANUFACTURING															
Current dollars	288.62	318.00	317.58	320.30	317.59	320.40	322.32	323.85	325.94	329.57	312.39	326.83	327.27	325.47	329.55
Constant (1977) dollars	212.06	212.00	214.15	214.31	209.91	210.37	208.57	210.22	210.71	213.02	201.02	208.70	210.30	208.23	(¹)
Durable goods	310.78	342.81	343.88	346.72	342.80	346.22	348.25	350.07	351.88	356.73	336.39	352.90	352.84	350.08	$355.00
Lumber and wood products	252.18	270.80	274.03	280.88	276.71	276.07	271.36	271.22	269.86	272.80	248.71	272.83	273.73	270.43	278.94
Furniture and fixtures	208.17	226.94	224.94	229.51	223.76	231.21	226.59	232.92	230.51	236.07	204.10	231.31	233.89	230.76	231.88
Stone, clay, and glass products	298.80	335.76	337.82	342.57	342.72	344.61	346.32	344.25	345.67	343.35	325.36	337.90	344.27	348.80	354.31
Primary metal industries	391.78	437.81	436.81	438.66	434.43	442.80	457.78	435.51	440.67	438.77	431.20	443.52	434.66	436.72	435.41
Fabricated metal products	303.88	330.46	332.11	335.78	327.58	332.80	330.70	337.39	337.84	345.47	323.19	337.00	342.14	339.81	344.27
Machinery except electrical	358.09	392.33	389.66	391.27	387.62	389.79	391.88	387.93	372.28	381.89	367.25	374.44	370.67	385.76	388.88
Electric and electronic equipment	276.21	304.04	301.15	302.91	303.71	308.20	307.88	311.22	311.83	318.16	304.01	318.81	318.49	313.17	317.54
Transportation equipment	379.61	424.95	420.73	432.60	425.95	421.02	418.95	440.24	438.19	445.46	414.34	437.13	438.95	440.64	455.13
Instruments and related products	275.40	300.17	294.19	296.13	296.46	305.02	308.04	307.04	313.24	317.87	306.10	317.00	320.80	319.16	329.25
Miscellaneous manufacturing	211.30	231.25	230.29	230.86	229.65	231.84	234.14	237.77	241.35	242.08	235.46	241.54	244.89	242.32	243.84
Nondurable goods	255.45	280.74	279.74	281.64	282.30	284.66	287.78	288.60	288.56	291.65	277.65	291.04	289.60	289.70	292.81
Food and kindred products	271.95	294.97	294.18	294.18	295.02	298.45	300.89	298.65	302.88	309.67	302.63	307.29	303.81	306.02	309.69
Tobacco manufactures	294.89	344.54	350.62	359.96	365.16	354.09	352.15	341.60	350.75	341.38	332.48	368.15	362.86	365.00	363.22
Textile mill products	203.31	218.59	217.08	218.36	217.80	225.44	221.34	225.37	224.62	220.79	179.71	218.46	217.15	215.97	218.11
Apparel and other textile products	161.42	177.07	178.56	180.41	177.12	180.05	177.41	180.79	180.43	178.02	155.40	180.58	180.77	178.19	179.74
Paper and allied products	330.65	365.50	357.85	364.68	370.15	367.61	368.64	373.97	376.05	382.59	374.18	377.58	378.55	381.22	380.56
Printing and publishing	279.36	305.11	301.28	301.89	305.04	309.38	313.04	312.48	314.07	321.39	312.31	317.58	318.89	318.49	317.08
Chemicals and allied products	344.45	379.39	373.08	377.31	380.14	380.47	385.84	388.86	391.87	398.35	394.94	397.85	395.29	398.46	400.57
Petroleum and coal products	422.18	481.62	482.88	481.89	488.40	486.76	512.02	494.36	488.10	493.73	514.51	518.84	522.37	532.80	528.70
Rubber and miscellaneous plastics products	260.90	286.56	290.99	292.03	286.48	292.09	289.41	293.46	291.67	295.94	283.09	298.66	295.77	297.44	300.45
Leather and leather products	168.09	183.63	185.50	189.74	181.41	183.30	183.24	186.80	187.03	187.46	172.83	184.27	188.54	188.38	187.80
TRANSPORTATION AND PUBLIC UTILITIES	351.25	382.18	376.10	381.52	383.90	386.87	380.04	388.65	393.99	385.36	388.65	387.10	392.73	394.29	398.47
WHOLESALE AND RETAIL TRADE	176.46	190.65	188.49	190.51	193.65	194.63	194.49	192.32	192.88	194.45	191.89	194.66	194.66	195.91	197.48
WHOLESALE TRADE	267.96	292.20	289.37	289.11	294.10	296.06	296.45	298.38	300.69	302.25	300.13	303.31	303.72	304.07	308.39
RETAIL TRADE	147.38	158.03	156.08	158.17	161.82	162.23	162.17	157.64	158.54	160.89	157.47	159.36	159.04	161.02	163.25
FINANCE, INSURANCE, AND REAL ESTATE	209.60	229.05	225.63	225.93	227.96	232.23	230.04	232.77	236.02	234.21	237.47	239.84	239.22	240.01	246.01
SERVICES	190.71	208.97	206.05	208.89	209.65	210.89	211.25	213.65	216.76	217.12	219.32	220.66	220.03	221.33	222.30

[1] Not available.

NOTE: In accordance with usual practice, BLS has revised establishment survey data to reflect a new benchmark and updated seasonal adjustment factors. Because of these revisions, establishment data in this table may differ from data published earlier. See technical note, page 70.

UNEMPLOYMENT INSURANCE DATA

NATIONAL UNEMPLOYMENT INSURANCE DATA are compiled monthly by the Employment and Training Administration of the U.S. Department of Labor from monthly reports of unemployment insurance activity prepared by State agencies. Railroad unemployment insurance data are prepared by the U.S. Railroad Retirement Board.

Definitions

Data for **all programs** represent an unduplicated count of insured unemployment under State programs, Unemployment Compensation for Ex-Servicemen, and Unemployment Compensation for Federal Employees, and the Railroad Insurance Act.

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

An **application** for benefits is filed by a railroad worker at the beginning of his first period of unemployment in a benefit year; no application is required for subsequent periods in the same year. **Number of payments** are payments made in 14-day registration periods. The **average amount of benefit payment** is an average for all compensable periods, not adjusted for recovery of overpayments or settlement of underpayments. However, **total benefits paid** have been adjusted.

18. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1981									1982			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.p
All programs:													
Insured unemployment	3,453	3,111	2,849	3,012	2,874	2,690	2,753	3,229	3,935	4,691	4,723	4,882	4,760
State unemployment insurance program:[1]													
Initial claims[2]	1,647	1,417	1,741	2,114	1,810	1,691	1,986	2,296	3,272	3,326	2,272	2,418	2,410
Insured unemployment (average weekly volume)	2,988	2,691	2,596	2,743	2,656	2,469	2,592	3,061	3,778	4,470	4,376	4,282	4,087
Rate of insured unemployment	3.4	3.1	3.0	3.1	3.0	2.9	3.0	3.5	4.3	5.1	5.0	4.9	4.6
Weeks of unemployment compensated	11,871	9,790	9,829	10,486	9,594	9,565	9,424	10,052	14,582	15,952	15, 631	18,144	16,312
Average weekly benefit amount for total unemployment	$105.96	$105.49	$99.02	$103.47	$105.94	$107.38	$108.92	$110.52	$112.83	$114.83	$116.95	$117.10	$117.77
Total benefits paid	$1,226,815	$1,006,341	$1,012,764	$1,081,889	$1,004,884	$1,001,025	$997,757	$1,090,810	$1,592,546	$1,764,298	$1,781,830	$2,072,642	$1,867,457
Unemployment compensation for ex-servicemen:[3]													
Initial claims[1]	16	15	19	22	19	15	11	9	11	8	8	10	9
Insured unemployment (average weekly volume)	46	43	42	44	44	34	26	22	19	16	13	11	10
Weeks of unemployment compensated	214	183	192	203	190	153	116	91	93	65	49	46	37
Total benefits paid	$23,046	$19,985	$21,145	$22,785	$21,425	$17,144	$12,952	$10,043	$10,155	$7,098	$5,311	$5,141	$4,085
Unemployment compensation for Federal civilian employees:[4]													
Initial claims	12	11	13	15	17	18	20	16	17	17	12	13	14
Insured unemployment (average weekly volume)	31	27	25	25	25	29	32	36	38	40	40	38	33
Weeks of unemployment compensated	135	107	105	105	102	100	112	127	174	182	154	172	146
Total benefits paid	$13,701	$11,023	$10,705	$10,805	$9,543	$10,485	$11,719	$13,491	$18,891	$18,040	$17,517	$19,677	$18,916
Railroad unemployment insurance:													
Applications	6	6	26	41	13	15	21	13	19	22	11	9	5
Insured unemployment (average weekly volume)	41	35	30	28	29	34	40	44	54	75	67	65	57
Number of payments	94	79	66	32	60	74	86	83	117	153	140	154	130
Average amount of benefit payment	$201.12	$189.43	$201.06	$199.63	$202.53	$207.86	$197.26	$207.08	$212.33	$213.39	$214.07	$215.71	$209.46
Total benefits paid	$19,236	$15,429	$16,206	$11,541	$7,071	15,046	15,984	$16,377	$25,292	$30,544	$29,011	$33,853	$26,262
Employment service:[5]													
New applications and renewals	....	....	12,868	....	....	16,502	....	....	r4,081	....	....	7,439	....
Nonfarm placements	....	....	2,446	....	....	3,509	....	....	r731	....	....	1,232	....

[1] Initial claims and State insured unemployment include data under the program for Puerto Rican sugarcane workers.

[2] Includes interstate claims for the Virgin Islands. Excludes transition claims under State programs.

[3] Excludes data on claims and payments made jointly with other programs.

[4] Excludes data on claims and payments made jointly with State programs.

[5] Cumulative total for fiscal year (October 1-September 30). Data computed quarterly.

NOTE: Data for Puerto Rico and the Virgin Islands included. Dashes indicate data not available.

r = revised.

PRICE DATA

PRICE DATA are gathered by the Bureau of Labor Statistics from retail and primary markets in the United States. Price indexes are given in relation to a base period (1967 = 100, unless otherwise noted).

Definitions

The **Consumer Price Index** is a monthly statistical measure of the average change in prices in a fixed market basket of goods and services. Effective with the January 1978 index, the Bureau of Labor Statistics began publishing CPI's for two groups of the population. One index, a new CPI for All Urban Consumers, covers 80 percent of the total noninstitutional population; and the other index, a revised CPI for Urban Wage Earners and Clerical Workers, covers about half the new index population. The All Urban Consumers index includes, in addition to wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctor's and dentist's fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items is kept essentially unchanged between major revisions so that only price changes will be measured. Prices are collected from over 18,000 tenants, 24,000 retail establishments, and 18,000 housing units for property taxes in 85 urban areas across the country. All taxes directly associated with the purchase and use of items are included in the index. Because the CPI's are based on the expenditures of two population groups in 1972–73, they may not accurately reflect the experience of individual families and single persons with different buying habits.

Though the CPI is often called the "Cost-of-Living Index," it measures only price change, which is just one of several important factors affecting living costs. Area indexes do not measure differences in the level of prices among cities. They only measure the average change in prices for each area since the base period.

Producer Price Indexes measure average changes in prices received in primary markets of the United States by producers of commodities in all stages of processing. The sample used for calculating these indexes contains about 2,800 commodities and about 10,000 quotations per month selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The universe includes all commodities produced or imported for sale in commercial transactions in primary markets in the United States.

Producer Price Indexes can be organized by stage of processing or by commodity. The stage of processing structure organizes products by degree of fabrication (that is, finished goods, intermediate or semifinished goods, and crude materials). The commodity structure organizes products by similarity of end-use or material composition.

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States, from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire. Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

In calculating Producer Price Indexes, price changes for the various commodities are averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1972. The detailed data are aggregated to obtain indexes for stage of processing groupings, commodity groupings, durability of product groupings, and a number of special composite groupings.

Price indexes for the output of selected SIC industries measure average price changes in commodities produced by particular industries, as defined in the *Standard Industrial Classification Manual 1972* (Washington, U.S. Office of Management and Budget, 1972). These indexes are derived from several price series, combined to match the economic activity of the specified industry and weighted by the value of shipments in the industry. They use data from comprehensive industrial censuses conducted by the U.S. Bureau of the Census and the U.S. Department of Agriculture.

Notes on the data

Beginning with the May 1978 issue of the *Review*, regional CPI's cross classified by population size, were introduced. These indexes will enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes will be published bimonthly. (See table 21.)

For further details about the new and the revised indexes and a comparison of various aspects of these indexes with the old unrevised CPI, see *Facts About the Revised Consumer Price Index*, a pamphlet in the Consumer Price Index Revision 1978 series. See also *The Consumer Price Index: Concepts and Content Over the Years*, Report 517, revised edition (Bureau of Labor Statistics, May 1978).

For interarea comparisons of living costs at three hypothetical standards of living, see the family budget data published in the *Handbook of Labor Statistics, 1977*, Bulletin 1966 (Bureau of Labor Statistics, 1977), tables 122–133. Additional data and analysis on price changes are provided in the *CPI Detailed Report* and *Producer Prices and Price Indexes*, both monthly publications of the Bureau.

As of January 1976, the Wholesale Price Index (as it was then called) incorporated a revised weighting structure reflecting 1972 values of shipments. From January 1967 through December 1975, 1963 values of shipments were used as weights.

For a discussion of the general method of computing consumer, producer, and industry price indexes, see *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976), chapters 13–15. See also John F. Early, "Improving the measurement of producer price change," *Monthly Labor Review*, April 1978, pp. 7–15. For industry prices, see also Bennett R. Moss, "Industry and Sector Price Indexes," *Monthly Labor Review*, August 1965, pp. 974–82.

19. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967-81

[1967 = 100]

Year	All items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	116.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.2	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	6.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	267.2	11.3	203.7	8.5	213.6	8.8
1981	272.3	10.2	267.8	7.7	293.2	11.4	186.6	5.2	281.3	12.3	295.1	10.4	219.0	7.5	233.3	9.2

20. Consumer Price Index for All Urban Consumers and revised CPI for Urban Wage Earners and Clerical Workers: U.S. city average—general summary and groups, subgroups, and selected items

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981			1982				1981			1982			
	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
All items	266.8	280.7	281.5	282.5	283.4	283.1	284.3	266.8	280.4	281.1	282.1	282.9	282.5	283.7
Food and beverages	265.7	269.9	270.5	273.6	275.8	275.6	276.5	266.1	270.3	270.8	273.9	276.0	275.9	276.8
Housing	294.6	304.2	305.2	306.1	307.3	306.7	308.4	294.3	303.6	304.7	305.6	306.7	306.2	308.2
Apparel and upkeep	186.4	191.3	190.5	187.3	189.0	191.1	191.9	186.0	190.5	189.4	186.5	187.3	190.5	191.2
Transportation	275.3	289.1	289.8	289.9	288.0	285.1	282.9	276.3	290.8	291.5	291.6	289.6	286.6	284.3
Medical care	287.0	308.2	310.2	313.4	316.2	318.8	321.7	289.1	307.1	309.1	312.0	314.9	317.4	320.2
Entertainment	218.2	226.8	227.3	229.2	231.2	232.8	233.9	217.0	224.3	224.4	226.1	228.1	229.5	230.5
Other goods and services	229.9	245.9	246.7	248.4	250.3	252.2	253.9	227.9	242.5	243.5	245.0	247.1	249.3	250.9
Commodities	250.9	258.0	258.4	258.8	259.5	258.9	258.9	251.2	258.5	258.9	259.3	259.9	259.1	259.2
Commodities less food and beverages	240.0	248.3	248.7	248.0	248.1	247.1	247.0	240.5	249.1	249.3	248.7	248.6	247.5	247.2
Nondurables less food and beverages	263.8	268.7	268.7	265.6	265.3	262.4	259.7	265.5	269.0	268.9	267.8	267.5	265.3	261.3
Durables	221.1	232.2	233.7	233.4	233.7	233.5	235.8	219.3	232.3	232.7	232.4	232.5	232.4	234.8
Services	295.4	320.6	321.8	323.9	325.3	325.5	328.4	295.9	321.1	322.4	324.3	325.5	325.8	329.1
Rent, residential	204.2	215.0	216.5	217.8	218.6	218.6	220.1	203.9	214.5	216.0	217.4	218.1	219.1	218.6
Household services less rent	353.3	389.2	390.4	392.4	393.7	392.5	397.3	356.2	393.6	394.8	396.5	397.7	396.6	402.3
Transportation services	254.4	282.2	284.2	286.8	287.6	289.8	290.3	253.1	282.3	283.6	285.9	286.7	287.8	289.2
Medical care services	308.8	333.7	335.7	339.4	342.4	345.1	348.0	312.2	332.0	334.0	337.5	340.6	343.0	345.8
Other services	234.4	248.7	249.5	251.7	253.0	254.0	256.3	233.8	247.2	248.0	250.0	251.3	252.4	253.8
Special indexes:														
All items less food	264.2	280.1	280.8	281.4	282.1	281.7	282.9	264.4	280.1	280.7	281.3	281.7	281.3	282.5
All items less mortgage interest costs	253.6	264.2	264.9	266.1	267.1	267.2	267.9	254.2	264.6	265.2	266.4	267.2	267.3	267.9
Commodities less food	238.0	246.2	246.5	245.9	246.0	245.2	245.0	238.6	247.0	247.2	246.6	246.6	245.6	245.3
Nondurables less food	258.1	261.1	261.1	260.2	260.1	258.4	256.0	260.7	263.4	263.3	262.4	262.2	260.2	258.6
Nondurables less food and apparel	287.7	300.1	300.7	301.0	300.5	296.6	291.4	289.9	302.0	302.5	302.6	302.0	297.8	292.3
Nondurables	265.9	269.5	269.8	270.8	271.7	270.7	269.3	267.3	270.7	270.9	271.9	272.8	271.8	270.1
Services less rent	312.8	340.8	342.0	344.2	345.7	345.7	349.1	313.5	341.6	342.9	345.0	346.3	346.4	350.2
Services less medical care	291.8	316.9	318.1	320.0	321.1	321.1	324.0	292.0	317.5	318.7	320.5	321.6	321.8	324.9
Domestically produced farm foods	255.3	258.3	259.1	262.4	265.1	263.8	264.5	255.0	257.8	258.2	261.4	264.0	262.7	263.5
Selected beef cuts	267.7	271.9	270.7	269.6	271.7	272.0	275.1	270.7	273.2	271.9	271.1	273.1	273.3	276.4
Energy	408.8	414.1	414.6	418.4	413.0	406.1	395.7	414.0	417.3	417.6	419.0	415.4	407.9	398.9
All items less energy	256.6	270.4	271.1	272.1	273.4	273.6	275.7	254.7	269.2	269.9	270.9	272.1	272.3	274.5
All items less food and energy	250.1	267.2	267.9	268.5	269.5	269.8	272.2	248.9	265.9	266.6	267.1	268.0	268.3	270.8
Commodities less food and energy	213.5	223.8	224.2	223.7	224.5	225.3	227.2	212.2	223.0	223.3	222.8	223.6	224.5	226.4
Energy commodities	458.4	449.2	449.0	446.4	440.1	424.5	408.6	458.3	449.0	448.7	447.0	440.7	425.0	408.9
Services less energy	292.7	317.7	318.9	320.5	321.9	321.5	324.5	293.2	318.2	319.5	321.0	322.2	321.8	325.2
Purchasing power of the consumer dollar, 1967 = $1	$0.375	$0.356	$0.355	$0.354	$0.353	$0.353	$0.352	$0.375	$0.357	$0.356	$0.354	$0.353	$0.354	$0.352

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981			1982				1981			1982			
	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
FOOD AND BEVERAGES	265.7	269.9	270.5	273.6	275.8	275.6	276.5	266.1	270.3	270.8	273.9	276.0	275.9	276.8
Food	272.9	277.1	277.8	281.0	283.3	283.0	283.9	273.2	277.4	277.9	281.1	283.4	283.1	284.1
Food at home	266.7	271.0	271.7	275.3	278.0	277.1	277.9	266.2	270.4	270.8	274.4	277.0	276.2	277.0
Cereals and bakery products	268.3	276.3	277.7	279.8	280.9	281.3	281.7	269.0	275.5	276.6	278.6	279.8	280.0	280.4
Cereals and cereal products (12/77 = 100)	145.4	148.9	151.5	153.0	154.0	153.9	153.6	148.9	152.1	152.5	153.9	155.0	154.8	154.6
Flour and prepared flour mixes (12/77 = 100)	137.1	138.4	137.8	138.1	139.1	139.2	139.7	139.2	140.2	138.4	138.6	138.6	138.6	140.1
Cereal (12/77 = 100)	147.8	157.4	160.2	163.1	164.8	165.2	165.4	148.9	158.9	162.1	165.1	166.8	167.2	167.4
Rice, pasta, and cornmeal (12/77 = 100)	148.5	149.6	151.7	151.1	152.4	151.2	149.8	151.4	153.8	152.9	152.4	153.6	152.4	150.8
Bakery products (12/77 = 100)	140.8	144.0	145.4	148.4	148.8	147.1	147.5	140.1	143.7	144.3	145.3	145.7	146.0	146.3
White bread	233.2	241.3	241.5	243.3	243.8	242.3	242.8	232.1	237.8	237.4	239.4	240.0	239.3	239.8
Other breads (12/77 = 100)	138.5	142.8	143.4	143.9	143.7	145.1	145.2	141.2	144.9	145.3	146.7	145.5	147.0	147.1
Fresh biscuits, rolls, and muffins (12/77 = 100)	140.4	145.2	145.9	146.5	146.4	146.4	147.8	138.7	141.9	141.9	142.5	142.8	144.6	143.8
Fresh cakes and cupcakes (12/77 = 100)	142.1	145.0	144.9	147.2	147.0	148.0	148.4	140.8	143.2	143.7	145.8	145.8	146.4	146.8
Cookies (12/77 = 100)	141.2	146.3	147.6	148.1	149.2	149.4	150.2	141.8	146.8	148.4	149.0	150.1	150.2	151.2
Crackers, bread, and cracker products (12/77 = 100)	130.9	133.1	134.2	133.4	135.4	135.3	137.3	131.1	133.4	135.6	134.7	136.8	136.5	138.7
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	141.7	144.8	145.4	146.2	147.0	148.3	149.8	141.7	145.8	147.8	148.9	149.5	148.7	149.3
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	144.0	149.2	149.3	151.2	151.5	153.5	153.4	139.0	143.1	143.0	144.7	144.8	146.8	146.5
Meats, poultry, fish, and eggs	247.7	254.2	253.7	253.7	256.8	256.9	258.3	247.1	254.0	253.1	253.3	256.4	256.4	257.8
Meats, poultry, and fish	253.0	259.2	258.4	258.1	261.2	262.1	264.2	252.2	258.8	257.7	258.6	260.7	261.5	263.6
Meats	251.0	258.6	258.7	257.8	260.2	261.2	263.0	250.7	259.3	257.9	257.3	259.7	260.6	262.8
Beef and veal	267.4	271.5	270.5	269.4	271.5	271.7	274.8	269.5	272.2	270.9	270.1	272.2	272.3	275.3
Ground beef other than canned	264.8	266.1	264.5	262.2	265.0	265.8	268.9	266.0	266.0	265.9	263.7	266.3	266.9	267.9
Chuck roast	281.4	282.6	282.2	279.6	285.8	284.3	286.4	281.8	282.6	281.5	288.5	285.0	283.1	284.1
Round roast	242.8	245.0	242.6	241.6	245.3	243.0	244.9	247.5	248.2	245.9	244.7	248.9	245.8	247.9
Round steak	252.9	256.7	254.6	257.5	256.1	258.8	262.8	251.3	254.8	252.2	258.1	254.4	256.4	260.8
Sirloin steak	261.5	262.0	260.1	258.2	257.1	260.6	271.1	262.7	260.7	260.7	258.9	257.8	262.2	272.4
Other beef and veal (12/77 = 100)	158.1	161.1	161.0	160.9	161.4	161.5	163.7	154.9	159.2	159.1	159.3	159.7	158.8	162.1
Pork	217.4	235.6	234.3	234.7	238.9	238.5	241.6	216.7	235.9	233.8	234.4	236.5	238.9	241.0
Bacon	208.0	236.1	237.2	236.5	245.6	246.6	255.9	210.0	242.8	240.5	250.3	249.3	253.3	259.7
Chops	209.2	217.0	212.4	218.2	222.1	216.3	223.4	208.3	218.2	211.0	217.6	220.2	214.7	221.7
Ham other than canned (12/77 = 100)	95.2	108.9	109.1	107.3	107.9	109.2	106.4	92.6	108.6	108.3	104.8	104.7	108.5	102.8
Sausage	277.4	298.1	299.1	297.6	300.0	305.8	305.7	280.1	299.2	300.0	298.8	301.0	300.6	308.3
Canned ham	239.1	243.1	244.3	245.4	246.1	247.6	245.6	230.8	247.0	247.7	249.0	249.9	251.2	248.9
Other pork (12/77 = 100)	123.4	131.1	130.0	129.5	133.8	132.6	136.2	123.8	130.9	129.2	128.8	133.1	131.7	134.5
Other meats	256.4	260.5	260.6	258.1	258.1	262.4	262.8	253.4	259.9	259.7	257.3	257.4	261.7	261.8
Frankfurters	253.5	259.9	261.0	259.7	258.0	260.5	258.5	252.8	260.9	260.0	258.1	257.1	259.0	258.4
Bologna, liverwurst, and salami (12/77 = 100)	143.5	146.7	146.4	145.4	146.1	149.2	150.2	142.6	145.9	146.3	145.4	148.2	149.4	150.3
Other lunchmeats (12/77 = 100)	127.9	132.1	132.6	132.2	131.7	133.7	133.2	128.4	130.6	130.6	130.2	129.7	131.7	131.2
Lamb and organ meats (12/77 = 100)	143.1	141.7	140.7	138.6	137.7	141.0	142.6	143.8	144.6	143.9	141.4	141.0	144.2	145.6
Poultry	196.8	192.3	191.7	194.2	196.7	194.7	193.3	194.6	190.6	188.5	192.4	193.8	192.8	191.5
Fresh whole chicken	198.0	190.9	190.1	193.1	198.3	195.1	194.1	194.1	188.5	187.8	190.9	194.4	192.8	192.0
Fresh and frozen chicken parts (12/77 = 100)	127.5	127.3	128.1	129.5	128.9	127.5	127.6	125.6	126.5	126.3	129.8	127.1	125.9	125.9
Other poultry (12/77 = 100)	125.9	122.2	120.7	123.2	123.2	123.9	121.3	126.3	121.5	119.8	123.0	122.6	123.3	120.8
Fish and seafood	359.7	358.9	359.6	373.3	373.8	376.3	382.0	353.7	356.6	358.6	372.4	373.2	375.5	381.4
Canned fish and seafood (12/77 = 100)	139.8	141.5	140.7	140.6	140.9	141.0	141.5	136.6	141.0	140.2	140.0	140.6	140.5	140.8
Fresh and frozen fish and seafood (12/77 = 100)	135.9	133.9	134.7	143.2	143.2	144.7	147.9	133.6	132.7	134.4	143.0	143.2	144.6	148.0
Eggs	184.3	194.7	198.0	189.4	205.1	195.2	188.9	185.5	196.7	198.8	190.6	206.1	199.3	187.9
Dairy products	243.5	246.0	245.5	245.8	246.5	246.5	247.5	243.8	244.7	244.9	245.2	245.8	245.9	246.0
Fresh milk and cream (12/77 = 100)	134.6	134.9	135.2	135.1	135.5	135.3	135.9	134.7	134.6	134.6	134.6	134.9	134.8	135.3
Fresh whole milk	220.4	220.8	221.2	221.2	221.5	221.7	222.2	220.2	220.1	220.2	220.2	220.5	220.8	221.3
Other fresh milk and cream (12/77 = 100)	134.5	134.9	135.3	135.1	135.8	136.1	136.2	135.2	134.9	134.9	134.7	135.5	134.6	135.7
Processed dairy products (12/77 = 100)	142.0	143.5	143.9	144.4	144.8	144.9	145.6	142.6	144.0	144.2	144.7	145.1	145.3	145.9
Butter	244.3	248.0	248.7	249.3	248.9	250.1	250.1	247.7	250.2	251.3	252.0	251.4	252.7	252.7
Cheese (12/77 = 100)	140.6	141.1	141.0	142.0	142.8	143.3	143.7	140.5	141.1	141.3	142.3	143.1	143.6	144.0
Ice cream and related products (12/77 = 100)	146.7	149.3	150.3	150.8	150.0	149.5	150.9	147.8	149.4	149.4	149.9	149.1	149.9	150.2
Other dairy products (12/77 = 100)	135.7	138.7	139.7	138.4	140.0	138.5	139.9	136.1	140.2	140.5	138.1	140.8	140.3	140.8
Fruits and vegetables	281.9	272.0	278.4	294.7	301.5	293.1	294.0	280.0	268.1	272.6	291.3	297.4	288.1	290.3
Fresh fruits and vegetables	296.4	267.8	274.9	308.0	318.6	302.1	304.1	294.5	261.9	269.4	303.1	313.4	296.1	298.9
Fresh fruits	271.6	276.1	269.6	278.7	291.2	297.8	306.7	266.6	268.0	260.5	267.0	280.1	287.3	295.5
Apples	231.1	248.7	261.2	273.0	279.5	288.7	287.5	232.1	240.1	261.2	272.6	279.8	288.5	287.8
Bananas	266.6	249.4	254.9	253.5	251.0	263.0	266.5	262.2	248.3	252.8	251.1	247.8	261.1	266.1
Oranges	287.5	314.0	280.6	283.1	313.1	318.3	330.0	274.3	266.0	252.8	255.1	281.1	285.8	300.2
Other fresh fruits (12/77 = 100)	147.1	144.7	141.0	145.9	154.5	157.2	163.4	147.6	139.7	136.7	141.0	149.0	151.8	157.8
Fresh vegetables	319.6	260.1	279.8	337.3	346.2	306.1	301.8	318.0	258.2	277.6	325.6	343.5	304.2	302.0
Potatoes	378.1	286.3	355.8	298.6	297.4	301.0	308.1	369.8	281.5	290.0	282.7	291.5	294.0	300.8
Lettuce	226.9	257.1	343.1	514.4	408.9	270.9	365.2	231.5	247.4	342.7	515.8	408.0	271.3	358.6
Tomatoes	375.3	206.0	204.6	245.6	268.5	258.1	220.5	370.7	209.7	207.8	248.6	250.2	261.8	224.9
Other fresh vegetables (12/77 = 100)	170.0	145.0	150.4	174.8	189.1	165.0	166.3	170.0	145.8	149.1	173.9	187.2	164.0	166.7
Processed fruits and vegetables	268.5	279.2	280.6	282.7	284.2	285.8	285.5	268.1	277.3	278.4	280.6	282.0	283.7	283.3
Processed fruits (12/77 = 100)	141.0	145.1	145.0	146.4	147.9	148.0	148.2	140.1	144.6	144.5	146.0	147.4	148.8	147.7
Frozen fruit and fruit juices (12/77 = 100)	142.8	144.9	142.3	143.5	147.8	148.2	147.1	140.2	144.1	141.2	142.8	146.6	148.2	148.1
Fruit juices other than frozen (12/77 = 100)	144.5	148.6	149.5	151.4	151.5	152.4	151.5	143.2	147.4	148.3	150.1	150.3	151.4	150.4
Canned and dried fruits (12/77 = 100)	135.6	141.6	142.6	143.6	144.3	145.3	145.6	136.6	141.8	143.0	144.0	144.8	145.9	146.2
Processed vegetables (12/77 = 100)	128.9	135.4	136.9	137.6	137.7	138.2	138.6	128.1	134.7	135.7	138.5	138.8	137.2	137.5
Frozen vegetables (12/77 = 100)	128.3	137.4	138.1	140.7	141.7	142.0	144.0	129.1	139.2	140.2	141.8	143.1	143.4	145.3

20. Continued—Consumer Price Index—U.S. city average

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981			1982				1981			1982			
	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
FOOD AND BEVERAGES—Continued														
Food—Continued														
Food at home—Continued														
Fruits and vegetables—Continued														
Cut corn and canned beans except lima (12/77=100)	130.2	138.3	138.9	138.9	140.7	141.2	140.5	129.0	136.0	136.5	137.5	138.3	138.8	137.9
Other canned and dried vegetables (12/77=100)	128.7	130.1	134.8	135.0	134.1	134.8	135.0	127.1	131.8	133.2	133.5	132.6	133.3	133.5
Other foods at home	324.7	328.0	325.6	328.7	330.7	331.7	331.6	325.4	327.0	328.4	329.8	331.5	332.6	332.6
Sugar and sweets	375.8	359.1	358.3	361.8	364.2	365.5	365.3	377.8	358.0	358.3	361.6	364.1	365.4	365.2
Candy and chewing gum (12/77=100)	144.1	149.3	149.9	150.1	150.0	150.3	150.9	145.1	148.9	149.9	150.0	149.8	150.1	150.8
Sugar and artificial sweeteners (12/77=100)	165.5	155.2	153.4	155.6	160.0	161.0	158.9	166.0	157.0	154.6	157.0	161.3	162.4	161.1
Other sweets (12/77=100)	139.8	144.9	146.1	147.1	146.9	147.4	147.2	138.7	143.1	144.2	145.2	145.1	145.5	145.3
Fats and oils (12/77=100)	270.1	262.2	261.1	261.6	260.5	258.6	260.4	270.4	263.1	261.0	261.5	260.6	258.7	260.4
Margarine	258.1	255.2	256.7	257.8	258.7	258.7	258.6	256.1	254.9	254.9	257.2	258.1	258.1	258.1
Nondairy substitutes and peanut butter (12/77=100)	162.4	160.0	160.1	157.7	157.8	158.1	157.3	162.3	160.0	158.5	156.0	158.3	154.4	155.6
Other fats, oils, and salad dressings (12/77=100)	129.8	129.8	129.7	130.5	128.8	129.5	129.0	129.7	130.4	130.1	131.0	130.2	130.0	129.5
Nonalcoholic beverages	414.4	413.4	412.5	418.7	423.4	424.8	424.1	415.8	415.2	414.2	420.5	425.0	426.6	426.0
Cola drinks, excluding diet cola	298.0	298.8	298.1	302.4	304.6	306.6	304.9	294.9	299.1	295.7	300.0	302.0	303.8	302.4
Carbonated drinks, including diet cola (12/77=100)	141.8	141.4	139.3	141.9	143.8	143.4	143.4	138.8	139.3	137.2	139.7	141.7	141.4	141.5
Roasted coffee	358.7	341.0	344.4	353.3	364.4	368.6	368.6	362.5	337.3	340.1	348.8	358.9	362.2	365.0
Freeze dried and instant coffee	339.5	330.8	332.0	338.9	342.8	343.6	343.4	340.9	333.2	331.6	336.5	342.5	343.4	343.0
Other noncarbonated drinks (12/77=100)	133.5	136.4	137.0	138.0	138.4	138.9	138.7	133.5	136.4	137.1	138.2	138.6	139.1	138.9
Other prepared foods	251.2	262.7	262.8	264.6	265.3	266.5	266.6	252.4	264.5	264.4	266.3	266.9	268.1	268.3
Canned and packaged soup (12/77=100)	129.3	133.4	133.7	134.3	135.9	135.6	135.7	129.8	136.1	135.7	136.4	137.9	137.8	137.8
Frozen prepared foods (12/77=100)	142.3	146.5	145.9	147.8	146.2	147.0	147.2	138.8	145.1	145.3	147.4	146.6	146.5	146.7
Snacks (12/77=100)	145.6	152.5	152.2	152.6	153.4	153.4	152.9	148.1	155.6	154.2	154.6	155.2	155.4	155.0
Seasonings, olives, pickles, and relish (12/77=100)	138.9	148.9	148.8	149.7	151.3	153.2	153.6	138.7	147.4	147.7	148.6	150.3	152.2	152.7
Other condiments (12/77=100)	139.2	146.0	144.6	148.4	146.9	148.2	148.7	141.7	146.5	148.2	148.0	148.4	149.9	150.4
Miscellaneous prepared foods (12/77=100)	136.7	144.8	145.8	146.9	147.0	147.7	147.8	137.7	145.2	145.8	147.0	147.1	147.9	147.7
Other canned and packaged prepared foods (12/77=100)	135.1	141.8	142.5	142.5	143.0	143.2	143.3	135.9	143.0	143.9	143.9	144.5	144.5	144.8
Food away from home	288.2	297.2	297.7	299.8	301.2	302.4	303.6	290.7	299.8	300.7	302.8	304.2	305.4	306.7
Lunch (12/77=100)	140.7	144.4	144.6	146.1	146.8	147.0	147.5	141.4	145.6	146.3	147.7	148.2	148.6	149.1
Dinner (12/77=100)	139.4	143.6	144.0	144.8	145.2	145.7	146.3	141.1	145.1	145.6	146.4	146.8	147.3	147.9
Other meals and snacks (12/77=100)	138.8	144.6	144.7	145.4	146.9	147.9	148.6	140.1	145.1	145.4	146.2	147.6	148.7	149.3
Alcoholic beverages	197.6	202.3	202.7	204.0	205.6	206.6	207.4	199.4	204.6	204.9	206.0	207.6	208.8	209.5
Alcoholic beverages at home (12/77=100)	128.5	131.2	131.4	132.2	133.3	134.0	134.6	130.0	132.8	132.8	133.4	134.6	135.4	136.0
Beer and ale	199.7	204.0	204.1	205.0	207.4	209.2	210.5	199.8	203.6	203.5	204.3	206.5	208.3	209.6
Whiskey	141.3	144.8	145.0	145.9	146.6	147.0	147.2	142.3	146.2	145.9	146.8	147.7	147.8	148.0
Wine	224.7	227.5	230.0	232.2	234.2	235.3	236.4	233.2	237.4	236.0	238.8	241.6	243.3	244.4
Other alcoholic beverages (12/77=100)	114.9	117.3	117.3	117.5	117.8	118.1	118.2	114.1	116.6	117.4	117.5	117.8	118.0	118.0
Alcoholic beverages away from home (12/77=100)	131.6	135.7	135.8	137.0	137.6	138.2	138.4	130.6	136.6	137.3	138.6	139.1	138.7	138.9
HOUSING	294.8	304.2	305.2	308.1	307.3	306.7	309.4	294.3	303.8	304.7	305.6	306.7	306.2	309.2
Shelter	303.8	327.2	328.0	328.3	329.5	327.6	331.4	304.6	328.5	329.3	329.4	330.3	328.5	332.8
Rent, residential	204.2	215.0	216.5	217.8	218.6	219.6	220.1	203.9	214.5	216.0	217.4	218.1	219.1	219.6
Other rental costs	285.9	305.3	308.3	313.6	316.9	320.1	323.7	285.8	305.0	305.3	312.3	315.6	318.9	322.8
Lodging while out of town	307.5	318.6	319.9	331.1	335.9	340.9	346.6	306.0	317.9	318.0	328.4	333.0	337.9	343.9
Tenants' insurance (12/77=100)	131.2	140.4	140.7	141.8	143.5	144.1	144.9	131.6	140.3	140.6	142.0	143.6	144.3	144.7
Homeownership	339.3	367.2	367.8	367.5	368.7	365.7	370.6	341.1	369.8	370.4	369.9	370.8	367.9	373.6
Home purchase	260.7	270.2	270.5	269.3	270.4	269.2	272.3	259.7	268.6	268.7	267.4	268.3	267.1	270.5
Financing, taxes, and insurance	447.1	505.6	506.3	508.0	507.2	500.9	508.4	452.6	511.9	512.9	512.2	513.2	507.0	516.0
Property insurance	378.5	383.3	384.1	383.0	383.7	384.1	383.6	382.5	385.5	386.5	386.6	388.0	388.5	389.0
Property taxes	199.9	209.0	210.7	212.9	215.1	216.6	217.2	201.7	210.0	212.5	214.5	217.2	218.5	219.1
Contracted mortgage interest cost	579.8	668.6	666.6	665.2	668.1	655.5	667.1	580.9	667.7	668.1	668.3	666.6	658.4	670.2
Mortgage interest rates	219.5	244.1	243.9	244.4	243.9	240.7	242.1	220.3	245.3	245.3	245.7	245.4	242.3	244.4
Maintenance and repairs	309.3	322.8	324.1	326.7	328.2	327.2	331.6	304.5	319.8	321.0	323.3	324.6	323.7	328.3
Maintenance and repair services	357.0	352.8	356.4	359.2	358.4	357.8	363.6	334.1	354.9	356.5	359.2	360.1	358.6	365.0
Maintenance and repair commodities	244.4	249.7	250.3	252.5	254.6	256.0	258.2	239.7	244.5	244.9	246.4	248.2	248.6	249.7
Paint and wallpaper, supplies, tools, and equipment (12/77=100)	143.4	146.5	147.3	149.4	150.9	151.8	153.1	138.8	140.0	140.5	142.3	143.7	144.7	145.8
Lumber, awnings, glass, and masonry (12/77=100)	124.3	124.1	124.3	124.6	124.6	123.9	124.5	123.1	121.8	121.6	121.9	121.7	121.2	121.9
Plumbing, electrical, heating, and cooling supplies (12/77=100)	127.9	133.1	131.5	131.9	133.8	133.4	133.4	127.9	132.4	131.6	131.8	133.4	133.1	133.1
Miscellaneous supplies and equipment (12/77=100)	128.4	131.8	132.5	133.6	134.8	135.1	135.6	129.9	134.2	134.7	136.7	136.9	137.1	137.4
Fuel and other utilities	310.5	329.8	331.8	336.2	337.1	339.3	339.2	311.4	330.8	332.7	337.0	337.9	340.2	340.3
Fuels	386.5	417.6	420.0	426.9	427.6	430.5	428.2	386.2	417.4	419.6	426.2	428.8	429.9	427.8
Fuel oil, coal, and bottled gas	690.6	676.1	682.5	686.0	683.1	664.0	641.3	683.7	679.3	685.5	688.9	689.0	668.7	644.0
Fuel oil	727.0	708.8	713.5	716.8	713.8	682.3	669.2	729.4	708.6	716.0	718.3	716.3	694.4	668.4
Other fuels (6/78 = 100)	162.5	167.7	169.4	170.9	170.0	169.0	166.4	164.2	169.1	170.8	172.1	171.4	168.5	167.9
Gas (piped) and electricity	330.6	358.3	358.9	367.4	368.7	375.9	377.8	329.6	357.5	358.6	368.0	367.3	374.8	376.8
Electricity	277.3	298.6	300.3	306.6	308.6	313.3	312.8	276.8	297.7	299.3	305.3	305.5	312.3	311.8
Utility (piped) gas	389.4	437.0	438.2	447.2	450.6	458.6	465.3	387.2	436.0	436.4	445.2	440.7	456.6	463.6

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981			1982				1981			1982			
	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
HOUSING—Continued														
Fuel and other utilities—Continued														
Other utilities and public services	175.1	190.7	191.9	192.7	193.9	195.0	197.7	175.4	191.0	192.2	193.1	194.3	195.4	198.2
Telephone services	143.4	155.6	156.8	157.2	157.9	158.5	160.8	143.4	155.8	156.9	157.3	158.0	158.6	161.0
Local charges (12/77 = 100)	114.8	123.5	124.4	124.0	125.3	125.6	127.9	114.9	123.8	124.6	124.2	125.4	125.7	128.1
Interstate toll calls (12/77 = 100)	101.8	116.7	116.7	116.8	116.6	117.7	119.9	101.9	116.8	116.8	116.9	116.7	117.8	120.2
Intrastate toll calls (12/77 = 100)	101.4	105.3	107.1	108.2	108.1	108.0	108.9	101.2	106.0	106.9	108.0	108.8	108.7	108.7
Water and sewerage maintenance	278.4	306.1	307.4	309.8	313.3	316.9	320.7	280.3	307.9	309.4	312.2	315.7	319.7	323.6
Household furnishings and operations	219.2	227.2	227.7	229.4	230.2	231.6	232.6	215.9	223.6	224.2	224.9	226.7	228.0	229.1
Housefurnishings	183.9	189.4	189.2	189.8	191.4	192.7	193.8	181.6	187.3	187.1	187.7	189.3	190.4	191.7
Textile housefurnishings	200.5	211.7	211.2	210.1	216.0	217.7	218.7	202.9	214.7	213.9	212.5	218.5	219.9	221.4
Household linens (12/77 = 100)	123.0	130.8	128.8	127.3	131.0	134.7	136.8	125.0	131.9	129.9	128.6	132.1	135.6	137.0
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	127.1	133.1	134.7	134.8	138.5	136.7	136.9	129.2	136.1	137.4	137.0	141.0	138.7	139.1
Furniture and bedding	203.7	209.2	209.7	209.5	209.4	212.1	214.7	208.0	205.3	206.0	205.0	205.5	208.2	211.0
Bedroom furniture (12/77 = 100)	134.5	136.6	136.6	139.7	140.5	140.8	142.3	130.7	135.2	135.2	136.5	137.1	137.2	138.8
Sofas (12/77 = 100)	118.5	118.7	119.4	117.3	118.4	118.0	119.3	114.9	118.8	118.5	117.6	118.5	118.2	119.6
Living room chairs and tables (12/77 = 100)	116.6	118.8	119.0	118.9	118.6	121.6	123.2	117.6	118.9	119.1	119.0	118.8	121.8	123.3
Other furniture (12/77 = 100)	133.4	137.1	138.4	138.5	138.1	140.5	142.3	130.1	133.1	134.0	133.9	133.4	136.8	137.9
Appliances including TV and sound equipment	145.3	148.2	147.9	148.8	148.9	150.1	150.6	144.2	147.7	147.5	148.5	148.6	148.7	150.3
Television and sound equipment (12/77 = 100)	108.6	109.0	108.9	108.8	109.2	109.1	108.7	107.1	108.3	108.0	107.9	108.4	108.2	107.7
Television	106.0	104.8	104.7	104.4	104.5	104.7	104.2	104.7	103.6	103.3	103.1	103.3	103.5	103.0
Sound equipment (12/77 = 100)	112.1	113.9	113.7	113.8	114.5	114.0	113.7	110.2	113.4	112.9	113.0	113.8	113.2	112.8
Household appliances	170.4	176.1	175.9	178.0	179.7	180.3	182.1	169.9	175.9	176.0	178.1	179.9	180.4	182.3
Refrigerators and home freezers	170.6	178.7	179.9	180.8	182.6	183.7	184.8	174.7	182.7	185.3	186.1	187.9	189.3	189.6
Laundry equipment (12/77 = 100)	126.1	130.7	130.5	132.2	133.5	133.3	136.4	125.7	130.8	130.3	132.4	133.8	133.5	136.6
Other household appliances (12/77 = 100)	116.6	119.4	118.7	120.6	121.6	122.2	122.9	114.4	117.4	116.8	118.5	119.7	120.0	120.7
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	115.8	118.7	117.9	119.4	121.0	121.9	122.3	113.9	116.8	116.2	117.4	118.9	118.3	119.7
Office machines, small electric appliances, and air conditioners (12/77 = 100)	117.4	120.1	119.6	121.9	122.4	122.5	123.5	116.0	118.1	117.3	118.7	120.5	120.7	121.8
Other household equipment (12/77 = 100)	130.0	134.4	134.0	134.9	136.7	137.3	137.8	127.9	132.4	131.9	132.9	134.7	135.3	136.6
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	131.4	136.1	135.9	136.3	138.1	140.9	140.3	124.4	129.7	129.3	128.6	131.0	132.3	132.9
Clocks, lamps, and decor items (12/77 = 100)	125.6	129.5	128.4	128.6	129.8	129.0	130.2	129.9	125.2	124.7	124.8	126.0	125.4	126.5
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	137.1	141.2	141.0	142.3	143.3	143.1	145.0	134.1	137.5	137.1	138.2	139.5	139.0	140.6
Lawn equipment, power tools, and other hardware (12/77 = 100)	121.5	126.9	126.3	127.8	130.3	132.1	130.8	125.9	131.6	131.5	133.2	135.5	137.3	136.0
Housekeeping supplies	268.9	275.4	277.4	279.1	282.4	284.2	284.9	262.4	271.9	274.1	275.7	278.8	280.4	281.2
Soaps and detergents	258.4	268.7	271.6	275.5	278.0	279.5	280.0	258.7	265.2	268.0	272.0	274.4	275.7	278.3
Other laundry and cleaning products (12/77 = 100)	131.0	137.3	138.8	139.6	141.0	142.1	142.7	130.4	137.0	137.5	138.4	138.8	140.0	141.6
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	138.4	143.6	144.5	145.1	145.7	145.7	148.4	138.5	143.9	144.4	145.1	145.8	145.4	148.2
Stationery, stationery supplies, and gift wrap (12/77 = 100)	123.1	128.5	128.8	128.8	130.4	130.7	131.4	124.8	131.3	131.6	131.7	132.4	133.8	134.6
Miscellaneous household products (12/77 = 100)	138.1	143.0	145.4	146.2	148.9	147.5	147.5	134.5	137.4	140.4	141.2	141.8	142.4	142.4
Lawn and garden supplies (12/77 = 100)	139.1	138.8	136.7	137.1	141.8	144.7	144.7	131.1	129.6	129.4	129.2	134.1	136.7	136.8
Housekeeping services	289.9	305.2	306.9	307.4	308.1	309.9	310.4	289.6	303.9	305.4	305.9	306.8	308.2	308.2
Postage	308.0	337.5	337.5	337.5	337.5	337.5	337.5	308.1	337.5	337.5	337.5	337.5	337.5	337.5
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	140.7	147.0	147.8	148.4	149.4	150.8	152.1	140.2	146.7	147.6	148.0	149.1	150.6	152.2
Appliance and furniture repair (12/77 = 100)	125.2	132.2	133.0	133.6	134.2	135.0	135.6	124.3	131.2	131.6	132.2	132.8	133.5	134.1
APPAREL AND UPKEEP	186.4	191.3	190.5	187.3	188.0	191.1	191.9	186.0	188.5	188.4	188.5	187.2	189.5	191.2
Apparel commodities	177.6	181.8	180.7	177.0	177.6	180.8	181.4	177.5	181.5	180.1	176.7	177.4	180.0	181.3
Apparel commodities less footwear	174.0	177.9	176.6	172.8	173.4	176.8	177.4	173.9	177.3	175.6	172.2	173.0	176.6	177.1
Men's and boys'	175.6	183.6	181.6	178.7	179.3	181.7	183.1	176.1	183.2	181.7	178.6	179.4	181.8	182.9
Men's (12/77 = 100)	110.5	115.9	114.5	112.9	113.0	114.5	115.5	110.9	115.9	115.0	113.3	113.5	114.7	115.7
Suits, sport coats, and jackets (12/77 = 100)	104.1	108.9	106.4	104.3	104.8	107.2	107.8	98.3	102.0	99.5	97.8	99.2	100.4	101.1
Coats and jackets (12/77 = 100)	98.1	102.8	101.4	96.4	95.8	98.1	98.1	98.6	105.1	104.1	97.6	97.2	98.7	102.7
Furnishings and special clothing (12/77 = 100)	127.5	133.6	134.2	133.6	134.7	136.8	138.2	132.7	128.8	130.6	129.8	131.1	133.1	134.5
Shirts (12/77 = 100)	117.0	123.0	122.7	120.7	119.3	119.9	121.3	118.5	125.4	125.3	123.3	121.8	122.3	123.4
Dungarees, jeans, and trousers (12/77 = 100)	105.4	109.8	108.5	108.2	108.6	108.6	109.7	111.5	115.5	114.1	113.6	114.1	114.2	115.1
Boys' (12/77 = 100)	114.5	118.0	117.2	114.6	116.0	117.8	119.3	113.9	116.5	116.4	112.9	114.3	116.1	118.5
Coats, jackets, sweaters, and shirts (12/77 = 100)	107.2	111.6	108.9	104.7	105.9	108.4	111.2	110.9	112.8	110.9	105.2	108.3	109.7	111.5
Furnishings (12/77 = 100)	121.5	127.0	127.5	127.3	128.2	128.7	130.3	118.2	123.3	123.5	123.3	124.2	124.7	126.0
Suits, trousers, sport coats, and jackets (12/77 = 100)	117.4	119.3	118.8	117.2	119.1	120.1	119.0	114.8	116.9	115.9	114.7	116.7	117.8	118.8
Women's and girls'	158.8	160.6	158.6	154.3	154.7	160.3	160.9	160.7	162.1	160.7	156.4	157.1	163.0	163.4
Women's (12/77 = 100)	105.0	106.3	105.8	102.3	102.9	106.8	107.1	108.7	107.6	107.1	103.8	104.8	108.9	109.1
Coats and jackets	157.6	164.0	161.8	158.4	156.4	162.0	163.4	156.8	166.3	157.3	161.6	163.1	173.1	172.8
Dresses	167.8	165.0	164.0	153.1	152.8	163.1	166.8	159.8	151.9	148.5	148.7	148.9	148.1	151.1
Separates and sportswear (12/77 = 100)	100.2	101.1	100.7	96.7	96.3	100.3	100.1	102.6	101.9	101.3	97.3	96.8	101.2	101.0
Underwear, nightwear, and hosiery (12/77 = 100)	119.3	124.1	124.8	124.0	126.2	127.1	127.4	119.1	124.0	124.5	123.7	126.0	126.8	127.3
Suits (12/77 = 100)	91.6	89.5	87.7	84.2	87.0	92.7	89.4	108.0	108.5	106.0	104.0	105.8	114.1	111.0
Girls' (12/77 = 100)	108.6	109.2	107.7	104.4	102.7	105.6	105.4	107.8	108.4	106.0	104.2	103.1	106.0	108.8
Coats, jackets, dresses, and suits (12/77 = 100)	106.4	100.3	98.4	93.4	92.6	98.2	98.8	101.3	98.9	96.1	91.2	91.5	97.2	97.8
Separates and sportswear (12/77 = 100)	106.8	111.3	108.9	106.3	103.4	104.6	105.4	109.5	110.2	107.5	108.2	108.0	108.9	107.8
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	115.5	120.0	120.7	119.2	118.0	119.6	122.0	115.4	118.0	118.5	118.2	117.0	118.7	121.0

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981			1982				1981			1982			
	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
APPAREL AND UPKEEP—Continued														
Apparel commodities—Continued														
Apparel commodities less footwear—Continued														
Infants' and toddlers'	258.2	264.9	259.4	259.6	262.2	264.7	267.0	269.3	274.1	270.6	270.1	271.4	275.4	278.2
Other apparel commodities	214.1	214.8	214.5	212.9	214.3	212.7	210.6	205.6	206.1	203.2	201.4	202.8	201.6	199.5
Sewing materials and notions (12/77 = 100)	114.0	118.6	118.3	118.2	117.8	118.1	118.5	114.3	116.4	116.2	114.3	115.9	116.5	116.9
Jewelry and luggage (12/77 = 100)	148.4	147.5	147.4	146.7	147.4	145.7	143.8	141.4	141.0	139.4	137.5	136.1	136.7	134.5
Footwear	199.3	205.4	205.7	202.8	202.9	204.9	205.6	199.4	208.2	205.9	203.1	203.3	205.2	206.1
Men's (12/77 = 100)	126.8	130.3	130.7	130.3	130.7	132.5	132.3	129.0	132.3	132.5	132.2	132.6	134.5	134.4
Boys' and girls' (12/77 = 100)	128.2	132.1	132.1	130.1	129.5	129.2	130.4	126.7	134.0	134.8	132.5	132.3	132.1	133.6
Women's (12/77 = 100)	121.3	125.2	125.4	122.6	122.7	124.7	125.1	119.3	122.9	121.6	119.9	119.0	120.8	121.1
Apparel services	254.3	264.6	266.4	267.6	269.4	271.3	273.4	252.7	262.3	264.4	265.5	267.2	269.0	271.0
Laundry and drycleaning other than coin operated (12/77 = 100)	150.9	158.2	159.2	160.0	161.4	162.4	163.5	150.4	158.3	157.8	158.5	159.9	160.9	162.0
Other apparel services (12/77 = 100)	134.5	137.9	139.1	138.4	139.8	141.1	142.5	134.0	138.6	139.6	139.9	140.3	141.5	142.7
TRANSPORTATION	275.3	288.1	289.8	289.9	288.0	285.1	282.9	278.3	290.8	291.5	291.6	289.6	286.6	284.3
Private	273.4	285.9	286.5	286.6	284.5	281.3	278.6	275.1	288.3	289.0	289.0	286.9	283.7	281.2
New cars	186.1	185.3	187.0	187.4	185.5	184.4	186.0	186.2	185.2	186.9	187.3	185.3	184.2	185.8
Used cars	239.1	281.4	281.9	280.5	279.7	280.9	285.1	239.1	281.4	281.9	280.5	279.7	280.9	285.2
Gasoline	418.3	408.5	408.4	408.0	398.1	383.9	368.7	420.6	410.9	409.8	407.5	400.6	385.4	368.2
Automobile maintenance and repair	299.0	302.0	304.1	305.5	307.2	310.2	311.9	299.7	303.4	304.8	306.2	308.4	311.1	312.8
Body work (12/77 = 100)	140.8	149.9	150.6	151.5	153.7	154.5	155.0	140.7	148.3	148.9	149.8	152.1	152.7	153.3
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	138.0	144.2	144.7	145.7	146.5	148.7	149.5	140.5	147.3	148.5	149.5	150.2	152.8	153.7
Maintenance and servicing (12/77 = 100)	135.5	140.9	141.5	142.0	142.7	143.9	144.5	135.7	140.5	141.0	141.5	142.3	143.4	144.0
Power plant repair (12/77 = 100)	137.8	144.9	146.6	148.2	147.3	148.0	149.1	136.7	144.7	145.1	145.7	146.8	147.5	148.6
Other private transportation	236.3	249.5	250.6	253.3	253.4	254.5	256.1	239.2	253.0	254.2	256.9	256.8	257.8	259.2
Other private transportation commodities	209.1	213.4	214.5	215.5	214.8	215.6	214.9	210.4	216.8	216.9	218.0	217.3	218.2	217.2
Motor oil, coolant, and other products (12/77 = 100)	143.5	148.5	148.7	148.2	149.3	150.2	150.7	140.5	146.7	147.2	148.9	147.8	148.7	149.2
Automobile parts and equipment (12/77 = 100)	133.2	136.4	137.2	138.1	137.4	137.9	137.2	135.4	139.2	139.2	140.0	139.4	139.9	139.2
Tires	185.8	188.7	191.5	192.8	191.3	191.7	190.1	189.6	195.1	195.2	196.5	195.1	196.5	193.7
Other parts and equipment (12/77 = 100)	130.1	134.1	133.9	134.3	134.6	135.7	136.2	130.8	134.1	133.9	134.5	134.9	135.9	136.6
Other private transportation services	249.2	261.5	262.6	265.8	266.1	267.2	269.2	249.2	256.1	266.6	268.7	269.8	270.8	271.6
Automobile insurance	255.7	265.4	266.0	266.8	268.1	268.8	270.4	255.2	265.0	265.6	266.6	268.0	268.6	270.2
Automobile finance charges (12/77 = 100)	168.5	188.7	188.5	189.9	188.9	189.9	187.2	168.3	187.6	189.9	190.3	189.3	188.2	188.7
Automobile rental, registration, and other fees (12/77 = 100)	118.2	120.7	120.6	127.6	128.9	129.7	133.3	119.3	121.1	121.4	128.4	129.5	130.1	132.7
State registration	149.9	149.0	149.0	166.8	167.1	168.5	174.2	147.0	149.0	149.0	166.2	166.5	167.8	173.8
Drivers' licenses (12/77 = 100)	105.5	110.4	111.9	117.3	121.7	122.9	123.0	105.2	110.3	111.9	117.1	121.7	123.0	123.0
Vehicle inspection (12/77 = 100)	126.0	(1)	128.3	129.2	129.3	129.3	130.0	126.6	(1)	129.0	130.5	130.6	130.6	130.4
Other vehicle-related fees (12/77 = 100)	138.4	141.3	141.8	142.5	144.8	145.3	149.5	147.1	148.6	149.2	150.4	152.4	152.5	158.4
Public	297.2	333.2	333.8	334.9	336.8	336.7	339.3	297.7	329.2	328.6	329.4	331.0	331.0	333.3
Airline fare	348.6	374.5	374.7	375.5	379.3	379.0	382.7	346.6	373.1	372.8	372.7	378.3	376.3	378.8
Intercity bus fare	329.1	362.2	365.2	367.3	365.7	365.6	367.0	329.2	362.9	366.1	366.9	367.4	367.0	368.7
Intracity mass transit	251.7	304.4	304.6	305.9	306.7	306.6	308.1	249.8	303.6	303.9	305.1	305.8	305.7	307.2
Taxi fare	279.9	291.3	294.7	296.3	296.7	297.2	297.6	287.4	300.4	304.1	305.6	306.1	306.6	307.3
Intercity train fare	277.2	319.2	319.2	318.1	314.0	314.1	332.1	277.5	318.9	318.9	317.9	314.5	314.5	332.1
MEDICAL CARE	297.0	308.2	310.2	313.4	316.2	318.8	321.7	299.1	307.1	309.1	312.0	314.8	317.4	320.2
Medical care commodities	182.4	193.1	194.8	195.9	197.7	200.0	202.4	183.4	193.8	195.4	196.4	198.3	200.6	203.0
Prescription drugs	169.5	179.6	181.0	181.9	183.7	186.1	189.8	169.2	180.3	181.9	182.8	184.7	187.0	189.7
Anti-infective drugs (12/77 = 100)	130.2	136.3	137.8	138.2	139.4	139.3	140.9	132.4	138.9	139.7	140.1	140.4	141.1	142.5
Tranquilizers and sedatives (12/77 = 100)	134.4	143.6	144.8	145.4	148.8	148.6	152.0	133.3	143.3	144.4	144.0	146.5	148.3	151.8
Circulatories and diuretics (12/77 = 100)	123.9	130.4	131.9	132.2	134.0	135.7	136.7	125.3	131.0	131.8	132.1	134.0	135.6	136.6
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	151.2	163.3	164.6	165.6	168.4	170.8	173.3	150.9	164.1	165.0	166.9	169.7	172.0	174.6
Pain and symptom control drugs (12/77 = 100)	134.5	144.9	145.9	147.3	148.8	150.8	153.1	135.8	145.4	147.3	148.7	150.3	152.3	154.6
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	128.6	137.5	138.1	138.8	139.9	142.7	144.7	128.8	136.8	138.0	138.8	139.8	142.7	144.8
Nonprescription drugs and medical supplies (12/77 = 100)	130.9	137.8	139.2	139.9	141.1	142.5	143.9	131.9	138.5	139.7	140.4	141.6	143.2	144.6
Eyeglasses (12/77 = 100)	125.1	127.8	128.4	128.3	128.9	129.5	130.1	123.4	126.7	127.1	127.1	127.6	128.1	128.7
Internal and respiratory over-the-counter drugs	205.9	218.6	221.6	222.8	225.1	228.1	231.1	208.0	220.2	222.8	223.9	226.4	229.6	232.5
Nonprescription medical equipment and supplies (12/77 = 100)	128.2	133.7	134.6	135.9	137.1	138.1	138.9	129.2	134.7	135.2	136.6	137.7	138.8	139.7
Medical care services	309.8	333.7	335.7	339.4	342.4	345.1	348.0	312.2	332.0	334.0	337.5	340.6	343.0	345.8
Professional services	271.7	288.4	290.0	292.0	294.2	295.8	297.8	276.2	288.2	290.3	292.2	294.3	295.9	297.8
Physicians' services	282.2	311.3	313.0	315.5	318.8	320.3	322.2	287.9	314.1	316.0	318.6	321.7	323.2	325.2
Dental services	257.1	272.3	273.9	275.8	276.8	278.6	281.1	262.2	270.1	272.3	274.1	274.9	276.6	279.2
Other professional services (12/77 = 100)	132.6	138.5	140.3	140.3	141.5	142.4	142.5	131.3	136.2	137.2	137.2	138.5	139.4	139.4
Other medical care services	355.9	388.4	390.9	396.8	400.8	404.7	408.7	354.2	386.2	388.1	393.8	398.0	401.6	405.4
Hospital and other medical services (12/77 = 100)	148.1	161.9	162.7	165.6	167.1	168.5	169.8	147.3	160.6	161.1	164.0	165.7	166.9	168.3
Hospital room	495.0	515.4	519.3	529.4	533.8	538.5	542.2	491.4	509.6	512.6	522.0	527.0	531.0	535.2
Other hospital and medical care services (12/77 = 100)	147.3	158.2	158.6	162.2	163.8	165.2	166.4	146.8	158.3	158.4	161.2	163.0	164.2	165.5

30. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981			1982				1981			1982			
	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
ENTERTAINMENT	219.2	226.8	227.3	229.2	231.2	232.8	233.8	217.0	224.3	224.4	226.1	228.1	229.5	230.5
Entertainment commodities	223.6	230.3	230.6	232.0	234.3	235.6	236.0	219.4	225.5	225.4	228.7	229.9	230.8	232.0
Reading materials (12/77 = 100)	134.1	139.6	139.6	142.9	144.1	146.1	146.6	134.1	139.3	139.1	142.1	143.3	145.3	146.1
Newspapers	262.5	267.6	267.7	270.5	273.1	276.4	280.1	262.5	267.5	267.6	270.1	272.8	276.0	279.7
Magazines, periodicals, and books (12/77 = 100)	134.8	143.8	143.5	149.0	149.9	152.4	151.6	134.8	143.7	143.4	149.8	149.7	152.2	151.4
Sporting goods and equipment (12/77 = 100)	127.5	130.2	130.0	129.5	131.5	132.3	132.9	120.9	122.8	122.4	122.4	123.9	124.3	124.7
Sport vehicles (12/77 = 100)	130.4	(¹)	132.1	c(¹)	133.9	136.4	138.1	120.0	(¹)	120.2	(¹)	121.9	122.5	122.8
Indoor and warm weather sport equipment (12/77 = 100)	116.7	119.6	119.9	120.1	119.6	119.9	120.4	115.4	118.2	117.9	118.2	117.7	118.1	118.6
Bicycles	188.3	194.3	193.9	194.6	197.3	197.6	199.9	189.7	195.3	195.2	196.2	199.9	199.9	200.2
Other sporting goods and equipment (12/77 = 100)	122.6	126.7	126.2	125.3	127.0	125.8	128.3	121.1	126.9	126.3	125.2	127.4	126.0	126.5
Toys, hobbies, and other entertainment (12/77 = 100)	127.8	131.3	132.0	132.2	133.2	134.5	136.4	127.2	130.8	130.9	131.2	132.3	133.5	134.3
Toys, hobbies, and music equipment (12/77 = 100)	126.2	129.7	130.1	130.8	131.7	133.4	134.1	124.0	126.7	126.9	127.7	128.6	130.2	130.7
Photographic supplies and equipment (12/77 = 100)	125.4	125.5	125.2	125.2	128.9	129.3	129.6	126.7	127.5	128.3	128.3	127.9	129.5	131.0
Pet supplies and expenses (12/77 = 100)	132.4	138.3	140.2	138.7	140.6	140.8	141.9	133.2	140.1	140.9	140.5	141.6	141.7	142.7
Entertainment services	213.4	222.3	223.0	225.5	227.1	227.8	228.5	213.9	223.4	223.9	226.1	227.8	228.4	229.2
Fees for participant sports (12/77 = 100)	130.7	137.3	137.6	138.6	140.9	141.9	142.0	130.2	138.1	139.3	141.2	142.5	143.5	143.7
Admissions (12/77 = 100)	124.5	129.9	129.7	131.2	131.6	131.2	132.2	124.7	128.3	128.7	130.1	130.6	130.3	131.2
Other entertainment services (12/77 = 100)	121.1	123.4	123.7	124.2	125.0	125.1	125.2	122.4	124.1	124.3	124.7	125.9	125.9	125.9
OTHER GOODS AND SERVICES	229.9	245.9	246.7	248.4	250.3	252.2	253.6	227.9	242.5	243.5	245.0	247.1	249.3	250.9
Tobacco products	213.3	225.2	226.6	227.1	230.7	234.1	235.1	213.2	225.4	225.9	226.2	229.6	233.2	234.0
Cigarettes	215.5	228.9	229.7	230.0	233.6	237.3	238.0	215.5	228.1	229.7	229.1	232.7	236.3	236.9
Other tobacco products and smoking accessories (12/77 = 100)	129.6	134.7	134.4	134.7	136.6	138.1	139.9	130.0	135.0	134.7	135.0	136.9	138.2	140.1
Personal care	229.7	237.7	239.1	240.9	242.3	243.7	245.9	228.4	235.5	237.1	238.8	240.4	241.8	244.1
Toilet goods and personal care appliances	223.9	232.5	234.7	236.4	238.5	240.6	243.6	222.5	233.1	235.4	236.9	238.2	241.5	244.7
Products for the hair, hairpieces, and wigs (12/77 = 100)	131.9	135.4	136.5	137.2	138.4	140.8	142.9	128.8	133.3	135.6	136.4	137.8	140.0	142.3
Dental and shaving products (12/77 = 100)	138.6	140.5	141.2	144.0	145.6	148.0	149.0	135.1	139.3	139.8	142.6	144.2	146.6	147.6
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	125.3	131.8	133.2	134.1	135.0	135.1	136.5	124.4	132.2	133.7	134.5	135.8	136.1	137.5
Other toilet goods and small personal care appliances (12/77 = 100)	129.4	134.3	136.0	135.9	137.0	137.4	140.3	131.3	139.1	139.1	138.9	140.2	140.7	143.5
Personal care services	233.7	243.1	243.9	245.7	246.5	247.3	248.7	230.5	236.1	239.2	241.0	241.8	242.6	244.0
Beauty parlor services for women	236.0	244.8	245.2	246.9	247.7	248.9	250.7	231.7	237.8	238.6	240.5	241.3	242.5	244.3
Haircuts and other barber shop services for men (12/77 = 100)	129.8	135.9	136.6	138.0	138.4	138.4	138.6	129.1	134.9	135.7	136.8	137.2	137.2	137.6
Personal and educational expenses	256.2	284.0	285.1	288.1	289.2	290.4	291.9	257.1	285.6	285.9	288.9	290.2	291.7	293.5
Schoolbooks and supplies	230.8	254.6	254.5	260.7	262.9	263.3	263.8	234.6	258.3	258.5	264.8	267.1	267.5	268.0
Personal and educational services	262.4	292.1	292.3	294.8	295.8	297.1	298.7	262.9	292.5	292.8	295.2	296.3	298.0	300.0
Tuition and other school fees	132.8	149.1	149.1	150.5	150.6	151.1	151.4	133.0	149.4	149.4	150.7	150.9	151.7	152.0
College tuition (12/77 = 100)	132.3	148.3	148.3	149.9	150.1	150.7	151.0	132.3	148.1	148.1	149.6	149.8	150.9	151.3
Elementary and high school tuition (12/77 = 100)	134.4	152.0	152.0	152.1	152.2	152.2	152.2	134.4	152.7	152.7	152.8	152.9	152.9	152.9
Personal expenses (12/77 = 100)	141.8	152.8	153.4	154.3	156.1	157.4	160.9	141.1	152.1	152.7	153.7	155.3	156.7	160.5
Special indexes:														
Gasoline, motor oil, coolant, and other products	413.2	403.9	402.6	400.5	383.9	379.3	362.6	414.5	405.1	404.0	401.6	385.3	380.6	363.7
Insurance and finance	378.1	422.2	423.1	423.9	424.6	426.9	426.3	377.6	420.9	422.1	422.6	423.5	418.9	425.9
Utilities and public transportation	287.9	292.6	293.9	297.7	299.1	302.7	305.1	288.1	291.5	292.6	296.4	297.7	301.5	304.9
Housekeeping and home maintenance services	323.1	339.6	341.3	343.0	344.0	344.0	347.5	321.1	339.9	341.5	343.3	344.2	344.0	348.2

[1] Not available.

c = corrected.

21. Consumer Price Index for All Urban Consumers: Cross classification of region and population size class by expenditure category and commodity and service group

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000-1.250 million)			Size class C (75,000-385,000)			Size class D (75,000 or less)		
	1981	1982		1981	1982		1981	1982		1981	1982	
	Dec.	Feb.	Apr.	Dec.	Feb.	Apr.	Dec.	Feb.	Apr.	Dec.	Feb.	Apr.
	Northeast											
EXPENDITURE CATEGORY												
All items	144.2	144.2	143.6	152.9	150.7	150.0	159.2	158.1	158.6	150.7	151.4	151.9
Food and beverages	139.6	143.3	143.7	139.6	142.7	142.2	142.8	145.7	147.4	137.0	140.4	140.4
Housing	148.0	148.0	144.5	161.9	155.7	155.3	176.3	172.5	173.3	159.3	159.5	160.5
Apparel and upkeep	117.5	117.0	119.1	123.1	120.5	122.5	125.9	123.1	127.4	125.4	119.9	125.1
Transportation	157.9	156.5	153.7	165.4	164.2	160.0	162.7	161.6	[illegible]	161.8	161.7	158.1
Medical care	142.0	145.1	146.4	146.6	147.0	148.9	146.3	148.7	150.4	143.0	144.8	151.5
Entertainment	131.9	133.3	135.5	131.0	132.4	136.2	133.7	136.1	135.8	134.3	137.6	139.0
Other goods and services	135.4	136.9	139.0	138.7	140.6	141.1	142.0	142.9	145.3	138.5	140.6	142.9
COMMODITY AND SERVICE GROUP												
Commodities	141.8	142.1	140.8	149.6	147.9	146.6	151.1	150.1	149.6	147.2	147.6	146.5
Commodities less food and beverages	143.2	141.4	139.0	154.5	150.5	148.7	154.9	152.2	150.6	152.1	151.0	149.4
Services	147.3	146.9	147.4	158.0	155.1	155.4	172.5	171.0	173.4	156.1	157.3	160.4
	North Central region											
EXPENDITURE CATEGORY												
All items	152.6	153.6	155.2	149.2	151.9	155.1	147.4	149.1	151.2	147.6	151.0	153.3
Food and beverages	139.8	141.6	141.9	139.3	140.8	141.7	140.7	143.1	143.1	143.4	144.7	146.2
Housing	163.3	164.9	168.8	153.8	159.9	167.2	150.0	152.7	157.2	149.1	155.5	160.7
Apparel and upkeep	113.7	112.7	114.8	128.0	121.1	122.7	122.4	121.8	125.8	123.6	119.5	123.5
Transportation	162.7	161.1	158.7	160.8	159.7	156.9	162.3	161.0	158.4	160.1	160.3	157.2
Medical care	144.6	148.4	150.9	146.8	150.8	152.8	147.7	150.3	153.8	151.2	154.5	157.0
Entertainment	134.1	137.1	137.0	124.4	126.4	130.3	132.6	136.1	138.1	129.2	132.5	130.9
Other goods and services	137.0	138.8	140.3	142.9	145.1	146.5	135.6	137.3	139.0	141.7	144.6	146.4
COMMODITY AND SERVICE GROUP												
Commodities	145.1	145.2	145.4	142.9	145.4	146.4	142.2	143.5	144.3	140.7	142.1	143.7
Commodities less food and beverages	147.6	146.9	147.0	144.4	147.3	148.3	142.8	143.6	144.8	138.5	141.0	142.6
Services	163.7	166.1	169.8	159.5	162.6	169.3	156.1	158.4	162.4	158.7	165.0	168.7
	South											
EXPENDITURE CATEGORY												
All items	152.0	152.6	152.9	155.9	157.2	156.7	152.3	154.0	152.3	150.8	152.3	153.5
Food and beverages	141.4	144.2	145.0	141.3	144.8	144.9	141.9	144.1	144.0	143.4	146.1	145.9
Housing	160.3	160.2	161.1	166.7	168.3	165.2	159.7	162.7	159.1	158.2	158.8	161.5
Apparel and upkeep	123.5	122.6	125.6	123.7	121.1	124.3	118.2	117.0	120.2	110.4	105.7	111.1
Transportation	161.9	161.5	157.5	164.1	162.8	159.7	162.3	160.7	157.1	161.6	159.9	155.8
Medical care	143.2	145.9	149.5	147.6	150.5	152.3	153.0	155.4	160.1	160.1	162.5	165.1
Entertainment	127.4	129.3	130.1	137.1	140.0	141.2	136.4	140.4	141.1	138.4	140.4	145.7
Other goods and services	139.7	141.2	142.8	138.5	140.7	142.4	139.8	142.0	143.7	140.5	147.9	150.2
COMMODITY AND SERVICE GROUP												
Commodities	145.9	146.8	146.3	147.5	148.4	147.6	145.3	146.0	144.3	145.1	145.0	146.0
Commodities less food and beverages	147.9	148.0	146.8	150.1	149.9	148.8	146.7	146.8	144.5	145.8	144.6	146.0
Services	160.5	160.7	162.1	168.6	170.4	167.8	163.1	166.3	164.5	159.5	163.3	164.8
	West											
EXPENDITURE CATEGORY												
All items	156.1	157.9	158.5	155.1	157.1	157.0	149.4	150.2	151.1	149.1	153.3	157.9
Food and beverages	140.8	143.9	144.5	145.4	147.9	147.6	140.1	143.4	143.5	145.8	148.1	148.5
Housing	165.5	167.2	168.1	161.8	164.9	164.8	153.8	154.4	158.3	146.1	153.9	163.5
Apparel and upkeep	121.9	121.7	120.6	127.1	126.4	128.6	117.1	118.8	119.7	135.6	131.9	140.4
Transportation	162.9	164.2	162.9	166.0	163.6	161.7	162.8	160.9	158.3	164.6	164.5	160.5
Medical care	155.7	157.8	160.7	151.3	153.7	156.0	151.1	154.8	157.3	152.8	157.9	162.4
Entertainment	133.6	136.1	137.7	133.9	135.5	136.8	129.4	130.4	133.9	145.6	147.8	148.9
Other goods and services	141.0	144.5	147.5	142.8	145.3	148.9	136.8	137.1	139.5	148.0	147.6	149.8
COMMODITY AND SERVICE GROUP												
Commodities	144.9	146.0	145.5	147.2	148.4	148.1	143.7	145.2	146.4	145.5	147.5	148.9
Commodities less food and beverages	146.6	146.9	145.8	148.0	148.6	148.3	145.1	145.9	147.5	145.4	147.3	149.1
Services	170.9	173.7	175.9	168.0	169.1	169.3	157.5	157.3	157.9	154.6	161.8	171.2

22. Consumer Price Index—U.S. city average, and selected areas

[1967 = 100 unless otherwise specified]

Area[1]	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981			1982				1981			1982			
	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
U.S. city average[2]	266.8	280.7	281.5	282.5	283.4	283.1	284.3	266.8	280.4	281.1	282.1	282.9	282.5	283.7
Anchorage, Alaska (10/67 = 100)	...	253.7	...	253.0	...	260.0	...	...	249.3	...	248.6	...	254.5	...
Atlanta, Ga.	265.9	...	282.2	...	279.8	...	280.2	268.8	...	284.1	...	282.7	...	282.9
Baltimore, Md.	...	280.7	...	282.1	...	281.9	...	...	280.9	...	282.3	...	282.2	...
Boston, Mass.	...	274.2	...	274.0	...	269.8	...	...	274.3	...	273.4	...	269.8	...
Buffalo, N.Y.	254.6	...	264.3	...	259.9	...	258.3	252.7	...	262.7	...	258.0	...	256.4
Chicago, Ill.-Northwestern Ind.	263.7	277.0	273.9	275.4	274.9	276.4	280.2	263.0	277.3	274.4	275.9	275.4	276.5	280.0
Cincinnati, Ohio-Ky.-Ind.	...	276.6	...	285.7	...	284.9	...	...	279.0	...	288.4	...	287.2	...
Cleveland, Ohio	272.0	...	281.6	...	285.9	...	286.5	272.1	...	281.2	...	285.0	...	285.7
Dallas-Ft. Worth, Tex.	279.6	...	295.1	...	293.6	...	297.2	276.9	...	291.0	...	289.8	...	292.7
Denver-Boulder, Colo.	...	297.8	...	305.4	...	309.2	...	...	302.8	...	310.5	...	315.0	...
Detroit, Mich.	272.4	279.6	278.3	280.8	277.8	278.2	283.7	268.0	276.4	275.1	277.8	274.8	275.1	280.3
Honolulu, Hawaii	250.0	...	258.3	...	262.2	...	263.8	250.2	...	259.3	...	263.2	...	264.7
Houston, Tex.	286.4	...	302.7	...	304.1	...	304.9	283.1	...	298.8	...	300.3	...	302.1
Kansas City, Mo.-Kansas	265.4	...	273.5	...	276.0	...	274.0	264.3	...	272.0	...	274.1	...	272.1
Los Angeles-Long Beach, Anaheim, Calif.	265.5	281.8	282.3	285.8	285.6	286.6	286.8	269.1	285.5	286.1	289.8	289.4	290.4	290.5
Miami, Fla. (11/77 = 100)	...	153.6	...	155.2	...	155.1	...	...	154.7	...	156.4	...	156.4	...
Milwaukee, Wis.	...	287.5	...	291.3	...	289.3	...	...	291.5	...	295.3	...	292.5	...
Minneapolis-St. Paul, Minn.-Wis.	266.5	...	298.7	...	306.0	...	301.7	267.3	...	298.3	...	305.3	...	301.2
New York, N.Y.-Northeastern N.J.	255.4	267.8	267.9	268.5	269.0	267.4	268.2	254.8	266.9	266.9	267.5	267.8	265.9	266.5
Northeast, Pa. (Scranton)	...	272.2	...	272.5	...	267.2	...	...	275.2	...	274.5	...	268.4	...
Philadelphia, Pa.-N.J.	261.0	274.1	274.9	275.7	275.5	274.7	275.1	261.5	274.5	274.1	275.1	275.1	274.3	274.5
Pittsburgh, Pa.	265.7	...	281.8	...	278.6	...	275.3	267.3	...	282.6	...	280.0	...	276.7
Portland, Oreg.-Wash.	...	278.7	...	288.4	...	286.7	...	...	276.3	...	285.5	...	283.9	...
St. Louis, Mo.-Ill.	...	273.8	...	278.4	...	280.7	...	...	273.0	...	277.1	...	279.3	...
San Diego, Calif.	...	321.3	...	323.1	...	319.0	...	...	315.1	...	317.4	...	313.9	...
San Francisco-Oakland, Calif.	270.3	...	294.0	...	295.8	...	298.8	270.9	...	292.7	...	294.9	...	297.8
Seattle-Everett, Wash.	...	289.2	...	295.9	...	293.4	...	...	285.7	...	291.9	...	289.6	...
Washington, D.C.-Md.-Va.	...	275.5	...	278.0	...	278.8	...	...	279.3	...	281.8	...	283.8	...

[1] The areas listed include not only the central city but the entire portion of the Standard Metropolitan Statistical Area, as defined for the 1970 Census of Population, except that the Standard Consolidated Area is used for New York and Chicago.

[2] Average of 85 cities.

23. Producer Price Indexes, by stage of processing

[1967=100]

Commodity grouping	Annual average 1981	1981								1982				
		May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.[1]	Feb.	Mar.	Apr.	May
FINISHED GOODS														
Finished goods	269.8	269.6	270.5	271.8	271.5	271.5	274.3	274.7	275.4	r277.9	277.4	276.9	276.9	277.7
Finished consumer goods	271.2	271.5	272.3	273.5	273.0	273.1	275.1	275.2	275.8	r278.3	278.1	277.2	276.9	277.6
Finished consumer foods	253.5	252.8	253.8	257.6	256.3	256.2	254.0	252.7	252.9	256.4	258.2	257.1	259.8	262.3
Crude	263.6	263.1	258.9	262.7	256.9	253.5	253.8	260.0	273.9	r280.6	282.0	262.9	266.1	259.4
Processed	250.6	249.8	251.3	255.0	254.2	254.4	252.0	249.9	249.0	r252.1	253.9	254.4	257.1	260.4
Nondurable goods less foods	319.4	321.0	322.0	322.5	322.1	324.2	324.3	325.4	326.3	r329.3	329.3	328.0	324.9	324.1
Durable goods	218.5	218.1	218.2	218.1	218.3	215.8	224.5	224.7	225.4	r226.2	223.5	223.5	223.8	224.7
Consumer nondurable goods less food and energy	208.6	207.7	208.4	209.5	210.4	211.8	212.6	213.6	213.9	r217.4	218.8	219.6	221.4	222.9
Capital equipment	264.3	262.5	263.8	265.4	265.8	265.3	271.5	273.0	274.1	r276.2	274.8	275.7	277.1	278.3
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	306.0	306.7	307.2	308.5	310.1	309.7	309.4	309.0	309.4	r311.0	311.3	310.9	310.1	309.8
Materials and components for manufacturing	286.2	285.1	285.8	287.9	289.8	290.2	290.2	289.5	289.3	r290.4	291.3	290.8	290.9	291.5
Materials for food manufacturing	260.9	259.0	262.4	260.5	261.0	254.6	250.9	248.8	245.6	r250.7	254.3	252.0	254.3	260.0
Materials for nondurable manufacturing	285.9	287.0	287.7	289.2	291.0	291.2	290.9	289.4	288.8	r289.0	289.5	289.5	288.1	288.1
Materials for durable manufacturing	312.2	311.2	310.7	314.4	316.0	317.1	316.7	314.9	314.0	r313.6	313.5	311.2	311.2	310.6
Components for manufacturing	259.2	256.3	257.3	259.5	261.8	263.8	265.1	266.9	267.8	r269.8	271.1	272.0	272.9	273.8
Materials and components for construction	287.5	288.5	289.6	290.4	290.7	290.0	290.1	290.2	291.1	r292.0	292.8	293.3	293.8	293.4
Processed fuels and lubricants	595.0	608.7	605.7	602.0	607.8	601.4	596.9	595.1	598.1	r604.4	597.1	593.5	579.8	569.9
Manufacturing industries	498.2	510.7	505.4	500.3	508.3	500.5	497.5	496.4	499.0	r505.9	498.7	497.1	487.6	462.3
Nonmanufacturing industries	680.5	695.2	694.3	692.0	695.6	690.5	684.7	682.2	685.6	r691.3	683.9	678.4	660.9	646.7
Containers	276.2	276.4	277.2	278.8	280.3	280.6	280.9	280.6	280.2	r282.5	285.2	286.5	287.4	287.1
Supplies	263.9	264.0	264.6	266.0	266.1	266.1	266.6	267.2	268.3	269.8	270.7	270.9	272.3	273.6
Manufacturing industries	253.2	252.3	253.4	255.0	256.0	256.8	258.2	259.2	261.0	r262.6	263.5	264.8	265.6	267.2
Nonmanufacturing industries	269.6	270.2	270.5	272.0	271.6	271.1	271.2	271.6	272.4	r273.8	274.8	274.4	276.0	277.2
Feeds	230.4	242.9	235.4	232.8	229.1	221.3	215.9	212.0	214.6	r214.8	212.7	208.8	212.9	214.2
Other supplies	276.4	273.8	276.3	278.7	279.3	280.7	282.3	283.7	284.1	r285.7	287.6	288.1	289.1	290.2
CRUDE MATERIALS														
Crude materials for further processing	329.1	334.4	335.4	337.3	333.0	327.4	319.9	313.9	311.5	r318.4	321.5	319.9	322.8	328.1
Foodstuffs and feedstuffs	257.4	260.6	264.3	267.2	261.8	253.4	245.7	238.3	233.7	r242.6	248.3	247.9	254.3	262.3
Nonfood materials	481.6	492.4	487.4	487.2	485.3	486.0	479.2	476.3	478.6	r481.5	479.3	475.0	470.4	470.4
Nonfood materials except fuel	413.9	428.3	418.1	413.1	413.9	410.2	404.1	397.8	396.2	r399.5	395.1	387.4	379.0	376.6
Manufacturing industries	429.6	445.5	434.2	428.7	429.6	425.4	418.6	411.7	409.8	413.2	407.6	398.5	389.0	386.4
Construction	262.4	261.7	262.6	262.6	263.1	263.6	264.7	264.8	265.2	r267.6	272.1	275.1	275.3	274.0
Crude fuel	678.5	738.4	759.2	781.2	766.7	788.7	779.0	782.5	813.0	r812.9	823.5	837.7	853.7	866.1
Manufacturing industries	865.4	850.6	877.2	902.6	883.0	911.4	898.4	915.8	942.5	r940.3	953.4	972.8	992.4	1,008.2
Nonmanufacturing industries	674.3	662.2	678.5	698.1	687.8	704.8	697.8	708.2	724.0	r725.6	734.4	744.5	757.6	767.4
SPECIAL GROUPINGS														
Finished goods excluding foods	273.2	273.3	274.1	274.7	274.6	274.7	279.1	280.0	280.9	r283.0	281.8	281.5	280.6	280.9
Finished consumer goods excluding foods	276.3	277.0	277.7	277.8	277.7	277.9	281.6	282.4	283.2	r285.2	284.1	283.3	281.7	281.6
Finished consumer goods less energy	233.9	232.8	233.4	235.0	235.0	234.9	237.2	237.2	237.6	r240.5	240.8	240.7	242.4	244.1
Intermediate materials less foods and feeds	310.1	310.7	311.2	312.7	314.5	314.6	314.6	314.5	314.9	r316.4	316.6	316.3	315.3	314.8
Intermediate materials less energy	285.2	284.7	285.5	287.2	288.5	288.7	288.8	288.5	288.7	r289.9	290.9	290.7	291.2	291.7
Intermediate foods and feeds	250.7	253.1	253.2	251.1	250.2	243.5	239.3	235.2	235.2	r238.8	240.6	237.8	240.7	245.0
Crude materials less agricultural products	545.8	557.5	551.3	550.6	549.1	551.4	543.4	540.7	543.5	r546.1	543.9	538.2	532.2	531.7
Crude materials less energy	254.0	257.9	259.7	261.8	258.0	250.4	243.2	235.8	231.6	r239.1	243.4	242.8	247.3	252.5

[1] Data for January 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r=revised.

24. Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981 May	1981 June	1981 July	1981 Aug.	1981 Sept.	1981 Oct.	1981 Nov.	1981 Dec.	1982 Jan.[1]	1982 Feb.	1982 Mar.	1982 Apr.	1982 May
	All commodities	293.4	294.1	294.8	296.2	296.4	295.7	296.1	295.5	295.8	r298.3	298.5	297.9	297.9	298.6
	All commodities (1967-69 = 100)	311.3	312.0	312.8	314.3	314.5	313.7	314.2	313.5	313.8	r316.5	316.7	316.1	316.1	316.8
	Farm products and processed foods and feeds	251.5	252.9	254.3	256.8	254.2	250.3	248.0	242.5	241.0	r246.0	248.5	247.5	251.4	255.6
	Industrial commodities	304.1	304.7	305.1	306.2	307.2	307.4	309.0	309.3	310.0	r311.8	311.4	311.0	309.9	309.5
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	254.9	259.6	260.7	263.3	257.9	251.1	243.1	237.4	234.6	r242.2	247.1	244.6	250.6	256.1
01-1	Fresh and dried fruits and vegetables	267.0	275.3	263.3	265.6	258.1	252.8	248.8	254.0	280.5	r289.2	280.3	256.4	266.7	270.7
01-2	Grains	248.4	257.7	257.1	257.4	242.7	227.0	227.6	226.5	213.6	225.2	223.2	220.9	226.0	229.2
01-3	Livestock	248.0	251.8	263.0	266.5	262.0	257.3	244.5	231.1	225.0	236.8	251.2	255.6	267.6	282.9
01-4	Live poultry	201.2	207.2	210.0	215.3	210.3	196.7	185.7	175.0	171.4	186.6	197.3	197.7	186.2	192.7
01-5	Plant and animal fibers	242.0	258.3	259.6	251.3	232.5	208.5	211.7	196.5	180.4	198.2	193.6	199.7	207.4	214.1
01-6	Fluid milk	287.4	283.6	285.0	284.3	285.0	287.3	294.3	288.2	286.7	287.6	285.8	282.5	280.3	278.8
01-7	Eggs	187.1	185.0	174.6	186.1	180.7	183.2	193.8	209.7	195.5	187.0	200.6	204.0	192.1	164.3
01-8	Hay, hayseeds, and oilseeds	274.1	299.0	285.3	290.0	284.3	267.2	230.4	221.1	218.8	218.4	217.6	213.7	222.8	224.3
01-9	Other farm products	274.3	259.7	242.7	250.2	253.9	268.0	263.3	273.1	280.2	280.1	273.7	273.0	274.2	273.9
02	Processed foods and feeds	248.7	248.2	249.9	252.2	251.2	248.9	246.6	244.3	243.6	r247.1	248.3	248.1	250.8	254.4
02-1	Cereal and bakery products	255.5	256.3	256.4	258.3	257.7	258.5	256.9	258.5	255.1	256.6	256.3	254.2	253.8	253.9
02-2	Meats, poultry, and fish	248.2	245.2	248.6	257.1	254.4	253.3	246.6	240.0	236.1	r243.7	247.4	249.7	257.1	267.1
02-3	Dairy products	245.7	244.6	245.2	245.1	245.3	245.5	246.8	246.9	247.2	247.7	248.0	248.0	248.4	248.5
02-4	Processed fruits and vegetables	261.1	259.4	262.5	265.9	267.3	270.0	271.7	270.5	271.8	r273.2	274.7	275.7	274.5	273.4
02-5	Sugar and confectionery	276.8	262.8	274.8	266.0	267.3	246.8	246.7	244.1	247.6	r256.8	260.3	255.0	256.4	265.8
02-6	Beverages and beverage materials	247.5	247.6	248.1	249.0	249.4	249.1	250.0	251.4	251.9	r253.9	254.2	255.7	256.6	256.7
02-7	Fats and oils	227.5	229.2	227.3	234.8	220.5	224.3	223.4	221.5	219.1	r216.6	218.1	214.1	218.6	222.2
02-8	Miscellaneous processed foods	250.1	251.1	251.5	252.2	252.1	253.0	249.9	250.1	250.1	r251.0	250.9	249.6	249.5	248.0
02-9	Prepared animal feeds	230.3	241.0	234.3	232.2	228.9	222.9	218.1	214.7	217.2	r217.4	215.4	212.0	216.1	217.4
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	199.6	199.2	200.1	201.3	202.4	202.9	204.0	203.6	203.4	r205.0	204.2	205.0	204.7	205.1
03-1	Synthetic fibers (12/75 = 100)	156.7	156.4	157.9	159.7	161.2	161.0	162.7	161.6	161.5	r162.9	164.1	163.8	162.1	164.3
03-2	Processed yarns and threads (12/75 = 100)	137.8	138.0	139.3	140.3	142.0	142.3	144.4	140.3	139.6	r139.2	134.9	140.8	140.4	141.0
03-3	Gray fabrics (12/75 = 100)	146.7	145.8	147.4	148.2	149.0	149.1	148.0	147.4	147.2	r148.2	147.4	147.1	145.8	145.5
03-4	Finished fabrics (12/75 = 100)	125.2	125.7	125.6	126.0	126.8	126.8	126.7	126.5	125.6	r126.8	126.9	125.7	125.5	125.4
03-81	Apparel	185.5	186.2	186.2	187.2	187.8	189.0	189.9	190.8	191.0	r192.7	191.0	191.7	192.2	192.7
03-82	Textile housefurnishings	228.2	224.0	223.9	227.1	228.8	232.2	233.0	233.4	233.6	r237.6	245.5	246.2	246.5	246.4
04	Hides, skins, leather, and related products	261.5	263.7	261.6	261.1	261.3	261.7	260.0	259.8	260.7	r261.8	263.3	262.7	264.4	263.4
04-2	Leather	319.5	330.0	321.0	319.0	313.7	313.2	313.7	311.3	312.3	r319.0	317.8	315.5	313.2	309.5
04-3	Footwear	241.2	241.4	241.5	242.4	242.5	242.9	239.6	239.8	240.1	r238.9	239.2	240.6	243.7	242.5
04-4	Other leather and related products	243.5	244.2	244.3	242.9	245.1	245.0	245.0	245.4	245.4	r247.5	253.3	253.3	253.2	253.2
05	Fuels and related products and power	694.4	709.0	707.6	704.9	704.3	703.5	699.1	698.1	702.5	r706.1	697.6	690.1	671.2	661.9
05-1	Coal	497.3	487.3	491.7	505.5	507.0	510.2	510.6	512.7	515.2	r525.3	529.1	527.0	532.5	534.4
05-2	Coke	456.5	467.9	469.7	469.7	469.7	469.7	469.7	469.7	469.7	r469.7	470.3	468.1	468.1	468.2
05-3	Gas fuels[2]	939.8	933.9	954.6	969.4	949.3	976.6	985.6	983.0	1,003.7	r987.9	987.9	993.8	996.6	1,003.4
05-4	Electric power	366.8	360.4	366.6	374.6	385.8	383.8	378.4	378.3	384.2	r392.8	392.6	404.1	406.7	405.5
05-61	Crude petroleum[3]	803.6	839.9	815.9	798.9	796.8	796.8	788.2	785.9	787.2	r787.2	770.4	745.0	718.0	718.2
05-7	Petroleum products, refined[4]	805.8	835.3	828.1	816.3	813.4	806.1	802.3	798.3	798.6	r801.9	789.4	770.5	733.4	712.7
06	Chemicals and allied products	287.8	288.6	290.5	291.3	293.3	293.3	292.4	292.0	291.8	r292.9	294.5	294.6	294.5	296.2
06-1	Industrial chemicals[5]	363.8	368.5	368.7	370.4	371.5	371.8	367.9	363.7	362.8	r362.9	362.8	362.6	359.6	358.1
06-21	Prepared paint	249.9	250.0	250.0	250.7	250.7	250.7	250.7	254.5	256.4	r258.9	259.3	259.3	259.3	265.1
06-22	Paint materials	300.2	300.3	300.8	304.5	306.5	306.0	308.1	308.3	305.8	r306.6	306.6	306.8	306.8	306.2
06-3	Drugs and pharmaceuticals	193.4	192.4	193.2	195.5	195.0	197.8	198.5	198.2	198.9	r202.2	203.0	204.8	208.6	209.4
06-4	Fats and oils, inedible	295.6	312.1	303.1	290.9	305.6	285.6	277.7	282.5	280.4	272.8	274.2	290.1	282.6	288.4
06-5	Agricultural chemicals and chemical products	284.8	279.1	288.9	288.9	293.4	292.6	293.1	295.7	294.9	r296.8	297.9	297.0	296.3	294.9
06-6	Plastic resins and materials	289.2	287.9	290.0	295.9	297.5	296.8	299.5	293.2	294.2	r286.1	295.9	296.8	296.1	285.4
06-7	Other chemicals and allied products	254.4	254.8	256.3	254.8	257.3	257.4	256.9	259.9	260.0	r263.8	265.0	267.7	269.0	275.9
07	Rubber and plastic products	232.8	231.8	233.4	232.1	234.1	235.7	237.3	238.0	238.3	r237.3	241.0	241.8	241.9	242.9
07-1	Rubber and rubber products	256.7	254.4	256.8	254.7	256.9	260.3	262.9	264.4	264.6	r262.5	269.7	269.3	269.7	271.2
07-11	Crude rubber	281.7	283.2	285.2	284.2	284.7	283.1	279.8	279.0	280.8	281.8	282.1	282.8	283.2	283.6
07-12	Tires and tubes	250.9	251.2	251.2	246.8	249.9	256.5	257.1	255.9	255.4	r253.6	258.6	256.3	254.4	255.0
07-13	Miscellaneous rubber products	252.4	245.7	250.9	251.4	253.1	253.9	261.1	266.7	267.2	r263.8	274.9	278.1	278.8	284.6
07-2	Plastic products (6/78 = 100)	128.4	128.6	129.1	128.7	129.8	129.9	130.3	130.3	130.6	130.5	130.9	132.0	132.4	132.3
08	Lumber and wood products	292.8	298.4	298.1	296.5	294.5	289.3	284.3	282.1	285.4	r285.5	285.4	285.4	288.1	283.9
08-1	Lumber	325.2	336.3	335.8	332.4	329.9	320.2	311.7	306.6	309.9	r310.0	308.3	308.1	311.5	309.2
08-2	Millwork	273.4	274.8	272.2	273.6	272.3	271.4	271.3	271.8	273.7	r277.1	278.4	276.4	276.4	275.8
08-3	Plywood	245.7	248.3	251.5	247.8	245.6	240.8	234.3	233.5	239.7	r237.4	236.7	237.1	234.1	230.6
08-4	Other wood products	239.2	238.2	239.8	240.7	239.8	240.5	239.9	239.3	239.4	r239.2	239.8	239.6	237.7	237.3

See footnotes at end of table.

24. Continued—Producer Price Indexes, by commodity groupings

[1967=100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1980	1981								1982				
			May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.[1]	Feb.	Mar.	Apr.	May
	INDUSTRIAL COMMODITIES—Continued														
09	Pulp, paper, and allied products	273.7	272.1	272.9	274.9	275.9	277.8	279.2	280.4	281.0	r285.5	285.4	286.3	287.9	288.1
09-1	Pulp, paper, and products, excluding building paper and board	271.9	269.9	271.2	272.3	273.7	274.8	275.7	275.8	275.6	276.1	277.0	277.3	276.4	275.4
09-11	Woodpulp	368.1	394.2	394.2	394.2	394.2	394.2	402.3	413.7	413.7	r410.3	412.8	414.1	392.3	388.2
09-12	Wastepaper	175.7	182.7	182.9	182.1	182.1	178.5	165.1	144.5	143.4	135.2	128.8	129.2	128.1	121.5
09-13	Paper	280.0	275.9	278.5	279.7	282.1	285.9	287.8	287.4	287.2	r289.2	288.5	289.5	291.7	288.8
09-14	Paperboard	258.2	258.8	259.2	259.4	260.6	261.6	261.7	261.6	260.0	258.7	261.4	261.1	261.2	258.8
09-15	Converted paper and paperboard products	259.0	258.8	259.9	261.2	262.4	262.8	263.2	263.1	263.2	263.9	264.9	265.5	265.0	264.7
09-2	Building paper and board	231.3	237.3	237.4	235.5	234.2	234.2	233.3	232.1	230.3	r233.8	231.1	237.5	235.5	239.5
10	Metals and metal products	300.4	299.1	298.4	302.0	304.1	304.9	305.3	304.2	303.3	r304.7	305.0	302.6	302.8	303.4
10-1	Iron and steel	333.8	330.4	330.1	338.8	339.9	339.8	341.3	340.0	339.9	343.1	343.0	342.4	342.6	341.2
10-13	Steel mill products	337.6	331.8	332.2	344.9	344.9	345.3	348.7	348.6	348.9	r350.6	350.5	350.5	352.2	352.1
10-2	Nonferrous metals	286.0	287.7	284.5	282.8	287.3	289.4	285.4	281.1	277.1	r274.4	274.2	267.6	268.1	263.5
10-3	Metal containers	315.9	314.1	314.1	315.2	318.7	318.8	318.2	318.1	316.8	r324.3	325.4	326.1	329.7	330.1
10-4	Hardware	262.4	259.4	259.7	263.8	265.3	267.8	269.5	271.5	272.0	r274.1	272.5	275.7	276.2	276.7
10-5	Plumbing fixtures and brass fittings	267.4	266.2	268.9	270.9	271.2	271.6	272.9	273.1	274.0	r274.6	276.1	278.9	280.3	281.0
10-6	Heating equipment	223.9	222.3	223.5	226.4	227.9	228.5	229.0	228.8	229.9	r233.4	231.9	233.5	235.8	237.3
10-7	Fabricated structural metal products	295.4	294.0	295.0	297.9	299.3	300.0	302.6	303.2	303.0	r303.4	303.5	304.5	305.0	304.8
10-8	Miscellaneous metal products	270.8	269.7	269.4	272.0	272.9	273.7	276.1	278.0	278.3	r281.2	284.0	284.6	285.3	290.0
11	Machinery and equipment	263.1	260.7	262.1	264.8	266.2	268.1	269.3	270.4	272.0	r274.1	274.9	275.7	277.3	278.1
11-1	Agricultural machinery and equipment	287.7	285.7	286.8	288.1	290.3	292.8	295.5	300.8	302.8	r303.1	303.7	304.6	306.1	307.0
11-2	Construction machinery and equipment	320.8	318.4	320.1	323.8	325.0	326.5	329.3	329.6	332.0	337.0	338.1	337.4	341.4	343.4
11-3	Metalworking machinery and equipment	301.2	299.9	301.3	302.9	303.5	305.3	306.6	307.9	312.9	r315.9	315.8	317.0	318.7	320.3
11-4	General purpose machinery and equipment	288.5	285.9	287.0	290.6	292.3	293.9	295.1	296.2	297.9	r300.0	300.8	301.5	302.9	303.3
11-6	Special industry machinery and equipment	309.0	307.2	308.8	311.0	310.3	312.8	314.6	315.0	316.4	r320.4	320.3	320.6	323.1	324.1
11-7	Electrical machinery and equipment	220.1	217.5	219.2	221.1	222.8	224.2	225.3	226.0	227.0	r228.7	229.4	230.5	231.6	231.7
11-9	Miscellaneous machinery	252.3	248.8	250.1	254.0	256.0	258.5	259.0	259.8	260.4	r261.4	263.4	264.1	266.4	267.2
12	Furniture and household durables	198.4	197.4	197.3	199.5	199.6	201.0	201.3	202.1	202.9	r203.5	203.9	204.7	205.6	206.1
12-1	Household furniture	219.4	216.4	218.6	220.0	220.7	222.2	222.8	225.1	226.6	r227.5	228.3	228.5	230.6	230.9
12-2	Commercial furniture	257.6	257.7	257.9	258.7	259.1	261.6	262.1	263.3	263.9	r266.7	271.6	273.9	274.5	275.5
12-3	Floor coverings	178.6	179.5	180.7	182.8	181.9	181.7	180.9	182.3	181.4	r180.3	179.8	179.8	180.3	180.5
12-4	Household appliances	186.9	185.5	186.1	188.8	189.1	190.1	190.8	190.9	191.3	r193.4	193.8	195.9	196.3	197.8
12-5	Home electronic equipment	89.1	90.8	86.7	87.4	87.6	87.8	88.1	88.0	89.6	r89.3	87.5	88.8	88.2	88.1
12-6	Other household durable goods	280.8	276.7	278.4	282.1	280.9	285.8	285.8	285.3	286.2	r283.4	283.0	284.3	283.5	283.1
13	Nonmetallic mineral products	309.5	312.0	313.6	314.3	314.1	313.2	313.3	313.7	313.5	r315.6	318.4	319.7	320.0	319.1
13-11	Flat glass	212.8	210.2	210.3	218.3	218.3	218.3	218.5	218.5	216.1	r216.2	216.1	216.2	216.2	216.2
13-2	Concrete ingredients	296.3	297.5	297.5	297.7	298.0	298.5	298.4	298.5	298.7	r306.2	308.1	309.5	309.2	310.7
13-3	Concrete products	291.2	291.2	293.5	293.4	293.4	292.9	293.3	293.4	293.6	r295.5	295.6	296.0	297.3	297.1
13-4	Structural clay products, excluding refractories	249.7	250.1	250.7	250.9	250.9	255.3	256.2	256.5	257.5	r257.5	257.4	257.4	260.7	258.1
13-5	Refractories	302.5	304.0	307.1	307.1	307.1	307.1	307.8	308.9	311.3	r316.8	330.9	338.4	339.7	340.4
13-6	Asphalt roofing	407.0	407.4	428.5	421.9	420.9	401.6	402.9	410.2	405.6	r401.3	398.8	392.8	385.2	384.0
13-7	Gypsum products	256.2	261.1	260.7	259.7	255.3	252.9	252.4	251.3	249.7	250.4	255.0	260.7	262.8	259.4
13-8	Glass containers	328.5	335.3	335.3	335.5	335.5	335.5	335.5	335.5	335.5	r335.4	349.6	355.2	357.4	357.4
13-9	Other nonmetallic minerals	463.9	477.6	476.8	476.2	475.3	474.3	473.3	473.5	474.7	r474.7	479.0	480.1	478.8	472.1
14	Transportation equipment (12/68 = 100)	235.4	233.6	234.3	236.0	235.9	231.8	244.5	246.3	246.8	r248.6	244.7	244.9	245.6	247.2
14-1	Motor vehicles and equipment	237.5	238.0	236.7	237.4	238.4	232.8	247.8	248.9	249.5	r250.8	246.1	246.4	246.6	248.7
14-4	Railroad equipment	338.2	331.2	331.4	338.1	338.7	338.7	338.7	341.3	340.1	r345.8	352.4	352.8	363.9	349.6
15	Miscellaneous products	265.6	266.9	266.3	263.2	262.6	267.0	268.5	269.5	267.6	r268.3	273.7	272.9	273.3	272.3
15-1	Toys, sporting goods, small arms, ammunition	212.2	211.4	211.2	213.2	212.7	213.6	213.0	212.7	213.3	r218.4	221.0	221.6	221.9	222.7
15-2	Tobacco products	268.3	268.7	268.7	268.8	268.8	274.5	278.2	278.2	278.2	r278.2	306.4	306.4	306.5	306.7
15-3	Notions	259.6	267.8	268.0	267.5	267.7	267.8	269.7	269.7	269.7	r270.3	270.7	271.8	271.8	280.3
15-4	Photographic equipment and supplies	210.1	212.5	212.5	211.4	207.1	208.7	208.9	209.0	209.1	r209.9	210.8	212.5	214.6	210.9
15-5	Mobile homes (12/74 = 100)	(6)	(6)	(6)	158.1	158.3	158.7	159.1	159.3	159.3	r159.5	159.6	161.6	162.0	162.1
15-9	Other miscellaneous products	346.9	340.4	346.9	333.1	334.6	345.5	348.5	344.8	344.6	r342.2	340.9	334.3	333.5	330.8

[1] Data for January 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Prices for natural gas are lagged 1 month.

[3] Includes only domestic production.

[4] Most prices for refined petroleum products are lagged 1 month.

[5] Some prices for industrial chemicals are lagged 1 month.

[6] Not available.

r = revised.

25. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1981	1981								1982				
		May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.[1]	Feb.	Mar.	Apr.	May
All commodities — less farm products	295.7	296.1	296.7	298.0	298.7	298.5	299.5	299.4	300.0	^{r}302.0	301.8	301.4	300.9	301.1
All foods	251.9	250.3	252.2	255.2	253.7	251.7	249.1	247.4	247.6	^{r}251.6	253.5	251.5	254.4	257.9
Processed foods	252.2	250.5	253.1	256.0	256.0	252.8	250.0	247.6	248.5	^{r}250.5	252.2	252.1	254.9	258.0
Industrial commodities less fuels	....	262.9	263.5	265.0	266.1	266.4	268.7	269.0	269.4	^{r}271.1	271.4	271.8	272.2	272.8
Selected textile mill products (Dec. 1975 = 100)	135.9	135.7	135.9	136.8	137.2	138.1	138.2	138.4	137.9	139.3	140.0	139.0	138.9	138.9
Hosiery	134.3	134.6	135.7	135.8	135.3	135.5	136.5	136.5	136.7	^{r}136.9	137.0	137.5	138.1	138.5
Underwear and nightwear	203.5	202.3	203.5	204.7	204.7	204.7	204.7	205.7	206.3	^{r}213.9	216.0	216.4	216.4	216.3
Chemicals and allied products, including synthetic rubber and fibers and yarns	278.6	279.0	281.2	282.3	284.0	284.4	283.8	283.2	283.1	^{r}284.3	286.0	285.8	285.7	287.3
Pharmaceutical preparations	186.8	185.7	186.6	189.0	189.4	191.6	192.8	192.5	193.3	^{r}196.8	198.0	200.0	204.4	205.3
Lumber and wood products, excluding millwork	303.1	311.5	312.2	308.7	306.2	298.0	290.1	286.4	290.7	^{r}289.9	288.3	288.6	289.9	287.2
Special metals and metal products	279.4	277.9	277.9	280.2	281.9	280.1	286.7	286.8	286.6	^{r}287.9	286.1	285.5	285.7	286.4
Fabricated metal products	280.0	278.5	279.0	281.7	283.1	283.9	286.0	287.0	287.1	^{r}289.4	290.4	291.5	292.5	294.3
Copper and copper products	204.0	206.6	203.7	202.5	206.2	205.1	201.9	198.8	195.4	^{r}194.5	194.1	191.0	190.5	191.6
Machinery and motive products	256.7	254.4	255.6	257.4	258.6	257.7	264.3	265.8	266.9	^{r}268.9	267.6	268.2	269.3	270.5
Machinery and equipment, except electrical	288.3	285.9	287.3	290.4	291.7	293.8	295.0	296.4	298.4	^{r}300.7	301.6	302.2	304.1	305.2
Agricultural machinery, including tractors	296.2	293.7	294.8	295.6	298.2	301.6	305.7	312.5	314.7	^{r}315.1	314.6	315.5	317.7	318.2
Metalworking machinery	329.4	327.1	328.3	330.1	331.4	333.9	336.7	338.3	341.2	^{r}343.8	343.3	346.4	348.8	349.4
Numerically controlled machine tools (Dec. 1971 = 100)	239.4	237.3	241.4	241.7	241.8	241.8	241.8	242.2	242.0	^{r}240.1	240.1	240.3	240.2	240.3
Total tractors	324.0	322.0	322.5	325.5	327.8	330.7	338.3	342.2	342.3	^{r}346.9	346.2	348.4	351.7	352.4
Agricultural machinery and equipment less parts	289.0	286.7	287.9	288.6	291.1	294.0	297.6	303.5	305.8	^{r}306.5	306.3	307.3	309.2	309.6
Farm and garden tractors less parts	298.9	297.7	298.0	299.0	301.4	305.5	313.0	319.6	319.7	^{r}319.7	318.5	318.8	322.3	322.9
Agricultural machinery, excluding tractors less parts	294.4	290.8	292.5	293.9	295.8	298.7	299.9	303.5	310.9	^{r}311.6	311.6	307.3	314.3	314.7
Industrial valves	314.8	314.3	315.3	317.5	319.8	322.7	322.4	323.4	325.3	^{r}326.6	326.8	327.1	327.7	327.9
Industrial fittings	302.1	303.0	303.0	303.0	303.0	304.3	304.1	304.1	304.1	304.1	304.1	304.1	309.1	309.1
Construction materials	283.0	284.2	285.0	285.7	285.5	284.4	284.6	284.1	285.2	^{r}286.6	286.9	287.4	288.1	287.9

[1] Data for January 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

26. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1981	1981								1982				
		May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.[1]	Feb.	Mar.	Apr.	May
Total durable goods	269.8	266.6	269.1	270.8	271.9	271.8	275.0	275.4	276.0	^{r}277.6	277.3	277.3	278.1	278.4
Total nondurable goods	312.4	314.8	315.7	316.8	316.2	315.0	312.8	311.4	311.4	314.7	315.3	314.2	313.5	314.5
Total manufactures	285.9	286.2	286.9	288.0	288.6	288.3	289.8	289.7	289.9	^{r}291.9	291.9	291.9	290.9	291.3
Durable	269.6	268.2	268.9	270.6	271.7	271.7	275.1	275.8	276.5	^{r}278.0	277.7	277.8	278.7	279.1
Nondurable	303.6	305.7	306.4	306.9	306.9	306.3	305.5	304.5	304.3	306.8	307.2	305.8	303.9	304.1
Total raw or slightly processed goods	330.7	334.2	335.4	337.9	335.8	332.7	326.4	323.3	323.6	^{r}328.9	330.6	328.9	332.2	334.9
Durable	271.4	280.4	272.4	271.2	275.9	270.4	263.7	253.4	247.8	^{r}253.8	254.4	250.7	245.9	239.4
Nondurable	334.0	337.1	338.9	341.8	339.1	336.3	330.0	327.4	328.2	333.4	335.1	334.7	337.5	340.8

[1] Data for January 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

27. Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981								1982				
			May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.[1]	Feb.	Mar.	Apr.	May
	MINING														
1011	Iron ores (12/75 = 100)	167.3	168.1	168.1	168.1	168.1	168.1	168.1	171.3	171.3	171.3	171.3	171.3	171.3	177.1
1092	Mercury ores (12/75 = 100)	346.0	347.9	352.0	358.3	365.4	364.5	354.1	354.1	343.7	347.9	313.7	325.0	327.0	308.3
1211	Bituminous coal and lignite	493.9	484.5	488.4	502.1	503.4	506.0	506.2	507.8	510.3	^{r}520.9	524.7	521.9	527.2	529.4
1311	Crude petroleum and natural gas	898.8	919.7	713.7	911.5	900.3	913.6	900.8	907.5	921.7	^{r}919.7	913.5	904.7	894.9	902.0
1442	Construction sand and gravel	277.3	278.4	278.4	278.4	278.2	279.2	279.7	279.8	290.7	^{r}287.4	289.5	292.7	292.2	294.4
1455	Kaolin and ball clay (6/76 = 100)	138.7	137.1	137.1	137.1	137.1	137.1	143.4	143.4	143.4	^{r}149.6	149.6	149.6	151.7	151.7
	MANUFACTURING														
2011	Meatpacking plants	243.1	243.6	245.9	252.6	250.9	252.7	244.1	237.0	234.1	^{r}237.6	243.8	247.0	253.3	264.3
2013	Sausages and other prepared meats	241.3	230.4	238.1	246.0	254.0	253.9	252.2	248.9	247.0	^{r}245.6	250.5	248.2	253.4	265.9
2016	Poultry dressing plants	192.0	196.2	198.3	203.6	201.2	188.8	175.5	172.8	166.7	(2)	(2)	(2)	(2)	(2)
2021	Creamery butter	274.8	273.4	273.5	273.8	273.7	275.0	279.2	279.5	275.0	275.0	276.4	276.8	275.3	274.9

See footnotes at end of table.

27. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981								1982				
			May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.[1]	Feb.	Mar.	Apr.	May
	MANUFACTURING—Continued														
2022	Cheese, natural and processed (12/72 = 100)	215.8	216.2	216.1	213.8	214.5	215.0	215.4	215.9	218.4	218.6	217.9	218.8	218.8	217.1
2024	Ice cream and frozen desserts (12/72 = 100)	211.8	212.4	212.4	212.7	212.7	212.7	212.5	212.5	212.7	212.8	212.8	210.9	214.2	214.2
2033	Canned fruits and vegetables	248.5	245.9	248.9	251.6	252.9	254.3	257.0	258.4	258.9	r260.8	262.2	262.7	261.5	262.3
2034	Dehydrated food products (12/73 = 100)	177.6	175.3	175.0	180.5	178.7	183.4	182.1	181.4	182.1	184.0	181.8	181.5	181.5	178.5
2041	Flour mills (12/71 = 100)	185.9	189.4	189.3	186.5	191.0	185.3	191.1	191.5	189.2	r191.5	187.4	187.3	182.5	188.4
2044	Rice milling	277.2	300.3	300.3	297.4	284.3	268.2	247.3	235.4	215.1	205.9	182.2	183.5	177.9	183.0
2048	Prepared foods, n.e.c. (12/75 = 100)	124.6	129.8	127.5	125.9	124.8	118.6	117.3	116.4	116.0	r116.0	116.5	114.8	116.4	116.7
2061	Raw cane sugar	273.5	224.8	263.3	272.2	254.6	212.3	219.9	224.3	230.8	247.6	245.1	233.0	242.9	269.2
2063	Beet sugar	320.6	334.4	339.7	274.1	287.5	270.7	250.3	230.4	250.5	r260.4	292.6	272.4	272.6	280.2
2067	Chewing gum	308.8	303.1	303.1	303.1	303.2	303.2	303.2	303.2	303.2	303.3	303.3	303.4	303.4	303.4
2074	Cottonseed oil mills	199.0	216.6	212.3	212.0	208.0	182.3	172.0	167.2	182.4	184.9	170.6	158.2	164.6	167.9
2075	Soybean oil mills	245.8	258.1	248.4	253.7	245.8	234.2	229.7	221.2	221.9	r223.1	218.9	217.8	225.0	232.0
2077	Animal and marine fats and oils	288.1	304.3	291.3	288.8	294.1	281.2	274.0	272.3	268.6	r260.4	262.6	271.8	273.3	271.5
2083	Malt	282.5	286.1	286.1	286.1	286.1	275.4	275.4	275.4	275.4	267.1	267.1	267.1	258.1	258.8
2085	Distilled liquor, except brandy (12/75 = 100)	134.7	134.3	134.6	134.6	135.5	135.5	135.5	137.9	137.9	140.1	137.9	140.2	140.2	139.8
2091	Canned and cured seafoods (12/73 = 100)	187.8	187.3	187.5	187.4	188.4	188.8	188.2	188.3	188.5	187.2	187.0	187.7	189.2	188.0
2092	Fresh or frozen packaged fish	369.6	378.2	375.5	367.6	347.1	363.5	358.9	360.8	369.5	r390.8	390.8	420.7	433.8	427.5
2095	Roasted coffee (12/72 = 100)	238.0	238.6	238.6	236.4	235.7	237.3	238.2	239.2	240.4	r245.1	247.1	248.7	250.7	247.9
2098	Macaroni and spaghetti	252.0	246.6	246.6	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5
2111	Cigarettes	277.7	278.3	278.3	278.3	278.3	284.2	288.4	288.4	288.4	288.4	319.7	319.7	319.7	319.8
2121	Cigars	169.1	168.5	168.5	169.7	169.7	174.5	174.5	174.5	174.5	r174.5	175.6	175.6	176.8	176.6
2131	Chewing and smoking tobacco	320.9	320.8	320.8	321.0	321.3	325.3	326.1	326.1	326.1	r326.1	349.4	349.4	349.4	353.6
2211	Weaving mills, cotton (12/72 = 100)	234.1	233.5	234.3	234.7	237.4	236.0	233.2	229.8	227.6	r227.3	226.9	226.5	226.1	227.7
2221	Weaving mills, synthetic (12/77 = 100)	136.6	136.7	137.1	138.0	139.3	139.5	139.4	139.8	139.5	139.8	139.8	139.9	139.2	138.9
2251	Women's hosiery, except socks (12/75 = 100)	113.5	114.2	115.6	115.5	115.0	115.0	115.2	115.1	115.2	115.6	115.6	116.2	116.3	117.0
2254	Knit underwear mills	210.2	210.0	210.0	210.7	210.8	210.9	210.9	212.8	213.0	r225.2	234.7	235.5	235.6	226.0
2257	Circular knit fabric mills (6/76 = 100)	110.8	110.5	110.4	111.0	112.0	111.9	112.0	112.4	111.8	r112.4	112.3	110.6	110.1	109.7
2261	Finishing plants, cotton (6/76 = 100)	144.9	147.0	146.2	146.3	146.2	145.4	144.9	143.5	141.4	140.5	140.3	140.8	141.6	141.4
2262	Finishing plants, synthetics, silk (6/76 = 100)	126.5	126.6	126.6	127.1	127.8	129.0	129.1	129.1	128.6	r129.4	129.7	128.3	128.1	128.2
2272	Tufted carpets and rugs	154.3	154.5	155.6	158.3	157.4	157.3	155.7	157.0	158.7	r155.5	155.3	155.7	156.1	158.4
2281	Yarn mills, except wool (12/71= 100)	221.8	224.1	225.8	225.1	225.4	223.8	222.4	219.9	217.2	r216.3	215.3	215.6	214.6	214.9
2282	Throwing and winding mills (6/76 = 100)	138.6	139.1	139.3	142.7	146.8	148.0	154.5	145.6	146.0	r145.7	135.2	150.8	150.9	152.6
2284	Thread mills (6/76 = 100)	151.4	150.9	151.1	151.1	151.1	154.8	157.0	157.0	156.8	156.8	156.8	156.8	156.7	156.6
2298	Cordage and twine (12/77 = 100)	134.8	134.3	134.3	134.3	134.3	139.3	139.3	139.3	140.7	141.0	141.0	141.0	141.0	141.0
2311	Men's and boys' suits and coats	223.9	220.4	224.6	225.9	226.2	226.5	227.4	228.4	230.5	r233.7	232.1	233.9	234.3	234.6
2321	Men's and boys' shirts and nightwear	208.8	207.1	207.5	210.5	210.6	211.5	212.4	212.6	213.4	r173.4	181.7	182.7	183.1	173.8
2322	Men's and boys' underwear	230.6	231.0	230.7	230.8	230.8	230.8	230.8	233.0	233.0	r246.0	246.9	247.4	247.4	247.4
2323	Men's and boys' neckwear (12/75 = 100)	114.6	115.4	115.4	113.9	113.9	113.9	113.9	113.9	113.9	115.3	117.3	117.3	117.3	117.3
2327	Men's and boys' separate trousers	186.1	186.1	186.1	186.4	186.4	186.4	186.6	186.9	187.1	r188.4	187.0	189.2	193.0	194.9
2328	Men's and boys' work clothing	248.4	248.2	248.3	250.8	251.1	251.2	253.1	253.2	253.3	r252.5	251.8	252.9	253.6	253.7
2331	Women's and misses' blouses and waists (6/78 = 100)	119.8	118.4	118.5	121.0	121.2	121.3	126.4	126.7	126.7	r126.5	123.8	123.9	123.8	123.7
2335	Women's and misses' dresses (12/77 = 100)	121.1	122.3	122.5	123.0	124.3	123.5	123.4	124.1	122.7	r123.0	122.9	123.6	122.9	122.9
2341	Women's and children's underwear (12/72 = 100)	169.9	169.2	170.5	170.6	170.6	170.6	170.6	171.6	171.6	r174.7	175.4	175.7	175.7	177.2
2342	Brassieres and allied garments (12/75 = 100)	136.8	135.0	136.9	138.8	138.8	138.8	138.8	138.9	140.1	r145.1	149.2	149.2	149.2	148.5
2361	Children's dresses and blouses (12/77 = 100)	120.3	120.5	120.5	121.6	121.7	121.7	122.0	122.5	123.2	r123.2	122.0	122.0	121.0	121.0
2381	Fabric dress and work gloves	289.3	292.1	292.1	289.2	289.2	289.2	289.2	289.2	289.2	293.8	297.4	295.5	295.5	295.5
2394	Canvas and related products (12/77 = 100)	132.1	130.0	130.1	130.1	133.1	134.6	137.6	137.6	136.7	r144.9	145.5	147.8	146.3	146.5
2396	Automotive and apparel trimmings (12/77 = 100)	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
2421	Sawmills and planing mills (12/71 = 100)	226.2	234.8	234.8	233.5	231.2	225.2	219.5	216.5	218.6	r218.0	217.6	217.1	218.4	218.8
2436	Softwood veneer and plywood (12/75 = 100)	142.0	145.7	148.1	143.8	138.6	135.4	129.3	129.0	134.5	r132.5	131.1	132.3	129.2	128.0
2439	Structural wood members, n.e.c. (12/75 = 100)	156.6	158.2	158.2	157.6	158.9	156.6	154.8	154.2	153.2	r153.9	153.2	152.3	152.9	151.5
2448	Wood pallets and skids (12/75 = 100)	152.5	153.1	153.0	153.1	152.9	152.8	152.0	150.4	149.9	149.8	148.9	148.1	145.8	144.6
2451	Mobile homes (12/74 = 100)	156.8	155.9	156.1	156.1	158.3	158.7	159.2	159.3	160.3	r160.4	160.7	162.7	162.9	163.1
2492	Particleboard (12/75 = 100)	172.8	184.5	182.3	179.6	173.6	170.5	168.0	169.9	170.3	r172.6	170.2	173.4	176.8	178.7
2511	Wood household furniture (12/71 = 100)	197.4	196.2	197.5	199.6	199.2	200.1	201.0	202.0	202.8	r203.6	204.2	204.8	207.0	207.3
2512	Upholstered household furniture (12/71 = 100)	174.9	169.7	173.9	175.1	175.1	175.3	175.6	179.5	182.1	r184.4	182.0	182.0	184.6	185.1
2515	Mattresses and bedsprings	183.7	190.4	190.5	191.3	194.6	195.2	195.2	197.5	198.0	r204.4	210.0	210.0	210.1	210.3
2521	Wood office furniture	254.6	255.4	254.6	254.7	254.7	257.1	257.1	257.0	257.6	r261.9	271.8	271.9	271.9	271.9
2611	Pulp mills (12/73 = 100)	253.2	251.3	251.3	251.3	251.3	251.3	255.0	262.5	262.5	r258.6	260.9	262.0	255.8	254.8
2621	Paper mills, except building (12/74 = 100)	156.3	154.3	155.7	157.0	157.4	158.8	159.8	159.7	159.6	r162.0	162.0	161.9	161.8	160.5
2631	Paperboard mills (12/74 = 100)	151.8	152.1	152.3	151.7	152.4	153.7	153.6	153.5	152.7	r152.5	153.6	153.2	153.0	151.5
2647	Sanitary paper products	343.8	344.3	344.4	344.2	344.3	344.3	344.0	344.1	344.6	r344.6	345.6	345.6	345.5	344.7
2654	Sanitary food containers	245.3	239.2	242.2	246.0	252.9	253.2	253.4	253.3	253.3	r254.0	258.3	261.4	261.4	261.4
2655	Fiber cans, drums, and similar products (12/75 = 100)	163.0	160.9	160.9	163.2	163.2	163.2	167.6	167.6	170.0	r176.4	176.5	176.5	176.5	176.7
2812	Alkalies and chlorine (12/73 = 100)	305.3	302.2	309.3	308.2	310.4	316.0	317.7	317.0	324.8	r329.4	333.7	335.0	322.1	338.2
2821	Plastics materials and resins (6/76 = 100)	150.8	149.7	150.7	155.0	155.6	158.0	156.3	153.7	154.3	r150.7	158.4	151.7	151.2	151.9
2822	Synthetic rubber	292.9	293.3	296.3	297.3	299.4	299.3	301.0	301.4	302.7	r303.9	306.2	305.6	306.6	307.1
2824	Organic fiber, noncellulosic	155.7	156.2	156.8	159.2	160.3	160.6	164.2	162.5	161.9	r161.8	161.1	162.4	161.7	161.7
2873	Nitrogenous fertilizers (12/75 = 100)	142.7	148.5	143.4	143.5	143.9	142.1	142.9	144.2	142.9	142.4	142.5	142.2	142.7	141.1
2874	Phosphatic fertilizers	254.1	251.5	250.9	249.4	260.0	259.4	259.4	258.5	259.0	r261.0	265.5	261.7	258.5	256.2
2875	Fertilizers, mixing only	270.2	273.6	273.1	275.3	273.0	272.0	273.8	273.7	270.5	r274.3	275.5	278.1	278.4	278.5
2892	Explosives	312.0	314.5	312.6	315.7	319.8	316.5	318.7	316.5	315.6	r314.9	312.9	316.3	322.2	321.4
2911	Petroleum refining (6/76 = 100)	294.4	304.1	302.6	299.1	297.5	295.8	294.5	293.3	293.1	r293.0	288.8	281.9	267.5	259.2
2951	Paving mixtures and blocks (12/75 = 100)	194.3	198.8	198.4	197.1	198.3	198.0	198.3	198.4	198.0	r197.0	198.4	198.8	197.1	198.6
2952	Asphalt felts and coatings (12/75 = 100)	176.7	176.3	185.7	182.8	182.3	174.3	174.9	178.1	178.1	r174.2	173.2	170.5	167.4	167.7
3011	Tires and inner tubes (12/73 = 100)	215.9	216.2	216.2	213.1	215.5	220.6	221.0	220.1	221.2	r222.0	224.4	222.3	220.9	221.2

27. Continued—Producer Price Indexes for the output of selected SIC industries

[1967=100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981								1982				
			May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.[1]	Feb.	Mar.	Apr.	May
3021	Rubber and plastic footwear (12/71 = 100)	184.4	184.0	184.1	185.0	185.4	185.3	185.0	185.0	185.2	186.1	186.5	189.1	189.0	186.7
3031	Reclaimed rubber (12/73 = 100)	183.4	187.7	187.7	192.9	200.3	200.3	200.3	200.3	200.3	r200.3	198.1	204.9	206.9	207.2
3079	Miscellaneous plastic products (6/78 = 100)	129.8	129.1	129.6	129.2	130.2	130.3	130.8	130.8	131.0	r131.1	131.3	132.5	132.9	132.7
3111	Leather tanning and finishing (12/77 = 100)	150.6	154.7	150.7	151.3	148.5	148.3	148.2	148.8	147.5	r150.8	148.2	148.2	147.5	147.3
3143	Men's footwear, except athletic (12/75 = 100)	169.1	168.9	169.6	170.7	171.4	170.9	170.5	170.6	171.3	r173.1	171.6	173.6	174.9	175.1
3144	Women's footwear, except athletic	217.8	219.3	218.5	218.9	217.8	218.2	212.5	212.7	212.4	r208.5	211.3	211.8	215.8	213.4
3171	Women's handbags and purses (12/75 = 100)	155.5	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4
3211	Flat glass (12/71 = 100)	175.6	174.5	174.6	180.0	180.0	180.0	180.1	180.1	177.4	r177.5	177.4	177.5	177.5	177.5
3221	Glass containers	326.4	335.2	335.2	335.4	335.4	335.4	335.4	335.4	335.4	r335.3	349.5	355.1	357.3	357.3
3241	Cement, hydraulic	328.5	332.3	331.0	331.6	331.6	332.0	330.3	330.3	330.3	r339.6	338.2	338.3	337.9	338.6
3251	Brick and structural clay tile	298.9	297.4	298.5	298.9	298.9	298.9	298.9	300.5	300.5	298.9	291.8	291.8	295.9	305.8
3253	Ceramic wall and floor tile (12/75 = 100)	132.5	132.1	132.1	132.1	132.1	140.4	140.4	140.4	140.4	r140.4	136.8	136.8	137.1	138.0
3255	Clay refractories	310.4	311.0	312.2	312.3	312.3	312.5	313.9	315.2	319.9	r329.6	346.5	357.5	357.0	357.2
3259	Structural clay products, n.e.c.	222.7	223.9	223.9	223.9	223.9	227.5	231.7	231.7	236.6	r225.6	196.7	198.8	202.4	216.4
3261	Vitreous plumbing fixtures	254.9	252.5	255.8	258.7	259.6	259.0	259.0	259.3	260.1	261.1	260.6	260.7	261.9	265.4
3262	Vitreous china food utensils	335.0	336.6	336.6	336.6	336.6	336.8	336.8	344.7	344.7	347.7	347.7	347.3	336.2	345.2
3263	Fine earthenware food utensils	308.9	309.6	309.6	309.6	309.6	313.8	313.8	315.0	315.0	r315.1	314.5	314.4	312.8	314.1
3269	Pottery products, n.e.c. (12/75 = 100)	180.1	180.6	180.7	180.7	180.7	181.8	181.8	183.7	183.7	r184.3	184.2	184.1	181.4	183.6
3271	Concrete block and brick	270.4	271.2	271.2	271.2	274.0	274.2	274.3	274.2	275.1	r274.9	276.0	276.3	276.4	276.6
3273	Ready-mixed concrete	298.7	299.4	301.7	300.7	300.0	299.2	299.5	299.4	298.6	r301.9	301.4	302.0	303.3	303.9
3274	Lime (12/75 = 100)	172.5	172.6	173.0	173.1	173.9	173.7	173.7	173.5	173.8	r178.0	184.0	188.0	188.6	188.1
3275	Gypsum products	257.3	261.4	260.9	261.8	258.9	252.9	251.5	252.5	250.6	250.9	253.9	260.5	262.2	258.8
3291	Abrasive products (12/71 = 100)	232.5	233.2	234.1	235.0	235.1	237.3	237.6	241.0	241.0	r241.3	245.0	247.8	248.9	251.2
3297	Nonclay refractories (12/74 = 100)	185.3	186.6	189.7	189.7	189.7	189.7	189.7	190.2	190.3	r191.2	198.1	200.5	202.4	203.2
3312	Blast furnaces and steel mills	342.8	337.3	338.2	350.1	350.0	350.3	353.1	353.0	353.3	r354.7	354.6	354.5	356.1	355.9
3313	Electrometallurgical products (12/75 = 100)	121.8	120.6	120.7	121.2	121.5	121.4	125.4	125.4	125.3	125.3	123.4	120.3	120.3	120.3
3316	Cold finishing of steel shapes	316.2	308.2	308.5	325.0	325.7	326.2	326.4	326.4	326.7	327.0	327.0	327.0	327.6	327.6
3317	Steel pipes and tubes	341.5	334.1	336.3	348.2	350.6	350.5	362.0	362.3	363.0	r363.7	364.2	366.0	365.8	365.8
3321	Gray iron foundries (12/68 = 100)	299.5	298.4	298.4	298.8	299.9	302.0	303.3	305.2	306.1	r307.9	310.4	310.6	310.4	311.4
3333	Primary zinc	326.5	332.7	335.1	335.4	353.8	355.9	337.0	337.5	315.7	r308.6	308.9	298.6	273.4	258.9
3334	Primary aluminum	333.5	334.2	332.5	334.2	334.4	333.6	333.5	332.5	332.8	r324.1	327.9	320.7	316.5	313.8
3351	Copper rolling and drawing	212.4	212.6	210.6	208.4	212.9	214.1	212.3	209.2	207.1	r204.8	204.1	199.6	196.8	197.5
3353	Aluminum sheet, plate, and foil (12/75 = 100)	175.9	174.4	176.1	177.3	177.4	178.0	179.9	180.2	180.8	r181.8	181.6	181.4	180.1	178.7
3354	Aluminum extruded products (12/75 = 100)	180.1	180.7	180.8	181.2	181.3	181.2	181.3	181.4	181.1	r180.8	180.8	180.5	179.9	180.2
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	159.1	157.4	157.3	157.2	157.2	157.7	163.0	166.2	166.1	166.1	166.6	165.9	162.9	163.0
3411	Metal cans	305.3	304.7	304.7	305.5	306.7	306.8	307.0	306.0	304.9	r310.8	314.4	315.1	319.6	320.4
3425	Hand saws and saw blades (12/72 = 100)	201.3	200.2	200.2	204.1	204.2	204.6	204.8	205.0	206.0	r211.6	214.2	214.3	214.9	220.8
3431	Metal sanitary ware	265.0	264.8	265.2	269.2	269.7	270.2	270.3	271.6	271.8	r271.3	271.8	273.8	275.8	275.7
3465	Automotive stampings (12/75 = 100)	146.4	145.0	145.2	146.2	146.4	146.9	147.4	149.7	149.1	r150.1	152.5	152.6	152.7	153.0
3482	Small arms ammunition (12/75 = 100)	160.5	157.8	157.8	157.8	159.9	159.9	159.9	159.9	163.9	r167.5	173.2	173.2	171.9	171.9
3493	Steel springs, except wire	245.1	241.7	241.9	243.7	248.9	252.4	253.9	254.1	256.1	r255.8	257.2	256.6	256.0	255.3
3494	Valves and pipe fittings (12/71 = 100)	248.4	247.9	248.5	250.0	251.0	252.7	252.9	253.5	255.7	r257.7	257.1	257.4	256.6	259.2
3498	Fabricated pipe and fittings	361.4	359.9	361.6	364.6	370.0	375.1	377.7	378.6	379.3	378.6	377.7	376.5	385.5	385.4
3519	Internal combustion engines, n.e.c.	311.0	306.2	307.2	312.0	314.2	322.1	323.2	326.4	325.4	r329.4	330.0	330.7	332.6	337.0
3531	Construction machinery (12/76 = 100)	157.0	155.3	156.9	159.0	159.5	160.1	161.0	161.6	159.7	r162.5	163.1	163.2	164.1	165.2
3532	Mining machinery (12/72 = 100)	282.3	280.0	280.8	282.7	285.3	286.9	288.5	290.8	292.9	[illegible]	297.5	299.6	301.4	302.7
3533	Oilfield machinery and equipment	395.4	394.5	399.3	401.3	406.5	411.3	415.6	418.2	420.3	r427.2	429.1	433.7	436.2	435.8
3534	Elevators and moving stairways	253.5	251.2	251.2	252.1	252.8	254.6	257.0	260.7	265.6	r264.3	268.9	269.9	270.8	271.6
3542	Machine tools, metal forming types (12/71 = 100)	306.4	304.5	305.7	307.6	309.5	312.0	311.7	312.3	319.3	r319.7	316.9	324.5	325.5	325.6
3546	Power driven hand tools (12/76 = 100)	147.1	147.0	147.1	148.2	148.4	148.6	149.5	149.5	150.0	153.3	153.4	153.4	154.0	156.1
3552	Textile machinery (12/69 = 100)	243.4	241.2	244.4	246.2	245.4	248.2	248.0	247.9	248.9	r252.3	250.7	253.4	258.2	258.5
3553	Woodworking machinery (12/72 = 100)	224.5	219.1	219.7	224.0	225.4	228.9	228.9	229.1	229.1	r233.7	229.2	229.6	235.0	234.7
3576	Scales and balances, excluding laboratory	226.2	230.2	230.3	226.6	226.6	226.1	226.2	226.3	226.5	r228.3	228.9	229.8	229.6	229.5
3592	Carburetors, pistons, rings, valves (6/76 = 100)	177.9	172.0	176.5	180.8	181.3	182.1	185.4	187.2	187.3	r185.3	189.4	190.2	192.6	195.2
3612	Transformers	209.7	207.8	209.6	210.7	212.8	214.5	217.3	222.0	222.0	r220.5	221.9	222.4	223.2	224.7
3623	Welding apparatus, electric (12/72 = 100)	227.2	225.9	227.2	228.3	229.6	231.6	232.5	233.2	235.8	r236.8	236.0	231.5	232.9	232.9
3631	Household cooking equipment (12/75 = 100)	141.1	140.7	141.0	140.5	141.5	141.6	141.6	141.9	142.6	r146.0	146.3	146.9	146.2	146.8
3632	Household refrigerators, freezers (6/76 = 100)	132.3	129.5	130.8	135.5	135.5	136.4	137.8	137.9	137.9	r140.1	136.6	140.8	142.5	143.2
3633	Household laundry equipment (12/73 = 100)	174.2	173.9	173.6	174.1	174.6	177.2	177.0	178.4	178.8	r180.1	180.4	186.2	186.9	186.6
3635	Household vacuum cleaners	158.8	158.5	158.6	158.6	158.8	158.8	161.3	161.0	160.8	r165.6	158.3	158.8	158.2	158.3
3636	Sewing machines (12/75 = 100)	146.6	153.8	153.8	153.8	153.8	153.8	156.0	156.0	156.0	r156.0	155.2	155.2	153.7	153.7
3641	Electric lamps	277.5	275.1	278.5	275.2	280.0	283.1	285.9	284.8	281.3	r282.1	286.2	283.5	290.7	294.5
3644	Noncurrent-carrying wiring devices (12/72 = 100)	250.4	242.8	251.5	253.3	253.8	258.5	258.7	262.1	262.1	r257.9	261.5	261.5	259.5	263.0
3646	Commercial lighting fixtures (12/75 = 100)	154.4	156.2	156.2	154.4	155.5	157.6	158.9	159.3	159.2	r158.2	161.1	163.2	163.6	167.5
3648	Lighting equipment, n.e.c. (12/75 = 100)	155.7	153.3	153.7	153.8	161.3	161.7	162.0	162.4	163.1	r162.8	167.8	168.8	170.2	170.4
3671	Electron tubes receiving type	309.7	295.1	312.5	327.4	327.5	327.5	327.5	327.8	342.2	r374.1	374.9	375.1	375.2	375.0
3674	Semiconductors and related devices	90.4	90.6	90.3	89.2	89.2	91.4	91.6	92.0	91.7	90.9	90.8	91.2	90.1	89.6
3675	Electronic capacitors (12/75 = 100)	170.3	168.5	171.2	171.4	178.8	172.4	171.5	168.1	166.6	r167.4	169.3	168.6	167.8	166.6
3676	Electronic resistors (12/75 = 100)	141.3	140.8	141.2	142.1	142.5	142.7	142.7	143.0	142.8	r143.7	143.9	144.0	144.7	145.2
3678	Electronic connectors (12/75 = 100)	154.8	153.7	154.3	155.0	155.8	156.5	156.8	155.8	155.8	r155.9	156.9	157.1	156.7	156.1
3692	Primary batteries, dry and wet	182.2	181.0	181.0	181.6	182.7	182.7	182.7	182.7	182.7	r182.0	185.0	191.2	195.4	194.9
3711	Motor vehicles and car bodies (12/75 = 100)	150.2	149.6	150.3	150.3	150.1	143.4	158.6	158.7	159.1	r159.8	154.5	154.7	154.5	158.7
3942	Dolls (12/75 = 100)	131.1	130.9	130.9	130.9	130.9	130.9	130.9	130.9	130.9	r135.5	136.2	136.2	136.5	136.5
3944	Games, toys, and children's vehicles	220.5	221.8	221.9	222.0	222.0	222.2	222.2	222.6	223.9	r228.4	229.9	231.4	231.4	231.7
3955	Carbon paper and inked ribbons (12/75 = 100)	138.6	136.9	140.4	140.4	140.6	140.6	140.2	140.2	140.3	140.3	140.3	140.3	140.3	140.5
3995	Burial caskets (6/76 = 100)	139.5	138.3	138.3	138.3	140.6	143.4	143.4	143.4	142.7	142.7	143.8	145.3	145.3	149.3
3996	Hard surface floor coverings (12/75 = 100)	151.8	151.5	151.5	153.3	153.6	153.7	153.7	153.7	153.7	155.1	155.2	156.1	156.1	156.3

[1] Data for January 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

r = revised.

PRODUCTIVITY DATA

PRODUCTIVITY DATA are compiled by the Bureau of Labor Statistics from establishment data and from estimates of compensation and output supplied by the U.S. Department of Commerce and the Federal Reserve Board.

Definitions

Output is the constant dollar gross domestic product produced in a given period. Indexes of **output per hour of labor input**, or labor productivity, measure the value of goods and services produced per hour of labor. **Compensation per hour** includes wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. The data also include an estimate of wages, salaries, and supplementary payments for the self-employed, except for nonfinancial corporations, in which there are no self-employed. **Real compensation per hour** is compensation per hour adjusted by the Consumer Price Index for All Urban Consumers.

Unit labor cost measures the labor compensation cost required to produce one unit of output and is derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from the current dollar gross domestic product and dividing by output. In these tables, **unit nonlabor costs** contain all the components of unit nonlabor payments except unit profits. **Unit profits** include corporate profits and inventory valuation adjustments per unit of output.

The **implicit price deflator** is derived by dividing the current dollar estimate of gross product by the constant dollar estimate, making the deflator, in effect, a price index for gross product of the sector reported.

The use of the term "man hours" to identify the labor component of productivity and costs, in tables 28 through 31, has been discontinued. **Hours of all persons** is now used to describe the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all-employee hour** is now used to describe labor productivity in nonfinancial corporations where there are no self-employed.

Notes on the data

In the private business sector and the nonfarm business sector, the basis for the output measure employed in the computation of output per hour is Gross Domestic Product rather than Gross National Product. Computation of hours includes estimates of nonfarm and farm proprietor hours.

Output data are supplied by the Bureau of Economic Analysis, U.S. Department of Commerce, and the Federal Reserve Board. Quarterly manufacturing output indexes are adjusted by the Bureau of Labor Statistics to annual estimates of output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are from the Bureau of Economic Analysis and the Bureau of Labor Statistics.

Beginning with the September 1976 issue of the *Review*, the productivity tables were revised to reflect changeover to the new series—private business sector and nonfarm business sector—which differ from the previously published total private economy and nonfarm sector in that output imputed for owner-occupied dwellings and the household and institutions sectors, as well as the statistical discrepancy, are omitted. For a detailed explanation, see J. R. Norsworthy and L. J. Fulco, "New sector definitions for productivity series," *Monthly Labor Review*, October 1976, pages 40–42.

28. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950–81

[1977=100]

Item	1950	1955	1960	1965	1970	1974	1975	1976	1977	1978	1979	1980	1981
Private business sector:													
Output per hour of all persons	50.3	58.2	65.1	78.2	86.1	92.7	94.8	97.9	100.0	99.8	99.5	99.3	100.4
Compensation per hour	20.0	26.3	33.9	41.7	58.2	78.0	85.5	92.9	100.0	108.4	119.3	131.5	144.6
Real compensation per hour	50.4	59.6	69.4	80.0	90.8	95.9	96.3	98.8	100.0	100.7	99.6	96.7	96.3
Unit labor cost	39.8	45.2	52.1	53.3	67.6	84.2	90.2	94.8	100.0	108.6	119.9	132.4	144.0
Unit nonlabor payments	43.5	47.8	50.8	57.8	63.4	78.9	90.7	94.4	100.0	105.1	110.9	118.3	130.6
Implicit price deflator	41.0	46.1	51.7	54.8	66.2	82.4	90.4	94.7	100.0	107.4	116.9	127.6	139.4
Nonfarm business sector:													
Output per hour of all persons	56.2	62.7	68.2	80.4	86.7	93.1	95.0	98.1	100.0	99.8	99.1	98.8	99.7
Compensation per hour	21.8	28.3	35.6	42.8	58.6	78.4	86.0	93.0	100.0	108.5	119.0	130.8	143.9
Real compensation per hour	55.0	63.9	73.0	82.2	91.5	96.4	96.8	99.0	100.0	100.7	99.3	96.2	95.9
Unit labor cost	38.8	45.1	52.3	53.2	67.6	84.3	90.5	94.8	100.0	108.7	120.0	132.4	144.3
Unit nonlabor payments	42.8	47.9	50.5	58.2	64.0	76.1	88.9	94.0	100.0	103.6	108.5	117.6	130.4
Implicit price deflator	40.2	46.0	51.7	54.8	66.4	81.6	89.9	94.5	100.0	107.0	116.2	127.4	138.7
Nonfinancial corporations:													
Output per hour of all employees	(1)	(1)	66.3	79.9	85.4	91.3	94.4	97.4	100.0	100.4	100.4	101.0	103.5
Compensation per hour	(1)	(1)	36.3	43.0	58.3	77.6	85.5	92.5	100.0	108.2	118.7	130.7	143.9
Real compensation per hour	(1)	(1)	74.2	82.6	91.0	95.4	96.3	98.5	100.0	100.5	99.1	96.2	95.9
Unit labor cost	(1)	(1)	54.7	53.8	68.3	85.1	90.6	95.0	100.0	107.8	118.2	129.4	139.0
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	75.7	90.9	95.0	100.0	103.8	108.3	117.3	132.3
Implicit price deflator	(1)	(1)	54.7	58.2	66.5	81.8	90.7	95.0	100.0	106.4	114.8	125.2	136.7
Manufacturing:													
Output per hour of all persons	49.5	56.5	60.1	74.6	79.2	90.9	93.5	97.7	100.0	100.9	102.0	101.7	104.0
Compensation per hour	21.5	28.8	36.7	42.9	57.6	76.4	85.5	92.4	100.0	108.2	118.8	131.6	146.2
Real compensation per hour	54.1	65.2	75.1	82.3	89.9	93.9	96.3	98.3	100.0	100.5	99.2	96.8	97.4
Unit labor cost	43.4	51.0	61.1	57.4	72.7	84.1	91.4	94.6	100.0	107.3	116.5	129.4	140.6
Unit nonlabor payments	55.1	58.4	62.0	70.3	66.0	70.4	88.5	95.1	100.0	104.7	108.7	109.7	122.6
Implicit price deflator	46.8	53.4	61.3	61.2	70.7	80.1	90.6	94.7	100.0	106.5	113.4	123.4	135.4

[1] Not available.

29. Annual changes in productivity, hourly compensation, unit costs, and prices, 1971-81

Item	Year											Annual rate of change	
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1950-81	1960-81
Private business sector:													
Output per hour of all persons	3.6	3.5	2.7	-2.3	2.3	3.3	2.1	-0.2	-0.3	-0.2	1.1	2.4	2.1
Compensation per hour	6.6	6.5	8.0	9.4	9.6	8.6	7.7	8.4	10.1	10.2	10.0	6.2	7.2
Real compensation per hour	2.2	3.1	1.7	-1.4	0.4	2.7	1.2	0.7	-1.1	-2.9	-0.3	2.3	1.7
Unit labor cost	2.9	2.9	5.2	11.9	7.2	5.1	5.5	8.6	10.4	10.4	8.8	3.6	5.0
Unit nonlabor payments	7.6	4.5	5.9	4.4	15.0	4.1	5.9	5.1	5.5	6.8	10.4	3.3	4.5
Implicit price deflator	4.4	3.4	5.4	9.4	9.7	4.7	5.6	7.4	8.8	9.2	9.3	3.5	4.9
Nonfarm business sector:													
Output per hour of all persons	3.3	3.7	2.5	-2.4	2.1	3.2	2.0	-0.2	-0.7	-0.3	0.9	2.1	1.8
Compensation per hour	6.6	6.7	7.6	9.4	9.6	8.1	7.6	8.5	9.7	9.9	10.0	5.9	7.0
Real compensation per hour	2.2	3.3	1.3	-1.4	0.4	2.2	1.0	0.7	-1.4	-3.2	-0.3	2.0	1.5
Unit labor cost	3.1	2.8	4.9	12.1	7.4	4.7	5.5	8.7	10.4	10.3	9.0	3.7	5.0
Unit nonlabor payments	7.4	3.2	1.3	5.9	16.7	5.7	6.4	3.6	4.8	6.4	10.9	3.3	4.4
Implicit price deflator	4.5	3.0	3.7	10.1	10.3	5.1	5.8	7.0	8.8	8.7	9.6	3.6	4.8
Nonfinancial corporations:													
Output per hour of all employees	4.8	3.0	2.6	-3.4	3.4	3.2	2.7	0.4	0.0	0.6	2.4	(1)	2.0
Compensation per hour	6.5	5.9	7.7	9.7	10.1	8.2	8.1	8.2	9.7	10.1	10.0	(1)	6.8
Real compensation per hour	2.1	2.5	1.4	-1.1	0.9	2.3	1.5	0.5	-1.4	-3.0	-0.3	(1)	1.4
Unit labor cost	1.6	2.8	4.9	13.6	6.5	4.9	5.3	7.8	9.7	9.5	7.4	(1)	4.8
Unit nonlabor payments	7.4	2.7	1.5	7.1	20.1	4.6	5.2	3.8	4.4	8.3	12.8	(1)	4.0
Implicit price deflator	3.5	2.8	3.8	11.4	10.9	4.8	5.2	6.4	7.9	9.1	9.2	(1)	4.5
Manufacturing:													
Output per hour of all persons	6.1	5.0	r5.4	-2.4	2.9	4.4	2.4	0.9	1.1	-0.3	r2.2	2.8	2.6
Compensation per hour	6.1	5.4	7.2	10.6	11.9	8.0	8.3	8.2	9.8	10.7	11.1	5.8	6.8
Real compensation per hour	1.8	2.0	0.9	-0.3	2.5	2.1	1.7	0.5	-1.3	-2.5	0.7	2.0	1.4
Unit labor cost	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.3	8.6	11.0	8.7	3.1	4.1
Unit nonlabor payments	11.2	0.8	-3.3	-1.8	25.0	7.4	5.2	4.7	0.9	2.9	12.7	r2.3	r3.0
Implicit price deflator	3.1	0.5	0.3	9.0	13.1	4.6	5.6	6.5	6.4	8.8	8.7	r2.8	r3.8

[1] Not available.

r = revised.

30. Quarterly indexes of productivity, hourly compensation, unit costs, and prices, seasonally adjusted

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1979		1980				1981				1982
	1980	1981	III	IV	I	II	III	IV	I	II	III	IV	I
Private business sector:													
Output per hour of all persons	99.3	100.4	99.4	99.1	99.5	99.1	99.4	99.1	100.3	101.2	100.9	99.2	98.9
Compensation per hour	131.5	144.6	120.7	123.2	126.4	130.1	133.1	135.9	138.8	143.3	146.5	148.5	r151.2
Real compensation per hour	96.7	96.3	99.2	98.0	96.7	96.6	96.9	96.0	96.1	96.9	96.3	95.8	r96.8
Unit labor cost	132.4	144.0	121.4	124.3	127.0	131.3	133.9	137.1	138.4	141.6	145.2	149.7	r152.8
Unit nonlabor payments	118.3	130.6	111.5	112.2	115.2	116.0	119.7	122.7	127.6	129.3	132.4	132.6	r129.2
Implicit price deflator	127.6	139.4	118.1	120.2	123.0	126.1	129.1	132.2	136.4	137.5	140.9	143.9	144.9
Nonfarm business sector:													
Output per hour of all persons	98.8	99.7	98.9	98.8	98.9	98.2	99.0	99.0	100.0	100.4	99.9	98.2	r98.3
Compensation per hour	130.8	143.9	120.2	123.0	126.0	129.4	132.3	135.4	138.2	142.4	145.7	147.9	r150.8
Real compensation per hour	96.2	95.9	98.8	97.8	96.4	96.0	96.3	95.7	95.7	96.3	95.8	95.4	r96.5
Unit labor cost	132.4	144.3	121.5	124.4	127.4	131.8	133.6	136.8	138.1	141.9	145.8	150.7	r153.3
Unit nonlabor payments	117.6	130.4	109.2	110.1	113.9	115.1	119.2	122.0	127.8	128.7	132.2	132.6	r129.7
Implicit price deflator	127.4	139.7	117.4	118.7	122.8	126.3	128.8	131.9	135.3	137.5	141.2	144.7	r145.4
Nonfinancial corporations:													
Output per hour of all employees	101.0	103.5	100.5	99.9	100.2	100.1	101.8	101.8	103.4	104.0	103.8	102.4	p102.3
Compensation per hour	130.7	143.8	120.1	122.7	125.7	129.3	132.5	135.5	139.3	142.4	145.5	148.0	p151.1
Real compensation per hour	96.2	95.9	98.7	97.5	96.2	95.9	96.5	95.7	r95.8	96.3	95.7	r95.5	p96.7
Total unit costs	129.7	140.8	118.2	121.3	124.2	129.2	131.1	134.1	136.0	138.7	142.2	147.0	p150.0
Unit labor cost	129.4	139.0	119.5	122.8	125.4	129.1	130.2	133.1	134.7	137.0	140.2	144.6	p147.7
Unit nonlabor costs	130.2	146.1	114.6	117.2	120.9	129.3	133.8	138.9	138.5	143.6	147.7	150.8	p156.3
Unit profits	90.2	103.6	97.5	92.2	95.5	83.4	89.1	92.4	106.8	102.8	106.7	96.8	p90.7
Implicit price deflator	125.2	136.7	115.9	118.1	121.0	124.1	126.4	129.5	132.7	134.7	138.2	141.4	p142.2
Manufacturing:													
Output per hour of all persons	101.7	104.0	102.0	102.1	102.1	100.8	100.7	103.1	r103.9	r104.8	105.0	102.0	r100.7
Compensation per hour	131.6	146.2	119.8	122.3	125.4	130.0	133.9	137.3	141.1	144.8	148.0	150.8	154.7
Real compensation per hour	96.0	97.4	98.5	97.2	96.0	96.5	97.5	97.0	97.1	97.9	97.3	97.3	98.0
Unit labor cost	129.4	140.6	117.5	119.8	122.8	129.0	133.0	133.2	r135.8	r138.2	141.0	147.8	r153.5

r = revised.

31. Percent change from preceding quarter and year in productivity, hourly compensation, unit costs, and prices, seasonally adjusted at annual rate

[1977 = 100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	III 1980 to IV 1980	IV 1980 to I 1981	I 1981 to II 1981	II 1981 to III 1981	III 1981 to IV 1981	IV 1981 to I 1982	IV 1979 to IV 1980	I 1980 to I 1981	II 1980 to II 1981	III 1980 to III 1981	IV 1980 to IV 1981	I 1981 to I 1982
Private business sector:												
Output per hour of all persons	−1.1	4.7	3.5	−1.1	^{r}−6.6	^{r}−0.9	0.0	0.8	2.1	1.5	0.0	−1.4
Compensation per hour	8.6	11.9	10.4	9.3	5.5	^{r}7.8	10.3	10.6	10.1	10.1	8.3	^{r}8.2
Real compensation per hour	−3.8	0.5	3.2	−2.3	−2.1	^{r}4.2	−2.0	−0.6	0.3	−0.6	−0.2	^{r}0.7
Unit labor costs	9.8	6.9	6.6	10.6	^{r}13.0	8.6	10.3	9.7	7.8	8.5	^{r}9.3	^{r}9.7
Unit nonlabor payments	10.2	17.1	5.3	10.1	^{r}0.4	−8.7	9.3	10.8	11.5	10.6	8.1	^{r}1.3
Implicit price deflator	9.9	10.0	6.2	10.4	^{r}8.9	2.8	10.0	10.1	9.0	9.1	8.9	7.0
Nonfarm business sector:												
Output per hour of all persons	−0.2	4.4	1.4	−1.7	^{r}−6.9	^{r}0.5	0.2	1.2	2.3	0.9	−0.8	^{r}−1.7
Compensation per hour	9.8	11.7	9.6	9.5	^{r}8.3	^{r}7.9	10.1	10.5	10.0	10.2	9.3	^{r}8.3
Real compensation per hour	−2.7	0.3	2.5	−2.2	^{r}−1.4	^{r}4.5	−2.2	−0.7	0.3	−0.6	−0.2	^{r}0.8
Unit labor costs	10.1	7.0	8.1	11.5	^{r}14.1	^{r}7.3	9.9	9.2	7.6	9.2	10.1	^{r}10.2
Unit nonlabor payments	9.9	20.2	3.0	11.3	^{r}−1.8	^{r}−9.0	10.8	12.2	11.8	10.9	8.8	^{r}1.5
Implicit price deflator	10.0	11.0	6.5	11.4	^{r}10.1	^{r}2.1	10.2	10.1	8.9	9.7	9.7	7.5
Nonfinancial corporations:												
Output per hour of all employees	0.0	6.6	2.2	−0.5	−5.5	^{p}−0.3	1.9	3.2	3.8	2.9	0.6	^{p}−1.1
Compensation per hour	9.4	11.7	9.3	9.1	8.9	^{p}8.6	10.4	10.8	10.1	9.9	9.2	^{p}8.5
Real compensation per hour	−3.1	0.3	2.1	−2.5	0.8	^{p}5.2	−1.9	−0.4	0.4	−0.8	−0.3	^{p}0.9
Total unit costs	9.4	5.6	8.4	10.3	14.4	^{p}8.3	10.5	9.5	7.4	8.4	9.6	^{p}10.3
Unit labor costs	9.4	4.8	7.0	9.7	13.2	^{p}8.9	8.4	7.4	6.1	7.7	8.6	^{p}9.7
Unit nonlabor costs	9.5	7.9	12.3	11.8	17.6	^{p}6.7	16.8	15.4	11.1	10.4	12.3	^{p}12.0
Unit profits	15.7	77.9	−13.9	15.7	−32.6	^{p}51.4	0.3	11.8	23.3	19.7	4.5	^{p}−24.4
Implicit price deflator	9.9	10.4	6.2	10.7	9.6	^{p}2.4	9.6	9.7	8.6	9.3	9.2	^{p}7.2
Manufacturing:												
Output per hour of all persons	^{r}9.8	^{r}3.1	^{r}3.5	^{r}0.9	^{r}−11.0	^{r}−4.9	1.0	^{r}1.8	^{r}4.0	^{r}4.3	−1.1	−3.0
Compensation per hour	10.5	11.6	10.8	9.3	7.6	^{r}10.7	12.3	12.5	11.4	10.5	9.8	9.6
Real compensation per hour	−2.2	−0.2	3.5	−2.4	−0.2	^{r}7.2	−0.2	1.1	1.5	−0.2	0.3	2.0
Unit labor costs	0.6	^{r}8.2	^{r}7.0	^{r}8.3	^{r}20.9	^{r}16.5	11.2	^{r}10.6	^{r}7.1	6.0	^{r}11.0	13.0

r = revised.

WAGE AND COMPENSATION DATA

Data for the Employment Cost Index are reported to the Bureau of Labor Statistics by a sample of 2,000 private nonfarm establishments and 750 State and local government units selected to represent total employment in those sectors. On average, each reporting unit provides wage and compensation information on five well-specified occupations.

Data on negotiated wage and benefit changes are obtained from contracts on file at the Bureau, direct contact with the parties, and secondary sources.

Definitions

The **Employment Cost Index** (ECI) is a quarterly measure of the average change in the cost of employing labor. The rate of total compensation, which comprises wages, salaries, and employer costs for employee benefits, is collected for workers performing specified tasks. Employment in each occupation is held constant over time for all series produced in the ECI, except those by region, bargaining status, and area. As a consequence, only changes in compensation are measured. Industry and occupational employment data from the 1970 Census of Population are used in deriving constant weights for the ECI. While holding total industry and occupational employment fixed, in the estimation of indexes by region, bargaining status, and area, the employment in those measures is allowed to vary over time in accord with changes in the sample. The rate of change (in percent) is available for wages and salaries, as well as for total compensation. Data are collected for the pay period including the 12th day of the survey months of March, June, September, and December. The statistics are neither annualized nor adjusted for seasonal influence.

Wages and salaries consist of earnings before payroll deductions, excluding premium pay for overtime, work on weekends and holidays, and shift differentials. Production bonuses, incentive earnings, commissions, and cost-of-living adjustments are included; nonproduction bonuses are included with other supplemental pay items in the benefits category; and payments-in-kind, free room and board, and tips are excluded. *Benefits* include supplemental pay, insurance, retirement and savings plans, and hours-related and legally required benefits.

Data on negotiated wage changes apply to private nonfarm industry collective bargaining agreements covering 1,000 workers or more. Data on compensation changes apply only to those agreements covering 5,000 workers or more. *First-year* wage or compensation changes refer to average negotiated changes for workers covered by settlements reached in the period and implemented within the first 12 months after the effective date of the agreement. *Changes over the life of the agreement* refer to all adjustments specified in the contract, expressed as an average annual rate. These measures exclude wage changes that may occur under cost-of-living adjustment clauses, that are triggered by movements in the Consumer Price Index. *Wage-rate changes* are expressed as a percent of straight-time hourly earnings; *compensation changes* are expressed as a percent of total wages and benefits.

Effective wage adjustments reflect all negotiated changes implemented in the reference period, regardless of the settlement date. They include changes from settlements reached during the period, changes deferred from contracts negotiated in an earlier period, and cost-of-living adjustments. The data also reflect contracts providing for no wage adjustment in the period. Effective adjustments and each of their components are prorated over all workers in bargaining units with at least 1,000 workers.

Notes on the data

The Employment Cost Index data series began in the fourth quarter of 1975, with the quarterly percent change in wages and salaries in the private nonfarm sector. Data on employer costs for employee benefits were included in 1980, to produce a measure of the percent change in employers' cost for employees' total compensation. State and local government units were added to the ECI coverage in 1981, providing a measure of total compensation change in the civilian nonfarm economy.

Data for the broad white-collar, blue-collar, and service worker groups, and the manufacturing, nonmanufacturing, and service industry groups are presented at the ECI. Additional occupation and industry detail are provided for the wages and salaries component of total compensation in the private nonfarm sector. For State and local government units, additional industry detail is shown for both total compensation and its wages and salaries component.

Historical indexes (June 1981 = 100) of the quarterly rates of changes presented in the ECI are also available.

For a more detailed discussion of the ECI, see chapter 25, "The Employment Cost Index," of the BLS *Handbook of Methods* (Bulletin 1910), and the *Monthly Labor Review* articles: "Employment Cost Index: a measure of change in the 'price of labor,'" July 1975; "How benefits will be incorporated into the Employment Cost Index," January 1978; and "The Employment Cost Index: recent trends and expansion," May 1982.

Additional data for the ECI and other measures of wage and compensation changes appear in *Current Wage Developments*, a monthly periodical of the Bureau.

32. Employment Cost Index, total compensation

[June 1981 = 100]

Series	1980				1981				1982	Percent change	
										3 months ended	12 months ended
	March	June	Sept.	Dec.	March	June	Sept.	Dec.	March	March 1982	
Civilian nonfarm workers[1]	—	—	—	—	—	100.0	102.6	104.5	106.3	1.7	—
Workers, by occupational group											
White-collar workers	—	—	—	—	—	100.0	102.7	104.9	106.5	1.5	—
Blue-collar workers	—	—	—	—	—	100.0	102.3	104.1	105.7	1.5	—
Service workers	—	—	—	—	—	100.0	102.8	104.2	107.2	2.9	—
Workers, by industry division											
Manufacturing	—	—	—	—	—	100.0	102.1	104.0	106.0	1.9	—
Nonmanufacturing	—	—	—	—	—	100.0	102.8	104.8	106.4	1.5	—
Services	—	—	—	—	—	100.0	104.4	107.1	109.2	1.9	—
Public administration[2]	—	—	—	—	—	100.0	104.3	106.0	108.1	2.0	—
Private nonfarm workers	88.6	90.7	92.8	94.7	98.1	100.0	102.0	104.0	105.8	1.7	7.8
Workers, by occupational group											
White-collar workers	88.7	90.8	92.6	94.5	98.3	100.0	101.8	104.0	105.8	1.7	7.6
Blue-collar workers	88.3	90.5	93.0	94.9	97.8	100.0	102.2	104.0	105.6	1.5	8.0
Service workers	89.9	90.8	92.7	94.3	99.3	100.0	101.9	103.1	106.7	3.5	7.5
Workers, by industry division											
Manufacturing	88.7	90.5	92.6	94.7	98.0	100.0	102.1	104.0	106.0	1.9	8.2
Nonmanufacturing	88.6	90.8	92.9	94.7	98.2	100.0	102.0	103.9	105.7	1.7	7.8
State and local government workers	—	—	—	—	—	100.0	105.3	107.4	108.8	1.3	—
Workers, by occupational group											
White-collar workers	—	—	—	—	—	100.0	105.7	107.8	109.1	1.2	—
Blue-collar workers	—	—	—	—	—	100.0	104.2	105.9	108.2	2.2	—
Workers, by industry division											
Services	—	—	—	—	—	100.0	105.8	107.9	109.0	1.0	—
Schools	—	—	—	—	—	100.0	106.0	107.9	108.9	.9	—
Elementary and secondary	—	—	—	—	—	100.0	106.3	108.3	109.3	.9	—
Hospitals and other services[3]	—	—	—	—	—	100.0	105.0	107.8	109.5	1.6	—
Public administration[2]	—	—	—	—	—	100.0	104.3	106.0	108.1	2.0	—

[1] Excludes private household and Federal workers.

[2] Consists of legislative, judicial, administrative, and regulatory activities.

[3] Includes, for example, library, social, and health services.

NOTE: Dashes indicate data not available.

33. Employment Cost Index, wages and salaries, by bargaining status, region, and area size

[June 1981 = 100]

Series	March 1981	December 1981	March 1982	Percent change: 3 months ended March 1981	December 1981	March 1982	12 months ended March 1981	December 1981	March 1982
COMPENSATION									
Workers, by bargaining status[1]									
Union	97.6	104.8	106.5	3.1	2.2	1.6	11.8	10.7	9.1
Manufacturing	—	104.6	106.3	—	2.2	1.6	—	—	—
Nonmanufacturing	—	105.0	106.8	—	2.2	1.7	—	—	—
Nonunion	98.4	103.5	105.3	4.0	1.8	1.7	10.2	9.4	7.0
Manufacturing	—	103.5	105.7	—	1.7	2.1	—	—	—
Nonmanufacturing	—	103.5	105.2	—	1.6	1.6	—	—	—
Workers, by area size[1]									
Metropolitan areas	98.1	104.1	105.7	3.8	2.0	1.5	10.9	9.9	7.7
Other areas	98.1	103.2	106.2	4.1	1.4	2.9	10.4	9.6	8.3
WAGES AND SALARIES									
Workers, by bargaining status[1]									
Union	97.4	105.0	106.5	1.7	2.2	1.4	10.2	9.6	9.3
Manufacturing	97.7	104.7	105.9	1.7	2.0	1.1	10.1	8.9	8.4
Nonmanufacturing	97.1	105.2	107.0	1.7	2.3	1.7	10.4	10.2	10.2
Nonunion	98.2	103.2	105.6	3.3	1.6	2.3	8.9	8.5	7.5
Manufacturing	97.9	103.3	105.8	2.7	1.8	2.5	7.8	8.3	8.2
Nonmanufacturing	98.3	103.2	105.5	3.5	1.6	2.2	9.4	8.6	7.3
Workers, by region[1]									
Northeast	98.3	104.4	106.1	2.4	2.7	1.6	8.5	8.8	7.9
South	98.0	102.8	105.7	3.3	.9	2.8	9.3	8.3	7.9
North Central	98.1	103.3	104.7	3.0	1.7	1.4	9.4	8.4	6.7
West	97.9	105.1	107.9	2.7	1.8	2.7	10.9	10.3	10.2
Workers, by area size[1]									
Metropolitan areas	97.9	104.0	105.9	2.6	1.9	1.8	9.5	9.0	8.2
Other areas	98.3	103.1	106.0	3.3	1.3	2.8	9.1	8.4	7.8

[1] The indexes are calculated differently from those for the occupation and industry groups. For a detailed description of the index calculation, see BLS *Handbook of Methods*, Bulletin 1910.

34. Employment Cost Index, wages and salaries, by occupation and industry group

[June 1981 = 100]

Series	1980				1981				1982	Percent change	
										3 months ended	12 months ended
	March	June	Sept.	Dec.	March	June	Sept.	Dec.	March	March 1982	
Civilian nonfarm workers[1]	—	—	—	—	—	100.0	102.5	104.4	106.3	1.8	—
Workers, by occupational group											
White-collar workers	—	—	—	—	—	100.0	102.6	104.7	106.7	1.9	—
Blue-collar workers	—	—	—	—	—	100.0	102.4	104.0	105.5	1.4	—
Service workers	—	—	—	—	—	100.0	102.5	103.6	106.8	3.1	—
Workers, by industry division											
Manufacturing	—	—	—	—	—	100.0	102.1	104.0	105.9	1.8	—
Nonmanufacturing	—	—	—	—	—	100.0	102.7	104.5	106.5	1.9	—
Services	—	—	—	—	—	100.0	104.4	106.6	108.6	1.9	—
Public administration[2]	—	—	—	—	—	100.0	103.8	105.5	107.5	1.9	—
All private nonfarm workers[3]	89.6	91.5	93.5	95.4	98.0	100.0	102.0	103.8	105.9	2.0	8.1
Workers, by occupational group											
White-collar workers	89.7	91.4	93.3	95.2	98.1	100.0	101.8	103.9	106.2	2.2	8.3
Professional and technical workers	89.2	90.8	93.2	95.3	98.2	100.0	103.3	105.5	108.0	2.4	10.0
Managers and administrators	90.6	92.0	93.5	94.7	98.6	100.0	101.6	102.8	105.8	2.9	7.3
Salesworkers	88.5	90.7	92.2	94.8	96.2	100.0	98.0	101.9	102.2	.3	6.2
Clerical workers	90.3	91.9	93.8	95.7	98.6	100.0	102.7	104.2	107.0	2.7	8.5
Blue-collar workers	89.3	91.6	93.8	95.7	97.7	100.0	102.3	103.9	105.4	1.4	7.9
Craft and kindred workers	89.3	91.4	94.0	96.1	97.8	100.0	102.9	104.3	106.2	1.8	8.6
Operatives, except transport	89.4	91.5	93.6	95.5	97.8	100.0	102.1	104.1	105.4	1.2	7.8
Transport equipment operatives	89.1	92.2	93.5	95.3	98.8	100.0	101.0	102.7	103.2	.5	6.6
Nonfarm laborers	89.6	91.8	93.9	95.7	97.5	100.0	101.5	103.3	104.1	.8	6.8
Service workers	90.8	91.9	93.4	94.8	99.2	100.0	101.8	102.7	106.7	3.9	7.6
Workers, by industry division											
Manufacturing	89.9	91.8	93.6	95.7	97.9	100.0	102.1	104.0	105.9	1.8	8.2
Durables	89.3	91.2	93.5	95.7	97.9	100.0	102.1	104.5	106.3	1.7	8.6
Nondurables	91.0	92.7	93.8	95.7	97.8	100.0	102.0	103.1	105.3	2.1	7.7
Nonmanufacturing	89.5	91.3	93.4	95.2	98.1	100.0	102.0	103.8	105.9	2.0	8.0
Construction	89.3	91.9	94.5	95.9	97.6	100.0	103.0	104.3	105.9	1.5	8.5
Transportation and public utilities	88.2	90.2	93.1	95.6	97.7	100.0	102.0	103.6	105.7	2.0	8.2
Wholesale and retail trade	90.5	92.2	93.6	95.1	98.2	100.0	101.3	102.3	103.9	1.6	5.8
Wholesale trade	89.7	92.1	93.0	95.9	98.5	100.0	102.0	103.4	106.3	2.8	7.9
Retail trade	90.8	92.2	93.8	94.8	98.1	100.0	101.0	101.9	103.0	1.1	5.0
Finance, insurance, and real estate	87.1	89.4	91.2	93.1	95.7	100.0	98.3	102.3	103.7	1.4	8.4
Services	90.5	91.9	94.2	95.7	99.6	100.0	103.6	105.8	106.8	2.8	9.2
State and local governments	—	—	—	—	—	100.0	105.0	107.0	108.2	1.1	—
Workers, by occupational group											
White-collar workers	—	—	—	—	—	100.0	105.4	107.5	108.5	.9	—
Blue-collar workers	—	—	—	—	—	100.0	103.9	105.5	107.5	1.9	—
Workers, by industry division		—	—	—							
Services	—				—	100.0	105.5	107.6	108.4	.7	—
Schools	—	—	—	—	—	100.0	105.7	107.7	108.3	.6	—
Elementary and secondary	—	—	—	—	—	100.0	106.0	107.9	108.7	.7	—
Hospitals and other services[4]	—	—	—	—	—	100.0	104.6	107.3	108.8	1.4	—
Public administration[2]	—	—	—	—	—	100.0	103.3	105.5	107.5	1.9	—

[1] Excludes private household and Federal workers.

[2] Consists of legislative, judicial, administrative, and regulatory activities.

[3] Excludes private household workers.

[4] Includes, for example, library, social, and health services.

NOTE: Dashes indicate data not available.

35. Wage and compensation change, major collective bargaining settlements, 1977 to date

[In percent]

Measure	Annual average				Quarterly average								
					1980				1981				1982
	1978	1979	1980	1981	I	II	III	IV	I	II	III	IV	I^p
Total compensation changes covering 5,000 workers or more, all industries:													
First year of contract	8.3	9.0	10.4	10.2	8.8	10.2	11.4	8.5	7.7	11.6	10.5	11.0	1.8
Annual rate over life of contract	6.3	6.6	7.1	8.3	6.7	7.4	7.2	6.1	7.2	10.6	8.1	5.8	1.1
Wage rate changes covering at least 1,000 workers, all industries:													
First year of contract	7.6	7.4	9.5	9.8	8.2	9.1	10.5	8.3	7.1	11.8	10.8	9.0	2.2
Annual rate over life of contract	6.4	6.0	7.1	7.9	6.5	7.3	7.4	6.5	6.2	9.7	8.7	5.7	2.0
Manufacturing:													
First year of contract	8.3	6.9	7.4	7.2	7.2	6.7	8.4	7.8	6.4	8.2	9.0	6.6	1.9
Annual rate over life of contract	6.6	5.4	5.4	6.1	5.7	5.1	5.6	5.8	5.5	6.7	7.5	5.4	1.8
Nonmanufacturing (excluding construction):													
First year of contract	8.0	7.6	9.5	9.8	9.4	10.3	9.5	9.2	8.0	11.8	8.6	9.6	1.8
Annual rate over life of contract	6.5	6.2	6.6	7.3	7.6	8.5	5.9	6.8	7.3	9.1	7.2	5.6	1.4
Construction:													
First year of contract	6.5	8.8	13.6	13.5	10.8	12.2	15.4	14.3	11.4	12.9	16.4	11.4	9.3
Annual rate over life of contract	6.2	8.3	11.5	11.3	9.1	10.4	13.0	12.0	10.3	11.1	12.4	11.7	8.9

36. Effective wage adjustments in collective bargaining units covering 1,000 workers or more, 1977 to date

Measure	Year					Year and quarter								
						1980				1981				1982^p
	1977	1978	1979	1980	1981	I	II	III	IV	I	II	III	IV	I
Average percent adjustment (including no change):														
All industries	8.0	8.2	9.1	9.9	9.5	1.6	3.3	3.5	1.3	1.7	3.2	3.3	1.5	.9
Manufacturing	8.4	8.6	9.6	10.2	9.4	2.0	3.4	2.9	1.7	2.3	2.4	3.1	1.9	.8
Nonmanufacturing	7.6	7.9	8.8	9.7	9.5	1.3	3.2	4.0	1.1	1.2	3.8	3.4	1.1	1.0
From settlements reached in period	3.0	2.0	3.0	3.6	2.5	.4	1.0	1.7	.5	.4	1.1	.5	.4	.1
Deferred from settlements reached in earlier period	3.2	3.7	3.0	3.5	3.8	.5	1.4	1.2	.3	.5	1.4	1.5	.4	.5
From cost-of-living clauses	1.7	2.4	3.1	2.8	3.2	.7	.8	.7	.6	.7	.7	1.2	.6	.2
Total number of workers receiving wage change (in thousands)[1]	—	—	—	—	8,648	—	—	—	—	3,855	4,701	4,384	3,225	2,713
From settlements reached in period	—	—	—	—	2,270	—	—	—	—	579	909	540	804	153
Deferred from settlements reached in earlier period	—	—	—	—	6,267	—	—	—	—	886	2,055	3,023	882	1,033
From cost-of-living clauses	—	—	—	—	4,583	—	—	—	—	2,639	2,689	2,804	2,170	1,750
Number of workers receiving no adjustments (in thousands)	—	—	—	—	145	—	—	—	—	4,937	4,092	4,428	5,568	6,176

[1] The total number of workers who received adjustments does not equal the sum of workers that received each type of adjustment, because some workers received more than one type of adjustment during the period.

WORK STOPPAGE DATA

Work stoppages include all known strikes or lockouts involving 1,000 workers or more and lasting a full shift or longer. Data are based largely on newspaper accounts and cover all workers idle one shift or more in establishments directly involved in a stoppage. They do not measure the indirect or secondary effect on other establishments whose employees are idle owing to material or service shortages.

Estimates of days idle as a percent of estimated working time measures only the impact of larger strikes (1,000 workers or more). Formerly, these estimates measured the impact of strikes involving 6 workers or more; that is, the impact of virtually *all* strikes. Due to budget stringencies, collection of data on strikes involving 6 workers or more was discontinued with the December 1981 data.

37. Work stoppages involving 1,000 workers or more, 1947 to date

Month and year	Number of stoppages: Beginning in month or year	Number of stoppages: In effect during month or year	Workers involved: Beginning in month or year (in thousands)	Workers involved: In effect during month (in thousands)	Days idle: Number (in thousands)	Days idle: Percent of estimated working time
1947	270	...	1,629	...	25,720	
1948	245	...	1,435	...	26,127	.22
1949	262	...	2,537	...	43,420	.38
1950	424	...	1,698	...	30,390	.26
1951	415	...	1,462	...	15,070	.12
1952	470	...	2,746	...	48,820	.38
1953	437	...	1,623	...	18,130	.14
1954	265	...	1,075	...	16,630	.13
1955	363	...	2,055	...	21,180	.16
1956	287	...	1,370	...	26,840	.20
1957	279	...	887	...	10,340	.07
1958	332	...	1,587	...	17,900	.13
1959	245	...	1,381	...	60,850	.43
1960	222	...	896	...	13,260	.09
1961	195	...	1,031	...	10,140	.07
1962	211	...	793	...	11,760	.08
1963	181	...	512	...	10,020	.07
1964	246	...	1,183	...	16,220	.11
1965	268	...	999	...	15,140	.10
1966	321	...	1,300	...	16,000	.10
1967	381	...	2,192	...	31,320	.18
1968	392	...	1,855	...	35,567	.20
1969	412	...	1,576	...	29,397	.16
1970	381	...	2,468	...	52,761	.29
1971	298	...	2,516	...	35,538	.19
1972	250	...	975	...	16,764	.09
1973	317	...	1,400	...	16,260	.08
1974	424	...	1,796	...	31,809	.16
1975	235	...	965	...	17,563	.09
1976	231	...	1,519	...	23,962	.12
1977	298	...	1,212	...	21,258	.10
1978	219	...	1,006	...	23,774	.11
1979	235	...	1,021	...	20,409	.09
1980	187	...	795	...	20,844	.09
1981	145	...	729	...	16,908	.07
1981: January	6	12	12.0	29.6	257.9	.01
February	7	10	10.7	20.9	118.5	.01
March	16	20	201.6	207.8	861.8	.04
April	17	27	48.0	223.5	4,085.2	.20
May	18	27	85.1	259.0	4,454.0	.24
1982^p: January	2	4	6.1	11.4	199.9	.01
February	2	6	2.5	13.9	236.9	.01
March	^{r}3	^{r}8	^{r}8.3	^{r}21.3	^{r}352.2	.02
April	8	^{r}15	34.7	^{r}54.3	^{r}478.3	.02
May	13	19	42.7	58.3	599.1	.03

r = revised.

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SALES PUBLICATIONS

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Area Wage Survey Bulletins

The annual series of 70 publications is available by subscription for $90 per year. Individual area bulletins also are available separately. The following were published in April:

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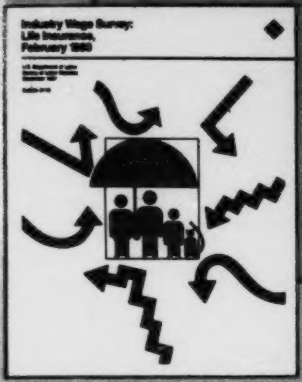
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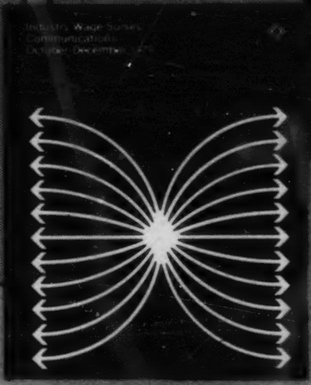
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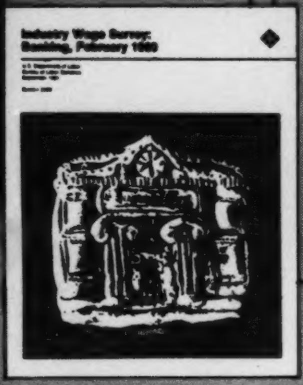
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MONTHLY LABOR REVIEW

U.S. Department of Labor
Bureau of Labor Statistics
August 1982

In this issue:
Employment and Unemployment in the first half.
Imports and U.S. Employment.

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Raymond J. Donovan, *Secretary*

BUREAU OF LABOR STATISTICS
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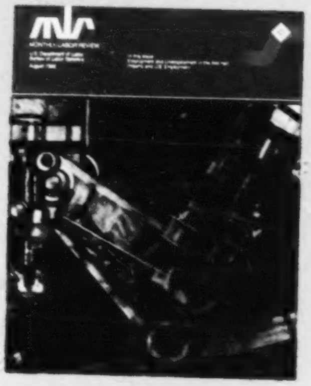

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Labor Month In Review

WORK EXPERIENCE. The Bureau of Labor Statistics published results of the latest survey on work experience of the population. The data are based on responses to special questions in the March 1982 *Current Population Survey,* conducted for BLS by the Census Bureau. The data show:

More extensive unemployment. The 23.4 million persons who encountered some unemployment in 1981 were 2 million more than in 1980, and represented 19.5 percent of all persons in the labor force for at least 1 week. This proportion was higher than the 18.1 percent in 1980, but below the 20.2-percent peak of 1975. For men and all blacks, however, the proportion with some unemployment during the year equaled or exceeded the previous highs.

Among men, the proportion with some unemployment during 1981 was 20.0 percent, the same as in 1975. Among women, the proportion was 19.0 percent, still below its 1975 peak of 20.5 percent. Men were not only more likely to become unemployed; they generally remained unemployed longer than women.

For blacks, the proportion experiencing joblessness in 1981—30.5 percent—was up from 28.0 percent in 1980 and even higher than the previous peak of 29.5 percent reached in 1975. By comparison, the proportion of whites with unemployment rose to 18.3 percent in 1981, up from 16.9 percent in 1980 but still down from 19.1 percent in 1975. For Hispanics, the rate remained largely unchanged over the year at 24 percent. Blacks were also unemployed longer than either whites or Hispanics. The median number of weeks of unemployment was 15.3 for blacks, 13.0 weeks for whites, and 14.5 weeks for Hispanics.

Of the 23.4 million persons who experienced some unemployment in 1981, 2.9 million held no job at all during the year—many because they left the labor force. Of the 20.5 million who found some work, the median duration of joblessness increased from 13.0 weeks in 1980 to 13.3 weeks in 1981. The proportion of unemployed workers with two or more periods of joblessness also increased in 1981 to 34 percent from 32 percent a year earlier.

A modest rise in employment. Employment continued to grow slowly in 1981. A total of 116.8 million persons 16 years of age and over worked all or part of the year, 1 million more than in 1980. Because population growth outpaced job growth, the proportion of the population working during the year edged downward for the third straight year to 68 percent.

For men, the proportion who worked continued a 15-year decline and—at 79.7 percent—reached its lowest level since the beginning of this series in 1948. For women, the proportion with employment was essentially unchanged and remained near the high of 58.0 percent reached in 1979. And the proportion of women working full time, year-round, continued to increase.

The proportion of blacks who worked during the year reached a new low of 60.7 percent. For black men, the proportion dropped to 68.6 percent, 4 percentage points lower than in 1978. The proportions of whites and Hispanics working during the year remained largely unchanged at 69 and 66 percent.

Lower real annual earnings. The median annual earnings of wage and salary workers employed at full-time jobs year-round rose to $20,593 for men and to $12,345 for women. For both groups, the 1981 median was about 9 percent higher than the median for the previous year. Thus, there was no change in the ratio of the average annual earnings of women to those of men, which remained at 60 percent.

After adjusting for inflation, the median annual earnings of men and women declined by about 1 percent relative to 1980, as the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) rose by 10.2 percent in 1981.

Annual earnings of black and Hispanic workers continued to be much lower than those of white workers. The median for white men employed at full-time jobs all year was $21,087, compared to $14,988 for black men and $14,953 for Hispanic men. For white women who usually worked full time, year-round, the median was $12,476, compared to $11,166 for black women and $10,725 for Hispanic women.

The work experience questions in the March survey refer, retroactively, to respondents' work status and earnings for the entire previous year. Because many persons enter and leave the labor force during the course of a year, the total numbers with employment and unemployment as determined through the work experience questions are much greater than the annual averages based on the monthly survey conducted during the year. For example, the number who reported that they experienced some unemployment during 1981 was 2.8 times greater than the annual average of the 1981 monthly figures.

Tables showing the survey results appear in the news release, USDL 82-255, available from the Inquiries and Correspondence Section, Bureau of Labor Statistics, Washington, D.C. 20212. Survey results will be discussed in greater detail in a forthcoming issue of the *Review.* ☐

The Nation's employment situation worsens in the first half of 1982

The continued economic slide pushed the U.S. unemployment rate to a postwar high in the second quarter; construction and durable goods industries were hardest hit

MARILLYN A. HEWSON AND MICHAEL A. URQUHART

The economy entered 1982 deeply mired in its eighth post-World War II recession, following an unusually brief and weak recovery. The employment situation of some worker groups, particularly blacks and teenagers, had simply not shown improvement from the 1980 recession. Labor market conditions, which had been deteriorating rapidly since mid-1981, worsened substantially in the fourth quarter and continued to weaken through the first quarter of 1982. Employment dropped sharply and unemployment soared to the highest level recorded in the postwar era. However, there was evidence of moderation by the end of the second quarter.

Persistently high interest rates, which aborted the recovery from the 1980 recession, were a major cause of the 1981–82 economic reversal. The interest-rate sensitive construction and automobile manufacturing industries have experienced an economic slump spanning the two recessions. By late 1981, the weakness had clearly spread to much of the rest of the economy, including the services sector. The deterioration in the labor market became more pervasive as slackening sales and growing inventories forced firms to sharply curtail new orders, cut back production, and lay off workers. Although labor market conditions appeared to be improving by late spring, recessionary forces clearly dominated the first half of 1982.

This article continues the *Monthly Labor Review* practice of examining the Nation's employment situation at mid-year. It traces developments in employment and unemployment during the current recession, concentrating particularly on the first 6 months of 1982.

Job cutbacks

The renewed deterioration in economic activity worsened in the final quarter of 1981 and continued to accelerate during early 1982. However, signs that the rapid contraction in economic activity was losing momentum were evident by late spring, as the rate of decline in nonfarm employment slowed significantly in the second quarter. By midyear, nonfarm payroll jobs had declined by 1.4 million from the July 1981 high of 91.4 million.

To put the current labor market situation into perspective, it is useful to assess and compare the severity and extent of recent job cutbacks with those of the past. Table 1 presents measures of the duration, depth, and diffusion of declines in nonfarm payroll employment (based on data from the BLS survey of establishments) during each of the seven complete postwar recessions plus the current period.[1] April 1982 was used as the month that nonfarm payroll employment reached its trough for the 1981–82 recessionary period. Of course, data for subsequent months may prove otherwise, but it is still useful analytically to compare the de-

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cline in nonfarm payroll employment as of this point in the recession with past downturns.

As the table illustrates, the length of the contraction in nonfarm employment for the 1981–82 recession was longer than the declines for the three previous postwar recessions, spanning 9 months. Moreover, the pervasiveness of the 1981–82 decline, as measured by the 186-industries diffusion index which covers all employment on private nonagricultural payrolls,[2] was greater than for the 1980 downturn. While the 1980 contraction had been largely confined to construction and automobile manufacturing, and their supplying industries, the 1981–82 downturn was visibly more widespread, with employment declines witnessed in virtually all of the goods-producing industries, as well as in a large number of the service-producing industries.

Despite the longer and more pervasive nature of the recent nonfarm payroll job losses, the relative employment decline—1.4 percent—matched that of the 1980 downturn. Thus, the job loss total for each of the last two recessions was less than those that occurred in the 1973–75 and earlier postwar recessions.

It has been argued that the continuing shift in jobs from the goods to services sector has moderated the effects of business contractions on employment in the U.S. economy.[3] That is, as the service-producing sector's share of nonfarm jobs increases, this, in turn, serves to cushion a slowdown in the economy as a whole, because employment in the service-producing sector has historically been less affected by economic contractions than in the goods sector. Business downturns typically reduce the services sector's rate of growth but do not usually result in overall employment declines in services. This phenomenon was observed once again in the 1981–82 recession. Employment continued to expand in the services sector during the downturn as it has for most of the postwar recessions, although at a much slower pace than the roughly 4-percent growth rate experienced in nonrecessionary periods.

Table 1. Measures of duration, depth, and diffusion in peak-to-trough changes in nonfarm payroll employment, selected periods, 1948–82

Peak to trough[1]	Duration (in months)	Depth[2] (in percent)	Diffusion[3] (in percent)	
			30 industries[4]	186 industries
Sept. 1948 to Oct. 1949 . .	13	−5.2	90	(5)
June 1953 to Aug. 1954 . .	14	−3.5	87	(5)
July 1957 to May 1958 . . .	10	−4.2	88	(5)
Apr. 1960 to Feb. 1961 . . .	10	−2.2	82	(5)
Mar. 1970 to Nov. 1970 . .	8	−1.5	77	(5)
Oct. 1974 to Apr. 1975 . . .	6	−2.9	86	88
Mar. 1980 to July 1980 . . .	4	−1.4	76	77
July 1981 to Apr. 1982[6] . .	9	−1.4	83	78

[1] Peak-to-trough dates in nonfarm payroll employment near the following National Bureau of Economic Research designated postwar recessionary periods: November 1948 to October 1949, July 1953 to May 1954, August 1957 to April 1958, April 1960 to February 1961, December 1969 to November 1970, November 1973 to March 1975, January 1980 to July 1980, July 1981 to –; the 1982 trough has not yet been designated by the National Bureau of Economic Research.

[2] Percent decline in employment level over the period.

[3] Percent of industries in which employment declined over a 6-month span, centered on the fourth month of the span: February 1949, March 1954, September 1957, August 1960, June 1970, January 1975, April 1980, and January 1982.

[4] Indexes of diffusion, 30 industries, 6-month span for April 1947 to May 1974 are published in John F. Early, "Introduction to Diffusion Indexes," *Employment and Earnings*, December 1974, p. 11, table 8. Indexes of diffusion for subsequent periods under study are for 29 industries due to the 1972 SIC revision which divided the industry category for Ordnance and accessories among the remaining manufacturing industries. These indexes were calculated specifically for this report.

[5] Data are not available.

[6] As of this writing, April was the month in which nonfarm payroll employment appeared to have reached its 1982 low.

The data in table 1 clearly show the moderation in recessionary employment cutbacks during the postwar period. In contrast to the employment effects of earlier recessions, job cutbacks during recent downturns have been generally shorter in duration and considerably less severe in magnitude. In fact, during the 1973–75 recession, which is generally regarded as the most severe postwar business downturn, the percentage decline in employment was significantly less than during postwar recessions prior to 1960, as well as noticeably shorter.

Although when examined as a separate entity the 1981–82 recession does not appear at this point to have resulted in employment declines any more severe than in previous downturns, it is worth noting two important factors which set it apart from other postwar recessions. The most significant atypical development was that this contraction was preceded by the shortest and weakest recovery in the postwar period, a recovery which halted before many industries had rebounded fully. As a result, some industries have experienced what may be regarded as a "double-dip" recession, a downturn more severe and spanning a much longer period than the cyclical decline for the economy in the aggregate. In fact, employment in some industries, such as primary metals and stone, clay, and glass, has fallen to levels below those experienced during the 1973–75 recession.

The second dominant feature was the failure of interest rates to recede as in previous postwar downturns. This caused a continued slump in the housing, automotive, and other credit-sensitive industries, and inhibited growth in all industries by reducing orders for suppliers, inflating inventory carrying costs, and dampening spending on consumer and capital goods.

As indicated above, the bulk of the employment declines in the first half of 1982 was centered in the goods-producing sector, notably in manufacturing and construction. (See table 2.) Continuing the losses begun in the second half of 1981, virtually every manufacturing industry registered some decline. The job losses took place largely in the more cyclically sensitive durable goods industries, where the job count fell by more than 900,000 between the second quarters of 1981 and 1982, principally the result of the depressed housing and automobile markets.

Housing demand both for new residential construction and for existing homes was kept low by high mort-

Table 2. Selected employment indicators, seasonally adjusted quarterly averages, 1981–82

[In thousands]

Selected categories	1981				1982	
	I	II	III	IV	I	II
Employed	100,125	100,784	100,654	100,043	99,554	99,740
Both sexes, 16 to 19 years	7,476	7,341	7,176	6,914	6,733	6,616
Men, 20 years and over	53,446	53,767	53,786	53,327	53,050	53,078
Women, 20 years and over	39,202	39,667	39,692	39,802	39,772	40,047
White	88,381	89,039	89,006	88,414	87,967	82,204
Black	9,387	9,419	9,308	9,304	9,259	9,167
Hispanic origin	5,277	5,336	5,349	5,431	5,298	5,163
White-collar workers	52,754	52,943	52,985	53,123	52,813	53,489
Blue-collar workers	31,211	31,673	31,486	30,660	30,309	29,855
Service workers	13,358	13,384	13,400	13,611	13,616	13,696
Farmworkers	2,748	2,761	2,741	2,744	2,771	2,671
Nonfarm payroll employment	90,945	91,172	91,360	90,954	90,408	90,081
Goods-producing industries	25,559	25,577	25,646	25,158	24,588	24,201
Mining	1,113	1,033	1,179	1,201	1,200	1,155
Construction	4,274	4,230	4,148	4,066	3,958	3,961
Manufacturing	20,172	20,314	20,319	19,892	19,430	19,085
Durable goods	12,120	12,228	12,226	11,895	11,562	11,322
Nondurable goods	8,052	8,086	8,093	7,997	7,868	7,763
Service-producing industries	65,386	65,595	65,714	65,795	65,819	65,880
Transportation and public utilities	5,146	5,161	5,172	5,147	5,113	5,090
Wholesale and retail trade	20,413	20,547	20,643	20,600	20,652	20,628
Wholesale trade	5,327	5,359	5,382	5,371	5,342	5,317
Retail trade	15,087	15,188	15,262	15,230	15,310	15,311
Finance, insurance, and real estate	5,262	5,294	5,319	5,327	5,329	5,341
Services	18,383	18,518	18,659	18,807	18,867	18,950
Government	16,183	16,075	15,921	15,914	15,858	15,870
Federal	2,789	2,776	2,769	2,754	2,738	2,729
State and local	13,394	13,300	13,151	13,160	13,120	13,141

gage rates which prevailed throughout the period. Employment declines in the construction industry accelerated sharply in the last half of 1981 and first two quarters of 1982. Job cutbacks totaled more than 100,000 in the first 6 months of 1982, following a loss of almost 165,000 in the second half of 1981. With record inventories of unsold homes, the housing industry remained in its longest and deepest slump in postwar history.

The housing slump was also reflected in the dismal performance of industries producing household durables such as major appliances and household furniture. Likewise, lumber and wood products and stone, clay, and glass, which are also closely tied to the construction industry, were hard hit by the almost 3-year depression in the housing market.

The general economic malaise, coupled with high interest rates, prolonged the deep recessionary environment in the automotive industry. Reflecting the persistent weakness in the demand for autos, job curtailments in the transportation equipment industry approached 185,000 between the second quarters of 1981 and 1982. However, by mid-1982, automobile inventories appeared to have been worked down to minimal levels, and job cutbacks had slowed significantly.

The primary metals industry was another source of weakness in the durable goods sector. The recession-induced slowdown in demand and production prompted a widespread reduction in steel inventories by users concerned with the high cost of holding stocks. Moreover, a surge in steel imports also played havoc with the industry's already deteriorating operating environment. As a result, employment in primary metals dropped almost 190,000 over the year ended second-quarter 1982 to a level more than 160,000 below its 1973–75 recession low.

Sizable cutbacks were posted among the other durable metals industries—particularly fabricated metals, nonelectrical machinery, and electric and electronic equipment—affected by low capacity utilization, declining orders, and scaled-back capital spending plans. The pronounced slump in the automobile industry was a key contributor to the declines in nonelectrical machinery, particularly in the machine tools industry where scheduled major retooling programs were canceled or postponed when auto sales remained at depressed levels. High borrowing costs and the recession took their toll on nonelectrical farm and construction machinery, while softening crude oil prices dampened the demand for oil drilling equipment.

The adverse effects of the prolonged slump in the housing and automotive industries also spilled over into the nondurable goods sector. Particularly sharp employment declines were registered in the housing- and auto-related textiles and rubber and plastics products industries. The apparel industry, hurt by weak consumer spending and strong international competition, witnessed the largest curtailments, losing more than 90,000 jobs between the second quarters of 1981 and 1982. Both the apparel and textile industries have fallen to more depressed employment levels than those experienced during the 1973–75 recession.

Even the mining industry, which has generally been less affected by economic downturns subsequent to the 1973–74 oil embargo, witnessed employment declines in the first half of the year. Job losses in the metal mining and nonmetallic minerals industries were not offset, as in past recessions, by gains in the usually robust oil and gas extraction industry. The drop in world crude-oil prices was reflected in the job losses in oil and gas exploration and drilling activity in early 1982, where a 20,000 drop in employment in oil and gas field services in the second quarter contrasted sharply to the prior 8 years of steady growth. As a result, mining experienced a decline of 45,000 jobs in the first half of 1982.

Although the recessionary impact was primarily focused in the goods-producing sector of the economy, employment growth in the service-producing sector moderated significantly with the onset of the recession, and some of the industry divisions that were heretofore relatively recession-immune actually registered sizable job losses.

In government, employment continued the declines that began in mid-1980. State and local government employment, which historically has shown growth during periods of economic downturn, posted declines during the two latest business contractions. Conversely, Federal government employment has not been historically buoyant during recessions. For example, during the postwar recessions prior to 1980, Federal government employment declined, on average, by about 50,000, in contrast to an average increase of 300,000 jobs in State and local government. During the current downtrend, job losses in Federal government totaled 45,000 between July 1981 and April 1982, while State and local government employment fell 65,000.

Employment declines were witnessed in wholesale and retail trade by the end of 1981, due primarily to the lackluster performance of retail sales. Despite the appreciable abatement in inflation and consequent increased purchasing power, the general weakness in retail spending reflected consumer caution in light of the economic slump and uncertain job outlook. Thus, although trade employment turned up slightly in the first quarter of 1982, offsetting earlier declines, it registered little growth for the first half of 1982 as a whole.

The number of jobs in transportation and public utilities also displayed a noticeable decline, beginning in the final quarter of 1981. Employment dropped more than 55,000 by mid-1982, with job losses centered in transportation, primarily in railroads and trucking and warehousing. Transportation is the most cyclically sensitive of the service-producing industries, no doubt because of its strong dependence on activity in the goods-producing sector.

Countering the job losses in transportation, trade, and government, employment growth was sustained elsewhere in the service-producing sector, led by the services division. This includes industries ranging from hotels, amusement and recreation, and auto repair to legal, health, business, personal, and educational services. While increasing more than 400,000 between the second quarters of 1981 and 1982, the rate of job growth had slowed markedly from that experienced prior to the economic slowdown. Employment growth continued in the finance, insurance, and real estate industry but was also visibly affected by the recession, as it slowed to a trickle in the first half of 1982.

Worker groups

The impact of the recession is also clearly evident from recent movements in total employment as measured by the monthly Current Population Survey of households. (See table 2.) At 99.6 million in the first quarter of 1982, total employment was down 1.2 million from its pre-recession peak in the second quarter of 1981. However, the pace of the decline, quite rapid in the fourth quarter of 1981, had slowed in 1982, with employment increasing 200,000 in the second quarter.

The employment-population ratio, which measures the proportion of the population that is employed, is a useful statistic for placing these declines in perspective.[4] This ratio is sensitive to changes in both the number of jobholders and the number of persons in the working-age population. As such, it is an indicator of the economy's ability to provide jobs for its growing population. The following tabulation provides seasonally adjusted quarterly average employment-population ratios for the major age-sex groups for 1981 and 1982:

	1981				*1982*	
	I	*II*	*III*	*IV*	*I*	*II*
Total	58.4	58.6	58.3	57.8	57.3	57.3
Both sexes, 16 to 19 years	44.8	44.3	43.6	42.3	41.5	41.1
Men, 20 years and over	72.6	72.7	72.4	71.5	70.8	70.6
Women, 20 years and over	48.3	48.7	48.5	48.4	48.2	48.3

After reaching a high of 59.3 percent in the fourth quarter of 1979, two recessions in consecutive years reduced the overall ratio 2 points to 57.3 percent by the second quarter of 1982, a 5-year low. Although all three major age-sex groups registered employment-population ratio declines in the current recession, each drop depicts a slightly different predicament. For example, while employment among adult men fell by almost 700,000 to 53 million between the second quarters of

1981 and 1982, their population rose. Both of these factors would act to depress their employment-population ratio, which, in fact, fell to an alltime low of 70.6 percent in second-quarter 1982.

The situation for teenagers was also severe, as employment declines of 700,000 in the past year dropped their ratio 3 percentage points to 41.1 percent. This happened even though their population also decreased over the same period. That is, employment declines exceeded population declines. Unlike the case for men and teenagers, employment among women actually increased 370,000 over the year to 40 million in second-quarter 1982. However, because the number of women grew even faster, their employment-population ratio declined from a high of 48.7 percent in the second quarter of 1981 to 48.3 percent a year later.

The contrasting employment trends for men and women are attributable, in large part, to the nature of their occupational and industrial attachment. Cyclical downturns in employment are heavily concentrated in the goods-producing sector and thus among blue-collar workers, where the work force is predominantly male. Employment among blue-collar workers declined by 1.0 million in the last half of 1981, followed by an additional 800,000 drop in the first two quarters of 1982. Blue-collar employment was down to 29.9 million in the second quarter, the lowest in more than 5 years. While all major blue-collar occupations were affected, the operatives group, excluding transport, was the hardest hit, losing more than a million jobs. White-collar employment, on the other hand, actually increased by 500,000 between the second quarters of 1981 and 1982, with most of the increase occurring in 1982. Increases among professional and technical workers and salesworkers more than offset declines among clerical workers. Employment of service workers also increased slightly, but this was limited to the last half of 1981.

Divergent patterns of employment decline were observed among the different race-ethnic groups. White employment, which averaged 88.2 million in the second quarter of 1982, was off almost 1 million over the year. However, this decline occurred entirely in the latter half of 1981. Since December, their employment has increased slightly, although their employment-population ratio had slipped to 58.4 percent by the second quarter of 1982. In contrast, employment losses among blacks[5] and Hispanics have been greater in 1982 than during 1981. At 9.1 million in second-quarter 1982, black employment was 250,000 below the year-earlier level, and their employment ratio was at a record low. As in previous recessions, blacks have suffered proportionately larger employment declines than whites. Representing only 10 percent of the labor force, blacks have accounted for 24 percent of the total employment cutbacks. Hispanic employment actually increased during the early part of the recession, before declining 270,000 in 1982 to 5.2 million in the second quarter.

Record jobless rates reached

The continued economic slide in 1982 pushed the Nation's unemployment rate to a record high for the post-World War II period. Total unemployment reached 10.5 million, or 9.5 percent of the labor force, in May. This was an increase of 0.7 percentage point since December, and was 2.3 percentage points above the prerecession low of 7.2 percent recorded last July. Although less than the postwar average for peak-to-trough changes in the jobless rate of 3.3 percentage points, the current rate reflects, in part, the relatively brief and weak recovery that separated downturns in 2 consecutive years, an unprecedented economic occurrence. Unemployment had risen by 3.8 percentage points over these two recessionary periods, close to the 4.4 rise of the 1973–75 recession. The unemployment rate was unchanged in June.

After a surge in the last quarter of 1981 which added more than a million people to the jobless total, unemployment increased by less than half as much in the first quarter of 1982. However, while employment increased in the second quarter, the unemployment level jumped by another 850,000 persons, pushing virtually all major unemployment series to record rates. Following are the most recent and previous high monthly jobless rates, seasonally adjusted, for major demographic groups:

	1975	*1982*
Total	9.0 (May)	9.5 (May)
Both sexes, 16–19 years	20.9 (June)	23.1 (May)
Men, 20 years and over	7.3 (May)	8.7 (June)
Women, 20 years and over	8.5 (April)	8.3 (May)
Whites	8.4 (May)	8.5 (May)
Blacks	15.4 (Sept.)	18.7 (May)

Unemployment increased more rapidly for adult men than for women early in the recession; men's jobless rate, which typically is lower than that for women, actually exceeded the women's rate in the first and second quarters of 1982. (See table 3.) Overall, men have contributed about 65 percent of the total increase in unemployment since July 1981, and women, less than 30 percent. (Their respective shares of the labor force are 53 and 40 percent.)

The situation for teenagers was also quite severe. Their jobless rate showed no recovery during 1981 or 1982, rising almost 4.4 points from July 1981 to an all-time high of 23.1 percent in May 1982. Although teenagers accounted for only 8 percent of the labor force, their share of total unemployment was more than 19 percent. Black teenage unemployment was 50.1 percent in the second quarter of 1982, up more than 10 percentage points over the year. In contrast, white teenage unemployment increased about 3 points over the same period to 20.2 percent. Both rates surpassed those that occurred in the second quarter of 1975, the peak quarter in overall unemployment during the 1973–75 recession.

From a metropolitan-nonmetropolitan standpoint, it was apparent that black teenagers residing in the Nation's central cities and nonmetropolitan areas had been particularly hard hit in the current recession. This is illustrated in the tabulation below, which presents second-quarter 1975 and 1982 jobless rates (not seasonally adjusted) for metropolitan central cities and suburbs and for nonmetropolitan areas, by age and race:

	Central cities		*Suburbs*		*Nonmetropolitan areas*	
	1975 II	*1982 II*	*1975 II*	*1982 II*	*1975 II*	*1982 II*
White:						
16 to 19 years	21.2	21.5	18.4	18.7	16.6	22.0
20 years and over	7.7	7.3	6.5	6.5	6.6	7.9
Black:						
16 to 19 years	43.1	54.1	43.4	47.1	39.6	51.5
20 years and over	12.1	17.1	12.3	13.5	12.9	15.9

There was little change in the unemployment rate of black teenagers living in the suburbs over the same period. In contrast, all of the increase in unemployment among white teenagers occurred in nonmetropolitan areas.

Table 3. Major unemployment indicators, seasonally adjusted quarterly averages, 1981–82

[Unemployment rates]

Category	1981				1982	
	I	II	III	IV	I	II
Characteristic						
Total (all civilian workers)	7.4	7.4	7.4	8.3	8.8	9.5
Both sexes, 16–19 years	19.1	19.2	19.1	21.1	21.9	22.8
Males, 20 years and over	6.0	6.1	6.0	7.2	7.7	8.4
Females, 20 years and over	6.6	6.7	6.7	7.2	7.8	8.2
White	6.5	6.5	6.4	7.3	7.7	8.4
Black	14.6	15.1	15.8	17.0	17.4	18.4
Hispanic	11.0	9.8	9.8	11.1	12.4	12.5
Occupation						
White-collar workers	3.9	4.0	4.0	4.3	4.5	4.9
Professional and technical	2.7	2.9	2.7	2.9	3.1	3.3
Managers and administrators, except farm	2.5	2.6	2.7	2.9	2.9	3.5
Salesworkers	4.2	4.4	4.9	4.9	5.0	5.6
Clerical workers	5.6	5.6	5.7	6.1	6.6	6.9
Blue-collar workers	10.1	9.8	9.7	11.8	12.6	13.7
Craft and kindred workers	7.1	7.1	7.2	8.7	8.8	9.7
Operatives, except transport	12.0	11.5	11.3	14.1	15.6	16.7
Transport equipment operatives	8.9	8.1	8.0	9.6	10.3	11.8
Nonfarm laborers	14.7	14.1	14.0	16.2	17.6	18.5
Service workers	8.4	9.0	8.6	9.5	8.7	10.8
Farmworkers	5.0	5.1	4.7	6.3	5.8	7.1

Overall, unemployment among major race-ethnic groups increased substantially during the 1981–82 recession, with rates for whites and blacks at record levels in May 1982, while the rate for Hispanics was still slightly below its 1975 high. From July 1981 to May 1982, white unemployment was up 2.2 points to 8.5 percent. Blacks had a very limited recovery from the 1980 recession and began to experience record rates of unemployment almost from the beginning of the current downturn. Their rate was 18.7 percent in May 1982, up from 14.9 percent the previous July. Over the same period, Hispanic unemployment increased from 10.0 to 13.9 percent.

As indicated earlier, blue-collar workers have been hardest hit during the current recession. Unlike the total jobless rate, the blue-collar unemployment rate rose in June to 13.9 percent, up more than 4 points since July 1981. Operatives, excluding transport, and nonfarm laborers were most affected, with rates of 16.7 and 17.9 percent in June.

In contrast, white-collar workers showed only a moderate increase in unemployment over the year ended June 1982. Their rate of 5.0 percent in June was still below the highs of the 1975 recession. While unemployment increased for all major white-collar occupations, that for clerical workers showed the largest increase, rising 1.5 points to a high of 7.2 percent in April. Both service workers and farmworkers reached record rates in May of 11.3 percent and 8.3 percent, respectively.

Job losers, leavers, and entrants. During economic downturns, the number of persons who lose their jobs increases as firms cut back production and reduce their work forces through layoffs or permanent separations. At 58.0 percent in the second quarter of 1982, the job-loser share of unemployment was up about 7.5 percentage points over the year and surpassed the highs reached in both the 1975 and 1980 recessions. At about 19 percent during the first two quarters of 1982, the layoff component of the job-loser total was down slightly from the fourth quarter of 1981 and still below rates reached in the previous two recessions.

In contrast, the share of total unemployment that results from individuals voluntarily leaving their last jobs (to look for new jobs) tends to decline, as one would expect, during periods of high unemployment. The job leavers' share has declined throughout the current recession, reaching an alltime low of 8.4 percent in the second quarter of 1982. Both new entrants' and reentrants' shares of total unemployment were down slightly in the first 6 months of 1982.

Duration of unemployment. The substantial increase in unemployment during the fourth quarter of 1981 raised the short-term jobless share and reduced the two measures of duration of unemployment—the mean and the median. Since then both measures have lengthened as the proportion unemployed 15 weeks or longer exceeded 30 percent at midyear. The median duration of unemployment rose from 6.8 weeks in the fourth quarter of 1981 to a record 9.1 weeks in the second quarter of 1982. Over the same period, the mean duration increased from 13.2 to 15.1 weeks, surpassing the high reached during the 1980 recession but are still considerably below that reached in 1975. Because measures of duration typically lag cyclical changes in economic activity, both measures can be expected to continue rising for the balance of the year, even if an improvement in the labor market begins soon.

Other recessionary impacts

Shortened workweeks and discouraged workers. The poor performance of the economy over the past year has increased both the number of persons involuntarily working part time, either as a result of slack work or the inability to find full-time work, and the number reporting they want a job but are not looking for work because they believe no work is available—so-called "discouraged workers." Neither group is reflected in the official unemployment counts, although information on them is published on a regular basis. Measurement of both groups is vital to a fuller understanding of the nature and magnitude of the overall underutilization of our human resources. The following tabulation provides seasonally adjusted quarterly averages (in thousands) for nonagricultural workers involuntarily on shortened workweeks and for discouraged workers during 1981 and 1982:

	1981				*1982*	
	I	*II*	*III*	*IV*	*I*	*II*
Involuntary part-timers	4,323	4,166	4,460	5,108	5,450	5,680
As a percent of total at work	4.7	4.6	4.9	5.6	6.0	6.2
Discouraged	1,093	1,043	1,094	1,119	1,339	1,597

After declining in the second quarter of 1981, the number of nonagricultural workers involuntarily on part-time schedules increased steadily, reaching 5.7 million, or 6.2 percent of those "at work" in nonagricultural industries, in the second quarter of 1982; both figures are record highs since collection of the data began in 1955. While employers often reduce hours before laying off employees in economic downturns, the current high number of workers on shortened workweeks may also reflect a growing tendency among employers to keep workers on short workweeks for longer periods,[6] and the growing number of would-be full-time workers who obtain part-time jobs rather than remain unemployed.

The number of discouraged workers has risen nearly continuously for more than 3 years. The discouraged total reached a high of 1.5 million in the second quarter of 1982, up 375,000 since the end of 1981; about 70 percent of the discouraged cited job-market, rather than personal, factors as reasons for their discouragement.

Women and black and other minorities continued to be overrepresented among the discouraged in 1982. Women accounted for about 60 percent in the second quarter, whereas they comprised only 43 percent of the civilian labor force. While women's share of discouragement was the same as last year, the black and other minorities share has become even more disproportionate. Some 500,000 discouraged workers were blacks or members of other racial minority groups, 33 percent of the second quarter total and up from 31 percent a year earlier. (Their share of the civilian labor force was 13 percent.)

Alternative measures. While persons involuntarily working part time or discouraged are not included in the official measures of unemployment, the Bureau of Labor Statistics does provide a measure which includes these categories along with the unemployed. Designated as U-7, it is one of six alternative measures of unemployment regularly published by the Bureau; this has been done in recognition of the fact that no single measure of unemployment can satisfy the diverse needs of data users. The definitions for all seven measures are provided below, and their trends during the past decade are presented in chart 1.

U-1	Persons unemployed 15 weeks or longer as a percent of the civilian labor force.
U-2	Job losers as a percent of the civilian labor force.
U-3	Unemployed persons 25 years and over as a percent of the civilian labor force 25 years and over.
U-4	Unemployed full-time jobseekers as a percent of the full-time labor force.
U-5	Total unemployed as a percent of the civilian labor force (official measure).
U-6	Total full-time jobseekers plus half part-time jobseekers plus half total on part time for economic reasons, as a percent of the civilian labor force less half of the part-time labor force.
U-7	Total full-time jobseekers plus half part-time jobseekers plus half total on part time for economic reasons plus discouraged workers, as a percent of the civilian labor force plus discouraged workers less half of the part-time labor force.

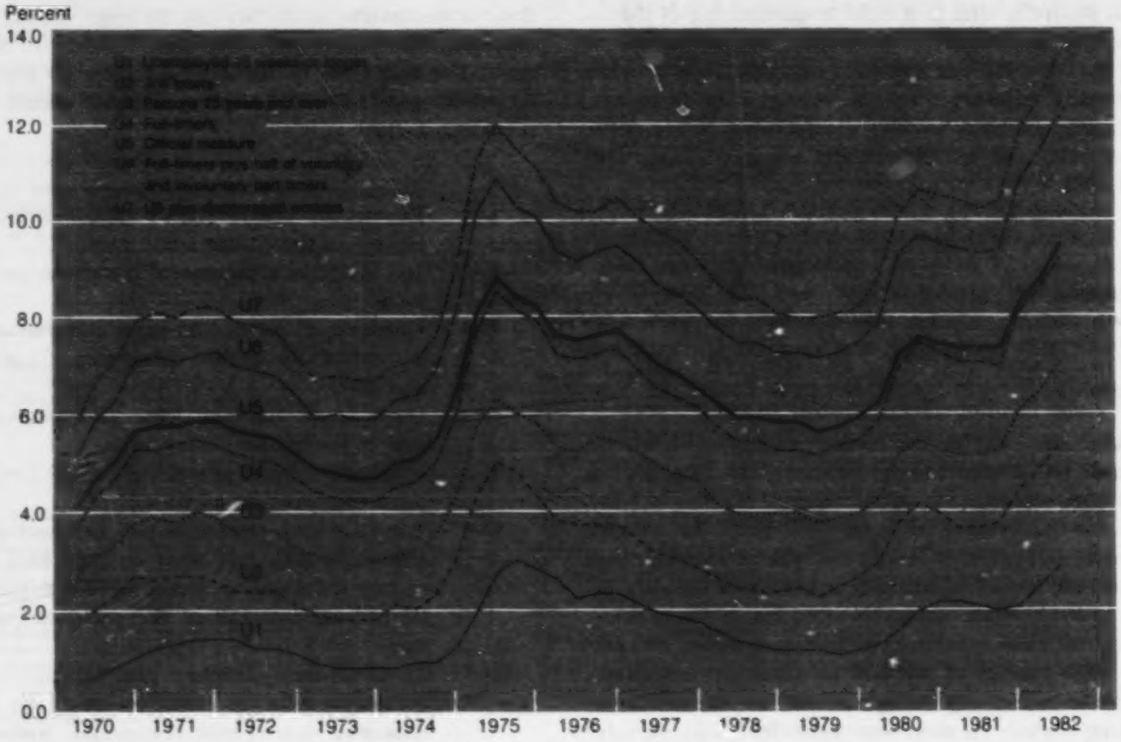
Each measure is representative of a different body of opinion about the meaning and measurement of unemployment. The rationale for U-7 is that involuntary part-time workers should be counted as at least "partially" unemployed and that the situation of discouraged workers is essentially the same as that of the unemployed. In this measure, those seeking only part-time work or voluntarily employed part time are given weight of one-half because the latter only work about half a full-time schedule. As can be seen from chart 1, U-7 has consistently been several points higher than U-5, the official measure. From a high of 12.0 percent in the second quarter of 1975, U-7 declined to 8.0 percent in the second quarter of 1979 before rising under the impact of the last two recessions to a new high of 13.4 percent in the second quarter of 1982.

In contrast, several measures are much more restrictive than the official measure. For instance, U-1 includes only those unemployed 15 weeks or longer, while U-2 counts only job losers. The rationale behind U-1 is that joblessness is a problem only when it has continued long enough to cause substantial hardship, while proponents of U-2 argue that only persons who lose their jobs merit concern because this is what leads to significantly lower income. In second-quarter 1982, U-1 was 3.0 percent, almost matching its high reached in 1975, while U-2 was at an alltime high of 5.5 percent.

Chart 1 shows how consistent the trend in unemployment has been, regardless of the measure one might choose. For example, all measures, with the single exception of U-1 which tends to lag the others by one or more quarters, reached cyclical highs in the second quarter of 1975 and lows in the second quarter of 1979. The magnitude of the impact of back-to-back recessions in 1980 and 1981–82 is evidenced by the fact that every measure reached a record high by the second quarter of 1982, with the exception of U-1.

Joblessness among States. There is considerable variation in unemployment rates at the State level as well as at other subnational levels. The reasons for such differ-

Chart 1. Unemployment indicators, seasonally adjusted quarterly averages, 1970-82



NOTE: Second-quarter 1982 data are April-May averages.

ences are numerous; those often cited include area differences in the composition of industry and the local work forces and a given area's competitive strength and growth rate.[7] The purpose here is not to examine why the incidence of unemployment varies across areas, but to present an overview of the States most or least affected by the recent downturn in economic activity. The uneven impact of the recent recession is reflected in the following list of States with the largest and smallest changes in jobless rates between the first quarters of 1981 and 1982; during that period, the Nation's unemployment rate increased 1.4 percentage points. (Data on the 10 most populous States come directly from the household survey, while data for the remaining States are based upon estimation procedures provided by the BLS to the States, taking into account data from the household survey, unemployment insurance records, and other sources.[8])

Increased substantially		*Little changed*	
State	*Percentage point change*	*State*	*Percentage point change*
Alabama	3.5	North Dakota	-0.9
Idaho	3.2	South Dakota	-0.4
Washington	3.1	New Mexico	-0.2
South Carolina	3.0	Wyoming	0.2
Iowa	3.0	Alaska	0.3
Indiana	2.7	New York	0.3
Michigan	2.6	West Virginia	0.3
Pennsylvania	2.6	Maine	0.4
		Nevada	0.4

In general, States with a heavy reliance on durable goods manufacturing such as auto, steel, and logging suffered the largest increases in unemployment, while mineral-rich States were less affected.

The following list of States with extremely high or low jobless rates (not seasonally adjusted) during the first quarter of 1982, when the overall rate was 9.5 percent, provides a slightly different picture:

Above 12 percent		*Below 6 percent*	
State	*Unemployment rate*	*State*	*Unemployment rate*
Michigan	16.4	Oklahoma	4.9
Alabama	14.3	Wyoming	4.9
Indiana	13.3	Kansas	5.4
Washington	12.7	Hawaii	5.7
Oregon	12.5	South Dakota	5.8
West Virginia	12.2	North Dakota	5.8
Ohio	12.1	Texas	5.8
Tennessee	12.1		

A comparison of the two tabulations shows that the four States with the highest jobless rates also posted substantial over-the-year unemployment gains. (The 12-percent cutoff point was chosen only to highlight the situation and is not meant to imply that any State does not necessarily have an unemployment problem.) Overall, the unemployment situation appears to be most severe in the industrial North and South Central States and in the Pacific Northwest, and least severe in the Plains and Mountain States.

Labor force growth

Growth in the civilian labor force has slowed considerably in recent years, in part because of the smaller number of persons reaching labor force age, but also because of the poor performance of the economy. At 110.2 million in the second quarter of 1982, the labor force had grown only 1.3 million over the year, far below the 2.1-million increase of the previous year. (Labor force movements within the second quarter were unusually large on a seasonally adjusted basis, as the total increased by a million in May and then declined by a similar amount in June.) The following tabulation provides seasonally adjusted labor force levels (in thousands) and participation rates (percent of a group's population that is either employed or unemployed) for the second quarters of 1981 and 1982 for major age-sex groups:

	Second quarter 1981		*Second quarter 1982*	
	Labor force	*Participation rate*	*Labor force*	*Participation rate*
Total	108,835	64.1	110,168	64.0
Both sexes, 16 to 19 years	9,084	55.8	8,569	54.1
Men, 20 years and over	57,243	79.2	57,920	78.9
Women, 20 years and over	42,507	52.3	43,629	52.8

Adult women continued to experience the strongest labor force growth—1.1 million over the year. In contrast, adult men posted an increase of only 500,000, while the teenage labor force declined by 500,000. Most of the teenage decline reflected the drop in their total population.

The overall labor force participation rate was 64.0 percent in the second quarter of 1982, about the same as the record 64.1 percent reached in the second quarter of 1981. The percentage of the population active in the labor force has been rising throughout the last two decades, as increases among adult women and, until recently, teenagers have more than offset declines among adult men.

In spite of the recession, the participation rate for adult women continued to increase, rising one-half of a point over the year to 52.8 percent. However, this was far below increases registered in previous years. At 78.9 percent in the second quarter of 1982, the participation rate for adult men continued its secular decline, while the rate for teenagers fell 1.7 points over the past year to 54.1 percent, its lowest level in more than 8 years.

By Midyear, there were some signs that the labor market was improving. Industry job cutbacks had slowed and unemployment appeared to be leveling. Whether the economy was actually on the road to recovery or merely pausing before further deterioration was still unclear, as economic signals overall were mixed. The behavior of interest rates, the factor that deepened and prolonged the current recession, will undoubtedly play the key role in the timing and degree of a subsequent recovery. ☐

FOOTNOTES

[1] Statistics on nonagricultural payroll employment from the Current Employment Statistics (CES) program are collected by State agencies from employer reports of payroll records and are tabulated by the Bureau of Labor Statistics. Data on labor force, total employment, and unemployment are derived from the Current Population Survey (CPS), a sample survey of households conducted and tabulated by the Bureau of Census for the Bureau of Labor Statistics. A description of the two surveys appears in the Bureau of Labor Statistics monthly publication, *Employment and Earnings*.

[2] With the release of benchmarked employment data for the payroll series in May 1982, the BLS converted coverage of the Indexes of Diffusion from 172 to 186 industries, incorporating industry series added with the 1972 SIC revision. For comparability, the 172-industries diffusion indexes for the recessionary periods in table 1 are available beginning with the 1960–61 period. The indexes showing the percent of industries in which employment declined over a 6-month span are as follows: August 1960, 76; June 1970, 76; January 1975, 88; April 1980, 78; and January 1982, 79. The 186-industries indexes were not much different from the 172-industries indexes for the same time periods. For a detailed discussion of indexes of diffusion of changes in the number of employees on private nonagricultural payrolls, see John F. Early, "Introduction of Diffusion Indexes," *Employment and Earnings*, December 1974, pp. 7–11.

[3] See, for example, Geoffrey H. Moore, "Lessons of the 1973–1976 Recession and Recovery" in William Felner, ed., *Contemporary Economic Problems 1977* (Washington, D.C., American Enterprise Institute for Public Policy Research, 1977), pp. 117–58; Norman Bowers, "Have employment patterns in recessions changed," *Monthly Labor Review*, February 1981, pp. 15–28; and Michael A. Urquhart, "The services industry: is it recession-proof?" *Monthly Labor Review*, October 1981, pp. 12–18.

[4] For a discussion of the employment-population ratio as a cyclical indicator, see Carol Boyd Leon, "The employment-population ratio: its value in labor force analysis," *Monthly Labor Review*, February 1981, pp. 36–45; and Julius Shiskin, "Employment and unemployment: the doughnut or the hole?" *Monthly Labor Review*, February 1976, pp. 3–10.

[5] The proportion of blacks in the "black and other" group has been declining; it was 83 percent in 1980. This has resulted from a gradual influx of Asians, particularly Vietnamese, into the U.S. labor force in the 1970's. For this reason, and because of the availability and increased reliability of data for blacks, it is not as necessary as in the past to use data for "black and other" when discussing black workers. Thus, unless otherwise stated, the term black in this article refers exclusively to the "black only" population and not to the "black and other" category, which, in addition to blacks, includes American Indians, Alaskan Natives, and Asian and Pacific Islanders.

[6] See Robert W. Bednarzik, "Work-sharing in the U.S.: its prevalence and duration," *Monthly Labor Review*, July 1980, pp. 3–12.

[7] See, for example, Lynn E. Browne, "Regional Industry Mix and the Business Cycle," *New England Economic Review*, November/December, 1978, pp. 35–53; Lynn E. Browne, "Regional Unemployment Rates—Why Are They So Different?" *New England Economic Review*, July/August 1978, pp. 5–26; and Thomas Hyclak and David Lynch, "An Empirical Analysis of State Unemployment Rates in the 1970's," *Journal of Regional Science*, Vol. 20, No. 3, 1980, pp. 377–86.

[8] Labor force and unemployment estimates for States are part of a cooperative program between the Bureau and State employment security agencies where estimates are prepared under concepts, definitions, and technical procedures established by the Bureau. A fuller explanation of the technical procedures used to develop these estimates appears monthly in the Explanatory Note on State and Area Unemployment Data in the BLS periodical, *Employment and Earnings*. The 10 most populous States (as of the 1970 census) for which estimates come directly from the Current Population Survey are: New York, California, Illinois, Ohio, New Jersey, Pennsylvania, Michigan, Texas, Massachusetts, and Florida.

Imports and domestic employment: identifying affected industries

For its trade monitoring program, the Bureau has developed measures of import penetration; initial data suggest about one-fourth of manufacturing groups might be sensitive to rising imports

GREGORY K. SCHOEPFLE

Concern about the performance of U.S. industries in domestic and international markets has led to increasing interest in the development of indicators of the domestic market share accounted for by imports. Accordingly, the Bureau of Labor Statistics has begun constructing measures which, when applied in conjunction with other information, could be used to identify domestic industries that might be experiencing adverse employment effects or other adjustment problems because of changing international trade patterns. Analysis of the geographic concentration of domestic production and employment for these sectors could help Federal agencies target assistance programs for workers, communities, and industries.

This article considers the problems of constructing indicators of import market share at the 4-digit Standard Industrial Classification (SIC) level,[1] and discusses some of the main features and trends of the BLS trade monitoring statistics. Data examined so far show that, between 1972 and 1979, the import share of the domestic market for manufactured goods rose moderately. However, among the 318 manufacturing groups studied separately, 72 were found to be "import-sensitive"—that is, having experienced either a sustained high level or a substantial increase in import share of U.S. sales during 1972–79. Employment declines over this period were reported in 38 of the 79 domestic industries which produce products similar to those in "import-sensitive" groups; more than half of these 38 industries were involved in the manufacture of textile, apparel, and leather goods products. The limitations of these measures are examined in the appendix.

Background

Under section 282 of the Trade Act of 1974 (19 USC 2393), the Bureau of Labor Statistics and the Bureau of the Census were given the responsibility of monitoring changes in U.S. imports and related domestic production and employment. The context for this monitoring program was the expanded trade adjustment assistance program established under Title II of the act. The trade monitoring system was intended to inform the Congress and administrators of adjustment assistance programs of those industries and localities in which adjustment

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problems were likely to occur as a result of the expansion of international trade.

The Bureau of the Census and the Bureau of Labor Statistics (BLS) jointly carry out the monitoring. The Census Bureau develops and publishes trade and domestic production data, while BLS has chief responsibility for the development and publication of related employment data, the development of the trade monitoring system, and the establishment of a reporting program on the results.

In connection with its broad responsibility, BLS plans, subject to availability of resources,[2] to:

- Establish a reliable base of detailed merchandise import, product-based output, and industry employment data on a consistent classification system.
- Set up a timely system for reporting and summarizing the data.
- Provide objective interpretations of the findings.

Currently, the Bureau produces quarterly and annual tabulations on SIC-based merchandise imports and industry employment. Import penetration ratios, that is, the ratio of imports to the sum of domestic product shipments and imports, are computed annually for manufacturing commodity groups.

Concepts

A variety of measures can be developed to assess the United States' relative trade performance, both on an aggregate basis and by industrial sector. Depending upon the ultimate application, certain definitions of these measures may be preferred over others. Of special interest for the examination of potential employment adjustment problems are indicators of the share of the domestic market accounted for by foreign imports and the share of total sales which is accounted for by U.S. exports.

Ideally, a measure of import penetration should compare domestic consumption of a product with imports of the product at a specified market point of distribution; however, no product-specific measure of consumption exists. The best available substitute is domestic demand, often termed "apparent consumption," which is usually defined as U.S. sales (shipments) less net exports (exports minus imports).[3] Furthermore, while final sales (retail for consumers) of imports over final U.S. sales from all sources would be the most appropriate measure of the proportion of the domestic market served by imports (that is, import penetration), such data are not reported separately in Federal statistics.

Similar problems arise in the development of measures of export performance. Final sales of U.S. exports (excluding transportation and insurance costs to the point of exportation) over U.S. total final sales would be the best measure of the proportion of domestic economic activity accounted for by the exports; unfortunately, data on export sales by U.S. manufacturing establishments are limited.[4]

Import penetration and export proportion measures presented in this article show the market shares of a final commodity which are accounted for by imports and exports, respectively. They do not, however, account for intermediate products used in domestic production. For example, they exclude imported or domestically produced components of end-products which are consumed here or abroad. An analysis of intermediate goods would have to be based on an econometric model or an input-output table.

Taking into account the data limitations which are discussed in greater detail in the appendix and the desire to develop measures for broad industrial trade monitoring, currently available series on U.S. imports and exports, reclassified to the equivalent producer industry, are related to industrial product-based shipments. Four ratios which relate domestic shipments to international merchandise trade may be considered:[5]

$$\text{(a) } M / (M + S - X)$$

$$\text{(b) } M / (M + S)$$

$$\text{(c) } X / S$$

$$\text{(d) } X / (M + S)$$

where

M = U.S. imports
X = U.S. exports
S = U.S. product shipments
$S - X$ = consumption of domestically produced goods
$M + S - X$ = apparent consumption
$M + S$ = new supply

Measure (a), the ratio of imports to apparent consumption, is commonly used to assess the import penetration of a domestic market, showing the share of a market which is served by imports. One shortcoming of this market share-based measure from an employment point of view is that it fails to capture the offsetting nature of the domestic industry's involvement in export markets. Measure (b) makes allowances for this factor, representing the ratio of imports to new supply. New supply is defined as imports plus U.S. product shipments. The latter include domestically produced goods which are exported for foreign consumption as well as those which are consumed here. Such a supply-based measure takes into account (and is influenced by) no only domestic demand but also foreign demand for U.S goods. Increased output in response to increases in either domestic or foreign demand for the product wi usually result in increased domestic employment levels. Therefore, from an employment point of view, measure (b) might be preferred to (a), because it takes into account the foreign demand for U.S. goods. If exports do not play a significant role in the consumption of an industry's output, then ratios (a) and (b) will be nearly the same. However, if exports are important, ratio (b) will be smaller than (a).

Measure (c), the ratio of exports to U.S. shipments, is a commonly used export performance measure. It reflects the proportion of total domestic output which is exported, but fails to capture the influence of imports in U.S. markets. Measure (d), the ratio of exports to new supply, accounts for the influence of imports and possible displacement effects which they might have. From an employment standpoint, any domestic employment displacement due to imports would be conjectural—that is, it is not clear that the same goods could or would be produced domestically if imports were not available.[6] Therefore, measure (c) might be preferred to (d), because it would directly reflect the actual importance of exports in domestic activities. Ratio (d) will be smaller than (c) if imports are significant; correspondingly, the less significant imports are in new supply, the closer the two measures will be.

Ratio (d) does have a feature which might commend its use in conjunction with measure (b), namely a common denominator. Hence, the difference between measures (d) and (b) could be viewed as a trade gap or balance measure for a sector relative to the size of the sector.

All of the above ratios could be based on either dollar value or a unit of quantity, if a consistent measure of the latter is available. (Perhaps the best evaluation of these ratios from an employment standpoint would be with weighted aggregates of U.S. unit labor requirements.) Measures based on quantity assume that there is a homogeneous and meaningful unit as well as product specification for the classification. For certain well-defined products, such as new automobiles and textile goods, quantity-based measures might be constructed, but the appropriate level of commodity aggregation is often difficult to determine. Furthermore, quantity-based measures often fail to capture quality differences within a product group.

In constructing product-based measures at the aggregate industrial level, value-based measures, while they have some limitations,[7] are generally more useful, because homogeneous units of quantity either are not available or are not very meaningful for purposes of comparison. About two-thirds of the manufacturing 4-digit SIC-based import commodity groups do not have a homogeneous unit of quantity.

Quality differentials are frequently reflected in value data through prices, which may serve as implicit weights when aggregating commodity groups. Ideally, the value of imports should be adjusted for price changes, as well as for importer markups, customs duties, subsidies, and costs of transportation and insurance to the market point of distribution. A transaction-based price index would account for any changes in product specification, quality, and conditions of sale. Unfortunately, at the present time, there are no adequate and consistent deflators for SIC-based imports or exports. In general, domestic prices of imported goods include, in addition to the import price, the domestic value added (unloading, inland transit, further manufacture, handling, markups, and so forth) and applicable duties. Because all these costs can vary independently of import prices, domestic price trends are considered to be poor proxies for import price trends.[8] In addition, the use of calculated import unit-value measures as price indexes for import commodity groups can be misleading, because of variations in product specification and quality within the product category.

In general, value-based measures will differ from those calculated on a quantity basis. For example, value-based import penetration ratios will be smaller than those which are quantity based in those cases where imports consist predominantly of items with lower unit values than similar domestic products (for example, nonrubber footwear and brassieres). The effect of using current-dollar trade and shipment values in place of real (deflated) values in the calculation of the market share measures depends upon the stability of the ratio of import or export prices to domestic prices. In many cases, we would expect domestic and world commodity prices to exhibit similar trends in the absence of domestic price controls or government subsidies. Therefore, it would be expected that import penetration ratios based on current-dollar values would show more stability with regard to inflation than either of their component value-based series on imports or shipments.

Table 1. Two-digit SIC-based share of manufacturing total imports, shipments, and employment, by import penetration level, 1972 and 1979

[In percent]

Import penetration level in 1972 or 1979	Share of manufacturing total							
	Two-digit SIC groups		Import value		Shipments value		Industry employment	
	1972	1979	1972	1979	1972	1979	1972	1979
All SIC groups . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 1 percent	10.0	5.0	0.6	([1])	4.3	0.5	6.1	0.3
1 and under 2 percent .	—	5.0	—	0.4	—	3.4	—	5.9
2 and under 5 percent .	30.0	30.0	20.9	18.4	38.0	35.7	31.8	31.6
5 and under 10 percent .	45.0	20.0	49.7	23.4	42.0	24.7	48.9	19.9
10 and under 20 percent	15.0	30.0	28.9	52.1	15.6	34.0	13.2	39.0
20 and under 50 percent	—	10.0	—	5.6	—	1.7	—	3.3
50 percent and over . . .	—	—	—	—	—	—	—	—

[1] Less than 0.05 percent.

NOTE: Due to rounding, sums of individual items may not equal 100.

Data

The shipments data for the market-share measures are from the Census Bureau's *Annual Survey of Manufactures.* The value of product shipments is a sampling estimate of the current-dollar value of all products sold, transferred to other plants of the same company, or shipped on consignment, whether for domestic consumption or for export. It represents net sales value (f.o.b. plant), and excludes discounts and allowances, freight charges, and excise taxes. In a few cases, domestic production values, rather than shipment values, are used. Products bought and resold without further manufacture are excluded. The value of shipments for a 4-digit class of products used in the measures is on a wherever-made basis—that is, total shipments of the primary products of the industry, which include sales of the same products made by firms classified in other industries. (See the appendix for further discussion.)

The import and export data are from the Census Bureau's foreign trade statistics.[9] The import value is current U.S. dollar customs value (usually foreign port value) of imports for consumption and excludes any customs duty, freight, or handling charges. The export value is current U.S. dollar free alongside ship (f.a.s.) value (U.S. port value) of exports of domestic merchandise and includes any markups and freight or handling charges incurred to the port of exportation.

Trends in penetration measures

As part of the current trade monitoring program, BLS tracks 347 4-digit SIC-based manufacturing import groups (as well as 63 agricultural and mineral groups) each quarter for significant increases in the current-dollar value of imports for consumption. In addition, industry employment is analyzed quarterly for significant declines.

While these procedures are useful in highlighting short-term movements in those commodity groups and industries which are experiencing a sudden increase in imports and a decline in current industry employment, it is instructive to consider the structure and composition of import penetration, as well as the long-term trends in industry employment, for those commodity groups for which either import penetration has increased substantially in the recent past or the level of penetration has remained relatively high.

Structure and composition. Chart 1 presents an overview of the structure of import penetration and export proportion in 2-digit SIC-based U.S. manufacturing major groups for the years 1972 and 1979 (latest available). In both years, the all-manufacturing levels of both import penetration and export proportion were in the 5.0- to 9.9-percent range; between those years, import penetration rose more moderately than export proportion. During the period 1972–79, the leather, miscellaneous manufactures, and apparel major groups experienced the largest increases in import penetration, while the textiles group registered a slight decline. During the same period, the tobacco, instruments, electrical and nonelectrical machinery, and miscellaneous manufactures major groups showed the largest increases in export proportion, while the petroleum refining group experienced a modest decrease.

At the aggregate level, imports appear to contribute significantly (above 10 percent in 1979) to the available new supply of apparel, lumber, leather, primary metals, electrical machinery, transportation equipment, instruments, and miscellaneous manufactures, but have a negligible role in tobacco and printing and publishing. In four of the major groups in which imports contribute significantly to new supply (transportation equipment, electrical machinery, instruments, and miscellaneous manufactures), U.S. exports also play an important role. Other major groups in which a significant proportion of output is exported include tobacco, chemicals, and nonelectrical machinery.

Table 1 presents the percentage distribution of total manufactures import value, product-based shipments, and industry employment by import penetration level in 1972 and 1979, on a 2-digit SIC basis. In both years, 12 of the 20 major manufacturing groups had a level of import penetration of 5 percent or more. In 1972, the corresponding imports accounted for 79 percent of the value of all manufactured imports; by 1979, their imports accounted for about 83 percent of the total.

In 1972, approximately 29 percent of the import value was accounted for by product groups with penetration levels of 10 percent or more, but by 1979, this share had grown to nearly 58 percent. During this period, both the industry employment and product shipments share-of-manufacturing total for the groups with

Table 2. Four-digit SIC-based share of manufacturing total imports and shipments, by import penetration level, 1972 and 1979

[In percent]

Import penetration level in 1972 or 1979	Import penetration level for all SIC groups in range		Share of manufacturing total					
			Four-digit SIC groups		Import value		Shipments value	
	1972	1979	1972	1979	1972	1979	1972	1979
All SIC groups	6.1	7.9	100.0	100.0	100.0	100.0	100.0	100.0
Under 1 percent	0.3	0.4	21.7	18.2	1.1	0.9	22.9	18.3
1 and under 2 percent	1.2	1.3	12.0	8.8	1.8	1.2	9.3	7.9
2 and under 5 percent	3.4	3.6	26.4	18.8	16.6	8.2	30.8	19.1
5 and under 10 percent	7.7	7.1	18.2	22.3	28.2	28.3	22.2	31.8
10 and under 20 percent	13.9	14.7	11.3	16.0	30.2	37.2	12.2	18.7
20 and under 50 percent	28.4	28.0	8.5	12.3	15.3	17.3	2.5	4.8
50 percent and over	57.1	61.9	1.9	2.5	6.8	6.9	0.3	0.4

NOTE: Due to rounding, sums of individual items may not equal 100.

Chart 1. Imports as a percent of new supply and exports as a percent of product shipments by major manufacturing group, 1972 and 1979

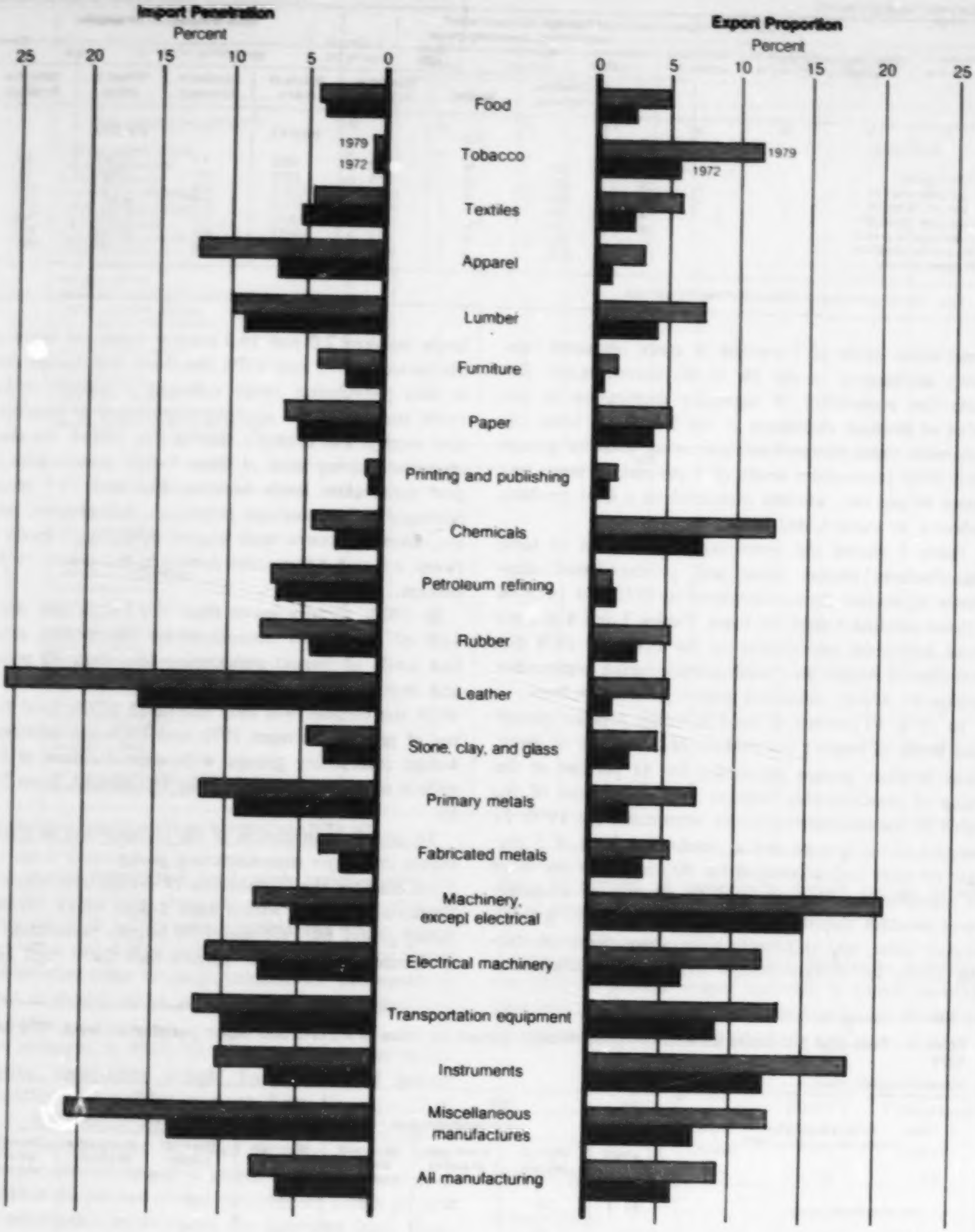

Table 3. Distribution of 4-digit SIC-based manufacturing import commodity groups and value of imports, by import penetration level, 1972 and 1979

[Cumulative frequency in percent]

Import penetration level in 1972 or 1979	Four-digit SIC-based import manufacturing commodity groups				Value of imports for consumption			
	1972		1979		1972		1979	
	Number	Cumulative frequency	Number	Cumulative frequency	Millions of dollars	Cumulative frequency	Millions of dollars	Cumulative frequency
All SIC groups	318	—	318	—	$45,219.3	—	$136,598.4	—
Under 1 percent	69	21.7	58	18.2	478.2	1.1	1,184.0	0.9
1 and under 2 percent	38	33.7	28	27.0	809.9	2.9	1,622.7	2.1
2 and under 5 percent	84	60.1	63	46.9	7,527.5	19.5	11,236.9	10.3
5 and under 10 percent	58	78.3	71	69.2	12,751.2	47.7	38,651.2	38.6
10 and under 20 percent	36	89.6	51	85.2	13,655.0	77.9	50,672.2	75.8
20 and under 50 percent	27	98.1	39	97.5	6,936.8	93.2	23,564.6	93.1
50 percent and over	6	100.0	8	100.0	3,060.7	100.0	9,464.8	100.0

NOTE: Due to rounding, sum of individual items may not equal total.

penetration levels of 5 percent or more remained relatively unchanged, in the 58- to 66-percent range. Despite the probability of extensive duplication in the value of product shipments at the 2-digit SIC level, the shipments value share-of-manufacturing total for groups with 1979 penetration levels of 5 percent or more was about 60 percent, whether measured on a final product, industry, or value-added basis.

Table 2 shows the percentage distribution of total manufactures import value and product-based shipments by import penetration level in 1972 and 1979 on a more detailed 4-digit SIC basis. Tables 3 and 4 present some additional information on the 1972 and 1979 distribution of 4-digit SIC-based manufacturing commodity groups by import value and import penetration level.

In 1972, 40 percent of the 318 4-digit product groups had levels of import penetration of 5 percent or more; these product groups accounted for 81 percent of the value of manufactures imports and 37 percent of the value of manufactures product shipments. By 1979, 53 percent of the groups had a penetration level of 5 percent or more and accounted for 90 percent of the value of manufactures imports and 56 percent of manufactures product shipments. While the number of groups, import value, and shipments value share-of-manufacturing totals for 4-digit groups with import penetration levels between 2.0 and 19.9 percent remained fairly stable between 1972 and 1979, the share distribution within this penetration range reflected a general upward trend because of the growing importance of imports in new supply. For example, during this period, the share-of-manufacturing total of those 4-digit groups with import penetration levels between 10.0 and 19.9 percent increased 4.7 percentage points to 16.0 percent, while the share of groups with import penetration levels between 2.0 and 4.9 percent decreased 6.6 points to 19.8 percent.

In 1972, slightly more than one-fourth (86 out of 318) of the 4-digit manufacturing commodity groups had levels of import penetration less than 10 percent and import values under $10 million. (See table 4.) By 1979, the number was only one-ninth of the total number of groups. Between 1972 and 1979, the number of 4-digit commodity groups with import values of $500 million or more increased about 350 percent, from 13 to 58.

To permit examination of the composition of changes within the major manufacturing groups over time, table 5 summarizes the distribution of 4-digit manufacturing commodity groups within each 2-digit major manufacturing group, by 1972 and 1979 import penetration level. Perusal of this table reveals that the 2-digit major

Table 4. Four-digit SIC-based manufacturing commodity groups, by value of imports and import penetration level, 1972 and 1979

[Number of 4-digit SIC groups]

Value of imports for consumption in 1972 or 1979	1972				1979			
	Number of SIC groups	Import penetration level			Number of SIC groups	Import penetration level		
		Under 10 percent	10 and under 20 percent	20 percent and over		Under 10 percent	10 and under 20 percent	20 percent and over
Total, all commodity groups	318	249	36	33	318	220	51	47
Under $10 million	86	86	—	—	35	35	—	—
$10 million and under $50 million	91	77	8	6	79	74	4	1
$50 million and under $500 million	129	82	24	22	146	88	32	26
$500 million and over	13	4	4	5	58	23	15	20

Table 5. Distribution of 4-digit SIC-based manufacturing commodity groups, by import penetration level and 2-digit parent SIC, 1972 and 1979

[Number of 4-digit SIC-based groups]

SIC Code	Commodity group	Number of SIC groups	Imports as a percent of new supply: Under 1 percent	1 and under 2 percent	2 and under 5 percent	5 and under 10 percent	10 and under 20 percent	20 and under 50 percent	50 percent and over
			1972						
	Total, manufactured commodities	318	69	38	84	[1]58	36	27	6
20	Food and kindred products	39	18	6	[1]9	1	1	4	—
21	Tobacco manufactures	3	[1]1	—	1	1	—	—	—
22	Textile mill products	20	4	2	5	[1]4	1	3	1
23	Apparel and related products	21	2	1	8	[1]4	4	2	—
24	Lumber and wood products	10	3	1	2	[1]1	1	2	—
25	Furniture and fixtures	1	—	—	[1]1	—	—	—	—
26	Paper and allied products	9	4	2	1	[1]—	1	1	—
27	Printing and publishing	8	[1]6	—	1	1	—	—	—
28	Chemicals and allied products	26	7	5	[1]9	3	1	1	—
29	Petroleum refining	3	2		—	[1]1	—	—	—
30	Rubber and miscellaneous plastic products	6	—	1	[1]2	2	—	1	—
31	Leather and leather products	11	—	—	2	—	[1]6	3	—
32	Stone, clay, and glass products	23	5	4	[1]3	6	1	3	1
33	Primary metal products	15	3	1	3	[1]3	3	1	1
34	Fabricated metal products	20	7	2	[1]3	7	1	—	—
35	Machinery, except electrical	38	2	5	16	[1]11	2	2	—
36	Electrical machinery	27	2	3	11	[1]6	3	1	1
37	Transportation equipment	11	2	2	1	4	[1]1	—	1
38	Instruments, optical goods, clocks	10	—	2	3	[1]1	3	1	—
39	Miscellaneous manufactured commodities	17	1	1	3	2	[1]7	2	1
			1979						
	Total, manufactured commodities	318	58	28	63	[1]71	51	39	8
20	Food and kindred products	39	17	7	[1]6	4	1	4	—
21	Tobacco manufactures	3	[1]1	—	1	1	—	—	—
22	Textile mill products	20	4	2	[1]4	4	1	4	1
23	Apparel and related products	21	1	1	2	5	[1]7	4	1
24	Lumber and wood products	10	3	—	1	3	[1]1	2	—
25	Furniture and fixtures	1	—	—	[1]1	—	—	—	—
26	Paper and allied products	9	3	2	2	[1]—	1	1	—
27	Printing and publishing	8	5	[1]1	2	—	—	—	—
28	Chemicals and allied products	26	6	6	[1]7	2	4	1	—
29	Petroleum refining	3	—	1	1	[1]1	—	—	—
30	Rubber and miscellaneous plastics products	6	—	—	2	[1]2	1	—	1
31	Leather and leather products	11	—	—	1	—	3	[1]6	1
32	Stone, clay, and glass products	23	4	2	[1]5	8	2	3	1
33	Primary metal products	15	1	1	4	5	[1]1	2	1
34	Fabricated metal products	20	6	1	[1]4	4	5	—	—
35	Machinery, except electrical	38	2	3	7	[1]14	10	2	—
36	Electrical machinery	27	2	1	5	12	[1]3	4	—
37	Transportation equipment	11	2	—	2	5	[1]1	—	1
38	Instruments, optical goods, clocks	10	—	—	4	1	[1]3	2	—
39	Miscellaneous manufactured commodities	17	1	—	2	2	7	[1]4	1

[1] Level of import penetration for the 2-digit SIC-based group in 1972 or 1979.

group import penetration level, while representative for the group as a whole, does not reflect the level of penetration for each 4-digit group within the major group. In addition, the 4-digit industry size, importance (based on shipments value or employment), and propensity to import or export varies greatly within some 2-digit major groups.

For example, in 1979, 53 percent of all 4-digit manufacturing commodity groups had a level of import penetration of 5 percent or more. Sixty percent—12 of 20—of the 2-digit major groups had overall levels of import penetration of 5 percent or more. Two of these 12 major groups (paper and petroleum refining) had fewer than 50 percent of their constituent 4-digit groups with penetration at or above the 5-percent level. Conversely, in one 2-digit major group (stone, clay, and glass) with a penetration level less than 5 percent, more than 50 percent of component 4-digit groups experienced penetration levels of 5 percent or more.

Long-term trends. The following tabulation compares the 1972–79 average annual increases in import penetration with the average levels of penetration for all 4-digit SIC-based manufacturing groups:

	Total groups	*Average annual change:* *Under 1 percentage point*	*1 percentage point or more*
Total groups	318	274	44
Average level:			
Under 15 percent	266	246	20
15 percent or more	52	28	24

As indicated, 44 of the 318 4-digit manufacturing commodity groups had a 1972–79 average annual increase in import penetration of 1 percentage point or more. (See table 6.) Twenty of the 44 groups had a 1972–79 average level of import penetration of less than 15 percent. During this same period, 5 of the 44 groups experienced a rate of growth in export proportion which equaled or exceeded that of import penetration. Fifty-two of the 318 manufacturing commodity groups had a 1972–79 average level of import penetration of 15 percent or more. (See table 7.) In 28 of these 52 groups, import penetration either declined or had a 1972–79 average annual increase of less than 1 percentage point. Of the 52 groups, 15 exported at least 10 percent of their shipments, on average, during this period, indicating a high degree of trade activity in both imports and exports.

If we consider those groups for which either (1) the 1972–79 average annual increase was 1 percentage point or more, or (2) the 1972–79 average level of import penetration was 15 percent or more, we obtain a total of 72 import groups which have recently experienced either a sustained high level of import penetration or substantial increase in import penetration. For brevity, we shall refer to these 72 import groups as "import-sensitive" groups.[10]

Industry employment related to the "import-sensitive" groups is presented in table 8. In many cases, the

Table 6. Four-digit SIC-based manufacturing commodity groups with average annual increases in import penetration of 1 percentage point or more, 1972–79

SIC-based code	Commodity group	Imports as a percent of new supply					Average annual percentage point change, 1972-79
		1972 level	Range, 1972-79		1979 level	Average, 1972-79	
			Low	High			
3021	Footwear, rubber or plastic	33.9	33.9	71.7	69.2	52.5	5.0
2279	Floor coverings, nes, of textile or vegetable materials	30.9	30.9	57.2	57.2	42.1	3.8
2385	Rainwear	20.2	20.2	44.9	40.6	33.4	2.9
3149(part)	Leather ski boots and other leather athletic footwear	31.6	31.6	62.2	51.2	46.7	2.8
3263	Earthenware tableware	51.2	49.2	70.0	70.0	56.7	2.7
3873	Watches, clocks, clockwork operated devices, and parts	21.1	21.1	39.9	39.9	30.0	2.7
2066(part); 2099(part)	Chocolate and cocoa products	11.0	11.0	31.6	29.2	19.1	2.6
3171	Women's handbags and purses	20.6	20.6	38.5	38.5	29.1	2.6
2386	Leather wearing apparel, nes	34.6	33.9	57.7	50.4	43.7	2.3
3911; 3915(part)	Jewelry and cigarette lighters of precious metals	4.2	4.2	20.5	20.5	9.9	2.3
3144; 3149(part)	Women's footwear, except athletic	18.9	18.9	33.5	33.5	24.9	2.1
2271	Floor coverings, textile materials, pile inserted	11.3	11.3	28.0	24.3	19.3	1.9
2342	Corsets and allied garments	5.3	5.3	18.8	18.8	12.1	1.9
3339; 3341(part)	Smelter and refined nonferrous metals, nes	50.0	42.7	62.6	62.6	51.2	[1]1.8
3541	Metal-cutting machine tools, and parts, nes	7.7	7.7	19.5	19.5	12.5	1.7
3553	Woodworking machinery, and parts, nes	7.9	7.9	19.7	19.7	12.9	1.7
3674; 3629(part)	Semiconductors, rectifiers, and rectifying apparatus	11.5	11.5	23.2	23.2	19.1	1.7
2371	Fur wearing apparel, and fur articles, nes	3.7	3.7	15.1	15.1	8.9	[1]1.6
3313	Electrometallurgical products	19.7	19.7	36.3	31.1	29.7	1.6
3944	Games, toys, and children's vehicles, except dolls	11.2	11.1	22.2	22.2	14.6	1.6
2381; 2259	Gloves, except sports, leather, or fur gloves	13.8	12.7	24.1	24.1	17.4	1.5
3131	Leather cut to shapes for footwear, leather shoelaces	2.2	2.2	12.9	12.9	6.8	1.5
2321; 2322; 2331(part); 2361(part); 2253(part); 2254(part)	Male shirts, nightwear, and underwear; and female and infants' knit shirts	10.7	10.7	20.6	20.6	14.6	1.4
3676	Resistors for electronic applications	6.2	6.2	16.3	16.3	10.8	[1]1.4
3161	Luggage of leather, textile materials, plastics	15.4	12.6	25.0	24.4	18.5	1.3
3253	Ceramic floor and wall tile	22.9	16.7	32.2	32.2	25.2	1.3
3333; 3341(part)	Smelter and refined zinc	28.5	28.5	43.2	37.4	37.4	1.3
3151	Gloves, leather	22.3	18.3	31.0	31.0	23.0	1.2
3851	Ophthalmic goods and parts, nes	12.4	12.4	20.5	20.5	16.6	1.2
3942	Dolls and stuffed toy animals	21.8	17.5	30.1	30.1	22.7	1.2
2121	Cigars and cheroots	2.3	2.3	9.7	9.7	5.8	1.1
2331(part); 2335; 2361(part)	Women's, girls', and infants' dresses, blouses, and shirts, except knit shirts	4.2	4.1	12.0	12.0	6.9	1.1
2387(part)	Leather apparel belts, with or without buckles	4.8	4.8	12.3	12.3	7.9	1.1
2429	Wood shingles, cooperage stock, and excelsior	26.6	19.3	34.2	34.1	28.2	1.1
2492	Wood particleboard, whether or not face finished	0.6	0.3	8.5	8.5	3.4	1.1
3547	Metal rolling mills, and parts, nes	4.0	3.4	11.4	11.4	5.5	1.1
3675; 3629(part)	Electrical capacitors, fixed or variable	9.6	9.6	17.2	17.2	14.0	[1]1.1
2311; 2329(part)	Men's or boys' suits and coats, except raincoats	6.1	6.1	13.1	13.1	9.8	1.0
2337; 2363	Women's, girls', and infants' coats, suits, and skirts	6.6	6.1	13.7	13.7	9.0	1.0
3269	Ceramic articles, nes	33.7	33.7	45.7	40.6	38.9	1.0
3554	Pulp and paper machinery, and parts, nes	12.6	10.1	19.7	19.7	14.2	1.0
3651	Radio and television receiving sets, phonographs, and audio equipment, nes	34.9	33.3	44.3	42.1	38.7	[1]1.0
3961	Costume jewelry and novelties, except precious metal	10.4	10.4	17.8	17.8	13.6	1.0
3964	Needles, pins, zippers, and similar notions	9.1	9.1	16.3	16.3	12.5	1.0

[1] The 1972-79 average annual percentage point change in export proportion for this group is equal to or exceeds the 1972-79 average annual percentage point change in import penetration.

nes = not elsewhere specified.

industry employment series are not that well matched to the import groups. The industry coverage may be broader or narrower than that implied by the import product group; some industry employment series are related to more than one import group. Given these and other limitations which are discussed in the appendix, the employment coverage of the "import-sensitive" groups presented in table 8 should be considered only as approximate.

Fifty-one industry employment series in table 8 relate

Table 7. Four-digit SIC-based manufacturing commodity groups with average levels of import penetration of 15 percent or more, 1972–79

SIC-based code	Commodity group	Imports as a percent of new supply					Average annual percentage point change, 1972–79
		1972 level	Range, 1972–79		1979 level	Average, 1972–79	
			Low	High			
3915(part)	Jewelers' findings and materials, and lapidary work	68.9	68.9	75.6	72.3	[1]72.4	0.5
3263	Earthenware tableware	51.2	49.2	70.0	70.0	56.7	2.7
3751	Motorcycles, bicycles, and parts, nes	65.1	49.8	65.1	52.4	55.6	–1.8
2299	Textile mill products, nes	59.0	39.6	63.7	46.2	[1]54.0	–1.8
3021	Footwear, rubber or plastic	33.9	33.9	71.7	69.2	52.5	5.0
3339; 3341(part)	Smelter and refined nonferrous metals, nes	50.0	42.7	62.6	62.6	[1]51.2	1.8
3636	Sewing machines, and parts, nes	50.9	41.3	50.9	41.3	[1]46.9	–1.4
3149(part)	Leather ski boots and other leather athletic footwear	31.6	31.6	62.2	51.2	46.7	2.8
3962	Artificial trees, flowers, dried plants, and grasses	41.9	37.2	54.2	45.8	45.9	0.6
2386	Leather wearing apparel, nes	34.6	33.9	57.7	50.4	43.7	2.3
2279	Floor coverings, nes, of textile or vegetable materials	30.9	30.9	57.2	57.2	42.1	3.8
3262	China tableware	41.0	36.8	44.5	41.0	40.6	0.0
3574(part)	Calculating and accounting machines, excluding parts	40.1	33.6	46.1	40.6	[1]40.4	0.1
3269	Ceramic articles, nes	33.7	33.7	45.7	40.6	38.9	1.0
3651	Radio and television receiving sets, phonographs, and audio equipment, nes	34.9	33.3	44.3	42.1	[1]38.7	1.0
3333; 3341(part)	Smelter and refined zinc	28.5	28.5	43.2	37.4	37.4	1.3
2385	Rainwear	20.2	20.2	44.9	40.6	33.4	2.9
2611	Pulp mill products	30.4	30.3	32.3	32.3	[1]31.4	0.3
3552	Textile machinery, and parts, nes	36.6	26.1	37.3	33.2	[1]31.3	–0.5
2435	Hardwood plywood and veneer	31.3	27.9	33.1	33.1	31.0	0.3
3873	Watches, clocks, clockwork operated devices, and parts	21.1	21.1	39.9	39.9	30.0	2.7
3313	Electrometallurgical products	19.7	19.7	36.3	31.1	29.7	1.6
2292	Lace goods, nes	21.7	21.7	35.1	27.7	[1]29.6	0.9
3171	Women's handbags and purses	20.6	20.6	38.5	38.5	29.1	2.6
2429	Wood shingles, cooperage stock, and excelsior	26.6	19.3	34.2	34.1	28.2	1.1
2298	Cordage	21.5	20.4	40.3	23.4	25.5	0.3
2085	Distilled, rectified, and blended liquors, except brandy	24.9	24.3	26.4	24.3	25.3	–0.1
3253	Ceramic floor and wall tile	22.9	16.7	32.2	32.2	25.2	1.3
3144; 3149(part)	Women's footwear, except athletic	18.9	18.9	33.5	33.5	24.9	2.1
2084	Wines, brandy, and brandy spirits	21.3	18.5	28.9	26.2	23.2	0.7
3151	Gloves, leather	22.3	18.3	31.0	31.0	23.0	1.2
3942	Dolls and stuffed toy animals	21.8	17.5	30.1	30.1	22.7	1.2
2091	Canned and cured fish and seafoods	24.8	20.7	25.4	21.0	[1]22.3	–0.5
2833	Medicinals and botanicals	22.0	20.2	24.6	21.7	[1]21.7	0.0
2061-3	Cane or beet sugar, syrup, and molasses; beet pulp	22.5	16.1	24.3	18.5	21.5	–0.6
2271	Floor coverings, textile materials, pile inserted	11.3	11.3	28.0	24.3	19.3	1.9
2066(part); 2099(part)	Chocolate and cocoa products	11.0	11.0	31.6	29.2	19.1	2.6
3674; 3629(part)	Semiconductors, rectifiers, and rectifying apparatus	11.5	11.5	23.2	23.2	[1]19.1	1.7
3914	Silverware, plated ware, and stainless steel ware	14.9	14.9	21.6	17.4	18.7	0.4
3161	Luggage of leather, textile materials, plastics	15.4	12.6	25.0	24.4	18.5	1.3
3699(part); 3629(part)	Electrical articles and electrical parts of articles	17.5	14.9	20.3	20.3	[1]18.3	0.4
2381; 2259	Gloves, except sports, leather, or fur gloves	13.8	12.7	24.1	24.1	17.4	1.5
2369, 2339; 2329(part); 2387(part); 2253(part)	Outerwear, nes, of textile materials	16.3	14.0	20.8	20.0	17.3	0.5
3143; 3149(part)	Men's footwear, except athletic	14.7	14.7	20.4	20.4	17.2	0.8
3572	Typewriters and parts, nes	16.3	14.8	19.5	18.5	17.1	0.3
3832	Optical instruments and lenses, and parts, nes	17.1	14.3	19.5	15.9	[1]17.1	–0.2
3851	Ophthalmic goods and parts, nes	12.4	12.4	20.5	20.5	16.6	1.2
3949	Sporting and athletic goods and parts, nes	13.0	12.8	19.1	18.6	16.2	0.8
3711,3,6; 3799(part)	Motor vehicles and passenger car, truck, and bus bodies	13.6	13.4	18.3	18.3	16.0	0.7
3811(part)	Surveying and drafting instruments, balances, nes; measuring equipment, nes	12.5	12.5	22.0	19.0	[1]15.5	0.9
3172	Flat goods of leather and other materials	14.0	10.7	20.1	20.1	15.4	0.9
2421	Lumber and other sawmill and planing mill products, except dimension hardwood	16.3	11.2	17.5	16.9	15.1	0.1

[1] The 1972–79 average level of export proportion for this group exceeds 10 percent.

nes = not elsewhere specified.

NOTE: This table includes all 4-digit SIC-based manufacturing commodity groups with imports accounting for 20 percent or more of new supply in 1979, with the exception of the following groups, which all had a 1972–79 average level of import penetration less than 15 percent: SIC 2321-2, 2253(part), 2254 (part), 2331(part), 2361(part) — Male shirts, nightwear, and underwear, and female and infants' knit shirts (20.6 percent); SIC 3911, 3915(part) — Jewelry, of precious metal or stones (20.5 percent); and SIC 3944 — Games, toys, and children's vehicles (22.2 percent).

Table 8. Employment in domestic industries which produce products similar to those in import-sensitive[1] product groups, 1972, 1979, and 1981

SIC code	Industry	Annual average employment (in thousands)			Annual average growth rate (in percent)	
		1972	1979	1981	1972-79	1972-81
	Food and kindred products					
2061-3	Cane and beet sugar	37.1	30.7	31.7	-2.7	-1.7
2066,7	Chocolate and cocoa products; chewing gum[2]	20.7	20.5	19.7	-0.1	-0.5
2084	Wines, brandy, and brandy spirits[2]	10.5	13.2	14.4	3.3	3.5
2085	Distilled liquors, except brandy[2]	22.8	19.0	17.4	-2.6	-3.0
2091	Canned and cured seafoods[2]	19.9	20.1	18.4	0.1	-0.9
	Tobacco manufactures					
2121	Cigars[2]	14.7	8.0	7.0	-8.3	-7.9
	Textile mill products					
2253[3]	Knit outerwear mills	77.6	70.5	71.5	-1.4	-0.9
2254	Knit underwear mills	34.4	32.0	30.2	-1.0	-1.4
2258,9	Knit fabric and knitting mills, nec[2]	28.6	25.7	21.5	-1.5	-3.1
2271,2,9[3]	Floor covering mills	62.2	60.5	52.6	-0.4	-1.8
2291-4,7,9[3]	Other textile goods[2]	36.3	36.8	35.6	0.2	-0.2
2298	Cordage and twine[2]	10.9	10.3	9.1	-0.8	-2.0
	Apparel and other textile products					
2311	Men's and boys' suits and coats	112.8	81.2	76.5	-4.6	-4.2
2321	Men's and boys' shirts and nightwear	118.0	102.8	97.4	-2.0	-2.1
2322	Men's and boys' underwear[2]	20.2	16.2	14.4	-3.1	-3.7
2329[3]	Men's and boys' clothing, nec[2]	57.3	59.5	58.4	0.5	0.2
2331[3]	Women's and misses' blouses and waists	46.0	64.0	62.4	4.8	3.4
2335	Women's and misses' dresses	197.4	156.5	137.1	-3.3	-4.0
2337	Women's and misses' suits and coats	73.4	64.8	61.4	-1.8	-2.0
2339	Women's and misses' outerwear, nec	105.5	149.4	147.1	5.1	3.8
2342	Brassieres and allied garments	31.3	18.7	18.3	-7.1	-5.8
2361[3]	Children's dresses and blouses	34.0	27.5	27.2	-3.0	-2.4
2363	Children's coats and suits[2]	9.7	7.4	6.4	-3.8	-4.5
2369	Children's outerwear[2]	29.8	30.8	30.2	0.5	0.1
2371	Fur goods[4]	5.7	4.4	4.0	-3.6	-3.9
2381	Fabric dress and work gloves[2]	14.0	14.5	11.1	0.5	-2.5
2385	Waterproof outergarments[2]	17.8	12.2	11.8	-5.3	-4.5
2386,7,9[3]	Apparel and accessories, nec[2]	21.5	20.1	24.3	-1.0	1.4
	Lumber and wood products					
2421	Sawmills and planing mills, general	182.0	196.4	171.5	1.1	-0.7
2429	Special product sawmills, nec[2]	6.1	6.5	4.9	0.9	-2.4
2435	Hardwood veneer and plywood	30.9	27.9	24.8	-1.4	-2.4
2492,9	Particleboard and wood products, nec[2]	65.0	70.8	67.7	1.2	0.5
	Paper and allied products					
2611	Pulp mills[2]	13.7	16.1	17.2	2.3	2.6
	Chemicals and allied products					
2833	Medicinals and botanicals[2]	14.8	17.2	18.6	2.2	2.6
	Rubber and miscellaneous plastics products					
3021	Rubber and plastic footwear	28.7	22.7	22.2	-3.3	-2.8
	Leather and leather products					
3131	Boot and shoe cut stock and findings[2]	13.4	11.7	11.2	-1.9	-2.0
3143	Men's footwear, except athletic	63.8	57.9	57.2	-1.4	-1.2
3144	Women's footwear, except athletic	86.6	56.3	52.9	-5.3	-5.3
3149[3]	Footwear, except rubber, nec[2]	32.3	23.5	23.0	-4.4	-3.7
3161	Luggage	17.3	17.7	15.0	0.3	-1.6
3171	Women's handbags and purses[2]	19.9	18.5	17.5	-1.0	-1.4
3172	Personal leather goods, nec[2]	13.0	14.3	12.6	1.4	-0.3
3151,3199	Other leather products, nec[2]	14.0	14.5	13.6	0.5	-0.3
	Stone, clay, and glass products					
3253,9	Other structural clay products[2]	18.8	15.6	13.2	-2.6	-3.9
3262,3[3]	Vitreous china and earthenware food utensils[2]	10.4	9.7	9.4	-1.0	-1.1
3269	Pottery products, nec[2]	12.0	14.6	12.5	2.8	0.5
	Primary metal industries					
3313	Electrometallurgical products[2]	15.1	15.0	13.1	-0.1	-1.6
3332,3	Primary lead and zinc[2]	9.1	9.5	7.7	0.6	-1.8
3339	Primary nonferrous metals, nec[2]	8.2	10.7	11.8	3.9	4.1
3341[3]	Secondary nonferrous metals[2]	17.7	24.8	23.7	4.9	3.3
	Machinery, except electrical					
3541	Machine tools, metal cutting types	58.4	77.4	79.5	4.1	3.5
3547	Rolling mill machinery[2]	11.8	11.6	10.1	-0.2	-1.7
3552	Textile machinery	35.5	26.9	26.2	-3.9	-3.3
3553	Woodworking machinery[2]	10.8	13.6	11.7	3.3	0.9
3554	Paper industries machinery[2]	14.8	18.9	19.6	3.6	3.2
3572	Typewriters[5]	45.2	36.2	38.3	-3.1	-1.8
3574	Calculating and accounting machines[5]					
	Electric and electronic equipment					
3629[3]	Electrical industrial apparatus, nec[2]	11.4	14.5	12.2	3.5	0.8
3635,6,9	Other household appliances[2]	35.1	36.9	31.8	0.7	-1.1
3651	Radio and TV receiving sets	114.5	87.5	82.2	-3.8	-3.6
3674	Semiconductors and related devices	115.2	201.1	224.6	8.3	7.7
3675	Electronic capacitors[2]	19.2	26.8	27.0	4.9	3.9
3676,8	Electronic resistors and connectors[2]	10.5	22.1	19.3	11.2	7.0
3699	Other miscellaneous electrical equipment[2]	14.0	14.7	14.0	0.7	0.0
	Transportation equipment					
3711	Motor vehicles and car bodies	415.2	463.0	352.4	1.6	-1.8
3713	Truck and bus bodies	46.1	46.1	37.1	0.0	-2.4
3751	Motorcycles, bicycles, and parts[2]	18.2	19.5	16.8	1.0	-0.9
	Instruments and related products					
3811	Engineering and scientific instruments	64.5	72.4	78.5	1.7	2.2
3832	Optical instruments and lenses	17.6	31.6	33.4	8.7	7.4
3851	Ophthalmic goods	37.1	45.1	40.7	2.8	1.0
3873	Watches, clocks, and watchcases	29.6	27.7	20.1	-0.9	-4.2
	Miscellaneous manufacturing industries					
3911	Jewelry, precious metal	33.9	40.0	37.3	2.4	1.1
3914	Silverware and plated ware[2]	11.2	11.9	11.7	0.9	0.5
3915[3]	Jewelers' materials and lapidary work[2]	7.2	8.9	7.8	3.1	0.9
3942,4[3]	Dolls, games, toys, and children's vehicles	69.7	59.7	59.7	-2.2	-1.7
3949	Sporting and athletic goods	56.7	61.5	57.7	1.2	0.2
3961	Costume jewelry	27.3	31.1	24.0	1.9	-1.4
3962,3	Artificial flowers and buttons[2]	11.0	8.6	8.5	-3.5	-2.8
3964	Needles, pins, and fasteners[2]	21.7	18.6	13.9	-2.2	-4.8

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[1] Import commodity groups for which either (1) the 1972-79 average annual increase in import penetration was 1 percentage point or more, or (2) the 1972-79 average level of import penetration was 15 percent or more.

[2] Unpublished establishment survey data. Employment data are of good quality, but have not been published due to an inadequate sample for publication of non-employment data types.

[3] Industry employment series is related to more than one import-sensitive product group.

[4] Unpublished establishment survey data. Employment data are of low quality and have not been published due to an inadequate sample for publication of any data types.

[5] Unpublished establishment survey data. Employment data represent a combination of unpublished confidential series to avoid disclosure of any individual industry estimates.

nec = not elsewhere classified.

NOTE: There are a few industry employment series which have not been included because either data are not available for 1972 or industry coverage of the employment series is too broad to be matched with the import-sensitive product group.

SOURCE: Bureau of Labor Statistics, Payroll Employment Program, Establishment Survey, March 1981 benchmark.

to the 44 import commodity groups in table 6 with 1972–79 average annual increases in import penetration of 1 percentage point or more; 28 industry employment series relate to the 28 import groups in table 7 that had 1972–79 average annual increases in import penetration of less than 1 percentage point, but an average level of import penetration of 15 percent or more.

Of the 79 employment series in table 8, 38 show a declining 1972–79 average annual rate of change; 51 show a declining rate for the period 1972–81. (The larger number of declines for the 1972–81 period may be due to the downturn in the business cycle during 1980.) Twenty-two of the 38 industries with 1972–79 employment declines and 27 of the 51 with 1972–81 employment declines are in the textile, apparel, and leather goods groups. During the period 1972–79, total manufacturing employment grew at an average annual rate of 1.4 percent; for the period 1972–81, the growth rate was 0.6 percent. Further analysis would be required to determine whether imports were the major factor in the long-term employment decline in these 38 (or 51) industries. However, the foregoing does illustrate how analysis of import penetration and change in industry employment might be used as a screening tool to focus on potential import problems which an industry might be facing.

Usefulness of the measures

A review of some of the major methodological and measurement problems in relating trade data to domestic output and industry employment is presented in the appendix. Given these problems, the absolute values of the measures of import penetration and export proportion are of limited use, for example, in inter-industry comparisons. However, they are valid for the study of direction and magnitude of change over time, if all other relevant factors remain unaltered (for example, no structural or reporting changes).

Changes in import penetration are usually more important than levels when examining for possible employment displacement in a particular industry. However, it should be noted that a rapid rise in import penetration is not necessarily undesirable, because it might reflect a greater product specialization within an industry. This might involve higher levels of both imports and exports, reflecting greater net competitiveness. For this reason, measures of import penetration should be examined in conjunction with measures of export proportion as well as other indicators.

The BLS measures of import penetration have been developed on a 4-digit SIC basis because domestic employment measures are available only on that basis. However, by confining import penetration measures to the 4-digit SIC level, which often represents combinations of broad product groups, we may overlook some potential adjustment problems if these groups contain a mixture of very competitive and less competitive products.

AS MORE COMPLETE DATA become available, it may be possible to further refine and improve the quality of the measures which BLS has developed for use in its trade monitoring program. However, the interpretation of import penetration measures may be affected by factors in addition to the data limitations indicated above. For example, the stage of the business cycle, as reflected in U.S. and world demand, will help determine the level and composition of both imports and exports. Shifts in consumer demand due to changing tastes or product substitution, strikes, the weather, and new government regulations are other exogenous factors. Long-term secular changes in capital investment, technology, and labor force characteristics also are influential. ☐

FOOTNOTES

[1] Commodity classification is based upon the *Standard Industrial Classification Manual: 1972* (Washington, U.S. Government Printing Office), and its 1977 Supplement. See the appendix for a more detailed description of the methods used to classify imports, exports, and domestic output.

[2] While BLS has received no appropriation for its role, it has devoted some resources from other programs to trade monitoring. The Census Bureau has received some limited funding for its role which has resulted in improved comparability between reported domestic production, import, and export commodity data, as well as more timely and detailed reporting of domestic production data.

[3] An alternative measure might be based upon a production or output basis, that is, imports relative to shipments less net inventories and net exports. In most cases, inventory change data are not generally available for adjusting product shipments data. If this measure were based over several years, the year-to-year fluctuations in inventories over the business cycle probably would not create severe distortions and would likely parallel analysis based on a domestic demand or apparent consumption basis.

[4] See, "Origin of Exports of Manufacturing Establishments," in *1976 Annual Survey of Manufactures*, M76-AS-8 (Bureau of the Census, 1978).

[5] A fifth measure, the ratio of imports to U.S. product shipments, M/S, is not discussed here. This ratio is equivalent to the ratio of the relative shares of new supply of imports-to-shipments, that is, $[M/(M+S)]/[S/(M+S)]$. Algebraically, it can be derived from ratio (b) as follows: let $M/(M+S) = B$, then $M/S = B/(1-B)$. Note that B may take on any value between 0 and 1; (M/S) is nonnegative but not necessarily bounded from above.

[6] A solution to this problem would involve distinguishing "directly competitive" imports (primarily finished manufactures) from "supporting" imports such as raw materials (for example, petroleum, lumber, certain mineral and agricultural products, and semi-finished manufactures), and analyzing the supply and product availability of domestically produced substitutes. Substitution of domestic goods for foreign goods and resources will depend on both consumer tastes and industry technology. On the consumer side, income and price (cross) elasticities of demand, and on the producer side, capacity utilization,

productivity, and the possibility of resource bottlenecks, will influence the adjustment (both in the short run and the long run) to replacement of imported commodities with domestically produced goods.

[7] The value-based measures presented in this article should be considered as approximations intended for broad industrial monitoring. Further adjustments would need to be made for a detailed analysis of a specific sector. These might include adjustments in import value to make it more equivalent to a domestic valuation, and attempting to account for different cost and wage structures among countries, the changing composition of the product basket, point of sale, and timing of sale.

[8] BLS produces U.S. import and export price indexes which are based on the nomenclature of the Standard International Trade Classification (SITC) System of the United Nations, 1974 Revision. Monthly net transaction price data are collected by BLS for approximately 14,500 products from more than 6,000 companies (importers and exporters). The product areas surveyed for the import price indexes account for about 96 percent of the value of U.S. imports and cover all imported commodities, excluding chemicals. The product areas surveyed for the export price indexes account for approximately 64 percent of the value of all U.S. exports and include machinery and transportation equipment, and selected categories of chemicals, intermediate products, crude materials, and food.

[9] Import data are BLS SIC-based aggregations of Census Bureau IM-145 monthly import tapes. Export data are from the Census Bureau's EA-675, U.S. Exports of Domestic and Foreign Merchandise, SIC Division by SIC-Based 2-Digit, 3-Digit, and 4-Digit Product Code.

[10] It should not be concluded that the remaining 246 groups are insensitive to import changes. The choice of average annual increase of 1 percentage point and average level of 15 percent for the period is completely arbitrary and made only for the purpose of reducing the number of groups considered for analysis. The selection criteria could be adjusted according to any desired level of discrimination.

APPENDIX: Data limitations

There are several conceptual and measurement difficulties in comparing domestic output and employment data to commodity trade data. These problems vary with the product or industry considered, the definition of the industrial market, and the scope of the measure. Because each of the factors enumerated below affects comparability among trade and domestic data to some degree, the BLS measures of import penetration and any related employment coverage for import groups should be viewed only as approximations.

Market mismatches. For the analysis of trade-related employment effects, it would seem reasonable to consider the output at the industrial level (4-digit SIC), because workers usually are mobile between establishments which produce similar products. However, for any meaningful analysis, there must be a defined market with distinct products, the definition depending, in part, upon the degree of vertical integration within the industry. In the above article, markets were defined at the industry level (4-digit SIC), but the pertinent market could be broader in some cases (for example, steel—SIC 331) or narrower (as for canned mushrooms, SIC 20333, within canned vegetables, SIC 2033). This is an important caveat, because the degree of import penetration calculated will vary with the definition of the 'industry' (2- , 3- , or 4-digit) or product category (5- or 7-digit) used.

Commodity versus industry base. Data on U.S. manufacturers' shipments are available on two bases: 1) industry shipments—total shipments of firms classified in a given industry, which include other secondary products, and 2) product-class shipments—total shipments of the primary products of the industry, which include sales of the same products made by firms classified in other industries. Because international trade classifications are commodity-based, it was decided to match imports and exports to domestic sales of a commodity on a product-class basis.

A product class is a group of individual products of an industry. It is designated by a 5-digit code, the first four digits indicating the SIC (industry), and the fifth, the specific group of products. In some cases, a 5-digit product class is, by definition, limited to products of a particular manufacturing process (for example, ferrous wire made in wiredrawing plants, SIC 33151, as distinguished from ferrous wire not produced by wiredrawers, SIC 34961). Accordingly, the output of all 5-digit classes with similar end products must be combined before comparisons are made with import levels, because the import classifications do not make these differentiations.

Because employment data are available only on an industry basis, we must consider the commodity-to-industry mismatch when relating product-based measures of import penetration or export proportion to industry employment. Two available measures are useful in evaluating this problem. The first is the specialization ratio, defined as primary product output within the industry divided by total industry output (primary and secondary). The second measure, the coverage ratio, is the primary product output produced within an industry divided by total output of the primary product by all industries. If these two measures are fairly constant over time, then the industry-to-commodity mismatch should not present a major problem when changes in commodity-based import penetration or export proportion are compared with changes in industry-based measures, such as employment.

Data duplication. In computing measures of import penetration at the 4-digit SIC level, domestic product-based output must be aggregated and matched to imports. Aggregation of 5-digit product-class shipments to a 4-digit level will result in duplication to the extent that these commodities are used as materials in other commodities produced within the industry considered. (There are no similar problems of duplication in the import data, because only final products are recorded.) Most domestic output classes covering contract and commission work have been excluded to minimize duplication in the valuation of output. However, in lieu of an appropriate general measure of duplication, such as the percentage of output currently accounted for by intraindustry sales, it can only be noted that, if there is substantial duplication in the measurement of domestic output, the corresponding measure of import penetration will be understated.

Comparability of commodity classes. The available trade data are not ideal for the calculation of import penetration ratios or export proportions. Limitations include problems of valuation, timing, coverage, and comparability with classifications for domestic output.

Perhaps the most critical problem is the incongruity among classifications used for reporting domestic production, U.S. imports, and U.S. exports. Reported domestic production (as well as employment) is based on the classification of domestic economic activity of establishments according to the *Standard Industrial Classification* (SIC) *Manual,* 1972 edition. U.S. imports are reported on the basis of more than 10,000 legal tariff commodity classifications, designed for the collection of duties, in the *Tariff Schedules of the United States Annotated* (TSUSA). Finally, U.S. exports are reported on the basis of the Commerce Department's more than 4,000 Statistical Classifications of U.S. Exports (Schedule B).

The three classification structures (SIC, TSUSA, Schedule B) were designed for different uses. The SIC nomenclature is organized by stage of processing (for example, raw materials, manufactured products, services, and so forth). The origin of production is the establishment primarily responsible for output. In some cases, the method of manufacture or process, or market use, is important for industry classification. On the other hand, the trade classifications are commodity based; that is, they define objective commodity characteristics, material content, operating characteristics, and so forth, which may cross industry lines. In the case of imports, these commodity characteristics are important for the determination of any applicable duty.

For the purpose of relating imports (exports) to output, individual TSUSA (Schedule B) commodity numbers are assigned to a 5-digit SIC-based product class. In cases where the TSUSA (Schedule B) numbers include items which should be classified under two or more SIC-based output codes, an assignment is made to that code under which the principal content of the TSUSA (Schedule B) number appears to belong, if such an assignment will not significantly overcount the SIC classification to which the TSUSA (Schedule B) number is assigned or undercount the other SIC classifications to which it partially belongs. Where it appears that distortions will result from the assignment of an entire TSUSA (Schedule B) number to a single SIC-based output code, the principal SIC-based output classes are combined to form a more comprehensive SIC-based import (export) code, and the pertinent TSUSA (Schedule B) data are assigned to the combination. For the 1972 edition of the SIC, and its 1977 Supplement, there are 452 4-digit SIC-based manufacturing output codes and 347 (409) 4-digit SIC-based manufacturing import (export) codes. As one can see, the concordance between domestic output and either SIC-based imports or exports (and for that matter, even between SIC-based imports and exports) is not perfect.

Under Section 608 of the Trade Act of 1974, the Departments of Commerce and Treasury, along with the International Trade Commission, are working to improve the different classifications used for reporting domestic production, imports, and exports. Since the signing of the Act, significant improvements have been made. A completely new Schedule B classification for exports, structured after the TSUSA numbering scheme for imports, was introduced in 1978. In addition, new and more detailed TSUSA classifications are introduced each year, which in many cases permit better associations with domestic output classifications. But while these improvements in comparability are critical for relating trade to domestic economic activity, they present substantial problems for time-series analysis, because the improvements are often achieved at the cost of breaks in individual classification series. For example, only 318 of the 347 4-digit SIC-based import classifications currently available can be matched to output on a consistent basis for the years 1972–79.

In some cases, it is inappropriate (or impossible) to calculate a measure of import penetration, because comparable import data are not available for certain domestic output classifications (for example, morticians' goods, screw machine products, and so forth). In most cases this is not because these items are not imported, but because the different classification structures used for imports (TSUSA) and output (SIC) do not distinguish product characteristics on the same basis. In some cases, the tariff classifications are not defined precisely enough to permit association of import data with 5-digit detailed domestic output classifications. However, where it is likely that the domestic product class is subsumed in imports at the 4-digit level, it is included in the calculation of the import penetration measure. (For example, products like canned baby foods, SIC 20321, are assumed to be included in the broader import grouping for canned and preserved fruits and vegetables.)

The value of manufactures shipments at the 4-digit commodity level often includes a small amount which is not distributed among the individual 5-digit product classes. When SIC-based import groupings represent combinations of product classes from different 4-digit groups, a share of the undistributed output for the 4-digit output class is allocated to each output product class according to the 5-digit product-class share of the 4-digit total. Because this allocation is an approximation, the value of shipments for the 4-digit import commodity group might be slightly misstated.

Valuation. Differences in the method and point of valuation of imports and exports present major problems in comparisons with domestic output. Output shipments values are sample estimates, subject to error, and usually relate to the point of production. They include interplant transfers and are gross output measures (value added plus cost of materials).

In the above analysis, exports were valued at the point of exportation—seaport, borderpoint, or airport. The export value represents the selling price, or cost if not sold, and includes expenditures for freight, insurance, and other charges to the export point. In addition, the exporter's trade margin above cost boosts the export value in relation to producers' values. Information on the magnitude of this incremental margin is not available on a commodity-by-commodity basis. And, because export values pertain only to direct exports, and not to commodities which are incorporated into other, more finished products and exported in finished form, the relation of exports to shipments for intermediate products (such as steel shapes) is considerably understated.

Beginning in 1974, the Census Bureau began reporting imports on an f.a.s. basis (transaction value, f.o.b. port of exportation) and on a c.i.f. basis (value of the import at the first port of entry), in addition to the previously reported customs value. The customs value, which is used in this article, has been the basic valuation for duty-collection purposes since the inception of the tariff schedules. It usually represents the value in the foreign country and excludes duties, insurance, and other charges. Until recently, customs values did not necessarily represent transaction values. Certain products were valued for customs purposes on the basis of their American Selling Price (ASP), which in most cases was above the actual transaction value. However, under the Customs Valuation Code of the Trade Agreements Act of 1979, the ASP valuation practice is to be phased out and replaced with a transaction-based valuation. As a result, beginning with the compilation of 1982 trade statistics, the Census Bureau is substituting the transaction-based customs value for the f.a.s. value, and discontinuing the compilation of f.a.s. import values.

Of the three alternative import valuations, customs value, f.a.s., and c.i.f., the last would be preferred, because it would reflect the purchase price, freight, insurance, and other charges (except overland charges from Mexico or Canada). To obtain a landed value, customs duties assessed should also be added. This landed value would be the most appropriate measure to use in comparisons with domestic output. Because customs value was used in the above analysis, the [illegible] values understate the landed U.S. market value. However, the Census Bureau has tabulated SIC-based import penetration measures for 1974 using all three valuation bases, finding that in most cases there are no major differences, while in some there might be differences of as much as 2 percentage points.

Both imports and exports exclude low-valued shipments and mail entry items. To the extent these items are important in a product category, the valuation will be understated.

With few exceptions (for example, used tractors, cars, and tires), used or rebuilt commodities are classified in the same import or export group as new merchandise. Import penetration measures will be overstated to the extent that used or rebuilt products are significant in trade, because domestic shipments data usually do not include such commodities.

Differences in labor requirements for imported commodities present a major problem in value comparisons with domestic output when inferences are made about the employment associated with a particular commodity group. A commodity group should be defined with sufficient product detail to ensure homogeneity with regard to labor requirements. But in the foregoing analysis, imports are not differentiated by supplying country, a primary determinate of labor input and costs. Products are assumed to be homogeneous within world industrial sectors, and are distinguished only between those which are imported and those which are produced domestically. Imports are compared with like or similar domestically produced commodities on a dollar-for-dollar basis. While this method is probably more valid for the analysis of the balance of payments, it has severe limitations if such a one-to-one correspondence between output and imports is inferred. Different wage and cost structures in each country will affect current dollar value comparability between domestically produced and imported goods. Furthermore, any estimate of the U.S. labor requirements necessary to produce output equivalent to the imported amount would be affected by differences in the valuation of imports and output.

Productivity and people

A number of economic factors have created a new awareness of the human factor in the productivity equation: inflation, the high cost of money, slow economic growth, high energy costs, and increased foreign competition have all served to broaden our perspective. Although in the past top management has tended to downgrade or minimize the importance of the human factor, there is a new awareness of its significance today. A national opinion survey of leadership in the United States in 1979 revealed that government leaders considered improved employee relations to be one of the principal avenues of productivity improvement. Increasing awareness by the chief executive officers in American industry of this source of productivity will also focus corporate attention on more innovative programs within the workplace.

—JEROME M. ROSOW, ED.
Productivity: Prospects for Growth
(New York, Van Nostrand Reinhold Co.,
1981), p. 256.

How valid are estimates of occupational illness?

While the annual BLS survey measures few chronic, long-latent, or fatal illnesses, estimates derived from other studies can prove statistically flawed and inaccurate

HARVEY J. HILASKI AND CHAO LING WANG

Incidence rates of occupational disease, published each year by the Bureau of Labor Statistics, understate the total impact of the work environment on workers' health.[1] This is so because the statistics virtually exclude chronic types of illnesses, as well as illnesses having a long latent period whose relationship to the job often surfaces only after retirement or death.

Alternative methods of measurement confirm that an undercount exists, but differ concerning its magnitude. This article examines some of the alternative methods of estimating occupational diseases and suggests that a consensus on the adequacy and reliability of the estimates is not likely.

One of the first studies to highlight the scope of occupational disease in this country was a pilot study sponsored by the National Institute for Occupational Safety and Health (NIOSH). Confined to cross-sectional samples of workers in designated small industries in Oregon and Washington, the study was designed to determine the usefulness of a set of medical procedures for diagnosing occupational disease, and to ascertain how much new data on occupational illnesses would be generated by this method. The results of the study, published in 1975, underscored the issue of a large undercount in current occupational illness statistics, primarily those of BLS.[2]

When analysts compared counts of cases of "probable occupational disease" from the pilot study with those from employer logs maintained under regulations of the Occupational Safety and Health Administration (OSHA), and with employer workers' compensation records, they found that nearly 90 percent of the cases (approximately 400) uncovered in the pilot study were not listed in employers' files.[3] In effect, the findings indicated that the procedures normally followed by employers in recording and reporting occupational illnesses in fulfillment of legal requirements result in a gross underestimate of occupational disease in the United States.

It should not be surprising that most of the "probable occupational disease" cases found in the pilot study were not included in employer records. Consider, for example, that of the 346 cases discovered in the study, hearing loss was most prominent, amounting to about 28 percent. This condition usually has a gradual onset, with the result that the worker may be unaware of any defect in hearing unless he or she undergoes a hearing test such as that administered in the study. Moreover, hearing loss is often part of the aging process; without baseline data and subsequent periodic testing of the work environment and resulting effects on the worker, the occupational relationship can be seriously challenged.[4]

The NIOSH study results may be questioned in several aspects, including possible bias inherent in the special procedures used to assess the health status of surveyed workers. However, the design is a feasible method for

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dealing with the detection of occupational diseases which are not readily apparent. Unlike the BLS annual survey, which measures the incidence of occupational disease, or the number of new cases recognized by employers as occupational in keeping with regulatory criteria, the NIOSH study measured the prevalence of occupational illness, or the level of occupational illnesses existing at a given time. For some purposes, prevalence is the more meaningful measure, in that it reflects the universe of persons with disease whose medical and economic needs may warrant special attention. However, high prevalence does not necessarily indicate high risk; instead, it may reflect an increase in survival, perhaps due to improved medical care. Conversely, low prevalence may reflect either a rapidly fatal process or cure of disease. The incidence measure is better adapted to keep a "running tab" on the health effects of workplace hazards, except for that component of occupational disease which is chronic in nature or of long latency.

Indirect estimates

Other studies and reports on occupational health problems have also pointed to an undercount in current illness estimates, but they are largely based on indirect evidence. The lack of reliable measures of occupational illnesses nationally has necessitated use and manipulation of surrogate data from epidemiologic or other studies to produce rather specific estimates of occupational diseases. On the basis of such data, a 1979 Labor Department report to Congress claimed that a conservative estimate of the prevalence of byssinosis among nearly 560,000 workers exposed to cotton dust at current levels was 83,610.[5] In 1980, another congressional report by the Department (hereinafter referred to as the Interim Report) provided several estimates of respiratory disease prevalence or deaths from worker exposure to asbestos, silica, beryllium, cadmium, chromium, arsenic, nickel, coal tar products, and diisocyanates.[6] Among other things, the Interim Report stated that, of 1 million workers currently exposed to silica, an estimated 59,000 will develop "some level" of silicosis; it also predicted 43,230 lung impairments as a result of exposure to diisocyanates, chemicals used to produce plastic products.

Much like the NIOSH study results, these estimates suggest a substantial undercount in the regularly published national statistics, which for 1980 showed 2,200 cases of all "dust diseases of the lungs."[7] (The BLS survey does not ask employers to specify recognized occupational illnesses such as asbestosis, byssinosis, and silicosis and thus provides no direct estimates of the incidence of these diseases.) It seems worthwhile, therefore, to examine more closely the major methodologies and techniques commonly used in deriving indirect estimates of occupational disease.[8]

Prevalence of disease. Prevalence rates were used to derive the estimate for silicosis cited above. These rates express the proportion of the population having a disease at a given time, regardless of time of onset. But because epidemiological studies, the major source of prevalence estimates of occupational disease, are confined to a particular population with a specific exposure, extrapolation of the findings to other, larger populations requires caution. Table 1, excerpted from the Interim Report, will be used to illustrate some of the limitations in the use of prevalence rates for this purpose.

The exposed population figures, obtained from a variety of sources, including the Mine Safety and Health Administration and NIOSH, are not representative exclusively of the exposed work force. The more important figures in this table are the prevalence rates, which were obtained from various special studies. Estimates of the numbers of disease cases were calculated by multiplying the exposed populations by the prevalence rates.

The crucial problem in applying prevalence rates derived from special studies to an entire production work force is the lack of assurance that the composition and levels of exposure of the larger population are the same as those of the worker group studied. The group of workers selected for epidemiological study is usually not a statistical sample of all production workers in the industry; therefore, the prevalence rates from such a study cannot be generalized to the larger population.

Use of the specialized prevalence rates in deriving the silicosis estimates probably led to biased results. For example, the 10-percent prevalence rate for the granite industry, which was adapted from an article published in the *Archives of Environmental Health* in 1974,[9] was not a prevalence measure of silicosis or other respiratory disease, as would be expected. The source data related only to current dust exposures in the Vermont granite

Table 1. Estimated number of cases of silicosis among currently exposed workers

Industry	Population exposed	Prevalence per 100 persons	Estimated number of disease cases
Total	1,057,000		59,102
Mining:			
Metal	24,000	3.4	816
Coal	126,000	.5	630
Nonmetal	7,000	.8	56
Quarry:			
Granite			
Sand or gravel	4,000	10.0	400
	40,000	10.0	4,000
Stone, clay, and glass products	511,000	2.0 – 20.0	31,500
Foundries:			
Iron and steel	192,000	4.0 – 9.0	16,700
Nonferrous	75,000		
Abrasive blasting	78,000	6.5	5,000

SOURCE: U.S. Department of Labor, *An Interim Report to Congress on Occupational Diseases*, June 1980, table A-2, pp. 130–31.

sheds. But for estimating purposes, it was assumed that sand and gravel workers have the same "prevalence rate" as the granite workers, under further assumption of a similar degree and duration of exposure. In the case of the stone, clay, and glass products industry, a specific prevalence rate was selected for estimating purposes, although special studies showed a range of rates. While the chosen rate—6.16 percent—appears conservative, there is no reason to assume that it is a better estimate than any other within the wide 2- to 20-percent range of individual study results. If prevalence rates had been calculated from sample data, the precision of the estimates could be measured by standard errors. But for the data in table 1, the standard error of estimated prevalence is not available, and the precision of the estimates is therefore not known.

Dose-response. Dose-response studies generally attempt to establish a statistical relationship between dose (exposure) and response (onset of disease or death). For simplicity, this will be illustrated by example. Eight of 22 North Carolina textile manufacturing plants were selected for a 1970–71 study of cotton textile workers.[10] A dose-response curve was fitted to the resulting data on the prevalence of byssinosis among a group of 1,259 workers in the cotton preparation and yarn area. (See table 2.) From the fitted curve, the byssinosis prevalence rates and their 95-percent confidence limits for workers in the cotton preparation and yarn area were predicted at various cotton dust levels of exposure:

Dust level (mg/m³)	0.1	0.2	0.5
Predicted prevalence per 100 workers	6.5	12.7	25.8
95-percent confidence interval	5.0–8.5	10.8–14.9	22.5–29.3

The referenced study suggested that a reasonably safe level of lint-free cotton dust is 0.1 mg/m³ in the cotton preparation and yarn area, because nearly 94 percent of the workers exposed at this level had no symptoms of byssinosis.

As indicated in table 3, the authors of the Interim Report used the results of the North Carolina study to calculate the total number of expected byssinosis cases by multiplying 1977 BLS data for production workers in six yarn manufacturing industries by the prevalence rate of 25.8 per 100 workers—the prevalence predicted by the textile worker study for dust level exposure of 0.5 mg/m³. But it is unrealistic to assume that all workers in yarn industries generally are exposed to such high levels of cotton dust. This assumption might not even be true of cotton preparation and yarn workers nationwide, the types of workers among whom the prevalence study was done. Even if it were, however, the results of this special study should not be construed as necessarily representative of production workers in all yarn manufacturing industries, because the occupational composition of other industry segments would probably not be similar to that of the cotton preparation and yarn area.

Table 2. Data on byssinosis prevalence by median dust level

Item	Median dust level (mg/m³ rounded)									
	.06	.07	.10	.15	.23	.34	.51	.77	1.2	1.7
Sample size (n)	145	71	193	279	78	208	147	65	31	42
Cases of byssinosis (r)	5	2	14	27	10	39	37	30	14	17
Prevalence (r/n × 100)	3.4	2.8	7.3	9.7	12.8	18.8	25.2	46.2	45.2	40.5

Closer scrutiny of the dose-response relationship in the cotton preparation and yarn area makes the selection of the 25.8 prevalence rate even more puzzling, as only abou. 285, or 23 percent, of the 1,259 workers fell in the categories exposed to median dust levels 0.5 mg/m³ or above. According to the data in table 2, the average overall byssinosis prevalence for the entire study was 15.5 per 100 workers, or 195 persons.

For the study of illnesses such as byssinosis, information on duration or years of exposure to the hazard is also crucial. This factor should be taken into account because a worker with 10 or 20 years of work exposure would seem to be more susceptible to byssinosis than a worker with a few years of exposure. Moreover, a worker's exposure level may change over the years, due to changes (not always for the worse) in working conditions, including ventilation, industrial hygiene practices, and so forth. In short, a worker normally experiences different amounts of exposure, of varied duration, over the course of his or her employment. If the dose-response relationship curve is not adjusted for the extent of exposure, its accuracy is diminished. Unfortunately, comprehensive data on the intensity, duration, and flucuation of exposure are rarely available, particularly in retrospective studies of the type used in making the above estimates.

In general, dose-response relationship curves are nonlinear, monotonic (increasing or decreasing), and have lower and upper asymptotes (usually, but not always, 0 and 100 percent). The models tend to operate well in a restricted range of exposure or dosage levels, but not over the entire range; that is, they may be useful in determining the "safe" level of exposure, but they are not suitable for developing national or industry-wide statistics on occupational illnesses.

Standardized mortality ratio. The standardized mortality ratio has been widely used as a summary index of mortality in occupational epidemiologic studies. The ratio is a method commonly used to accomplish indirect age adjustment by applying age-specific death rates of a standard population to a study population to yield a

Table 3. Expected numbers of byssinosis cases, selected yarn manufacturing industries

Yarn manufacturing	Standard Industrial Classification Code	Exposed workers	Assumed prevalence (in percent)	Expected cases
Broad woven fabric mills, cotton	2211	86,600	25.8	22,340
Circular knit fabric mills	2257	1,000	25.8	300
Yarn spinning mills	2281	34,400	25.8	8,880
Texturizing, throwing, twisting, and winding mills	2282	13,900	25.8	3,590
Thread mills	2284	3,600	25.8	930
Tire cord and fabric	2296	1,600	25.8	410

SOURCE: U.S. Department of Labor, *An Interim Report to Congress on Occupational Diseases*, June 1980, table A-1, p. 126.

number of "expected" deaths. It is defined as:

$$\text{SMR} = \frac{\text{total observed deaths in a study population}}{\text{total expected deaths in the population}}$$

A ratio greater than 1 means that more deaths have been observed in the study group than would be expected on the basis of rates for the standard population; conversely, fewer deaths than expected are indicated by a ratio less than 1. A test, such as chi-square, is generally used for determining the level of significance of the results.

If the focus is on mortality from hazards in the workplace, an ideal standard population would include all workers in the Nation. But because mortality data are not available in this detail, the total U.S. population, or the male population, is generally selected as the standard. Consequently, misunderstanding sometimes arises in applying standardized mortality ratios to estimate the total number of deaths caused by certain diseases in industry.

In the Interim Report, the ratio was used to derive estimates of work-related lung cancers.[11] Data from three sources were used in the computations:

(1) The number of workers exposed to beryllium compounds and oxides in end-user processes, estimated at 50,000, was obtained from the NIOSH 1972 National Occupational Hazard Survey.

(2) The mortality ratio of 1.6 for lung cancer among beryllium workers was taken from epidemiologic studies.

(3) The 1976 U.S. age-adjusted incidence for lung cancer of 116 per 100,000 males over age 20 was used.

The number of expected deaths from lung cancer among workers in end-user industry processes was then calculated as: 50,000 × 1.6 × (116/100,000), or about 93 lung cancer deaths. Is this a valid estimate of all lung cancer deaths in this industrial population which were due to exposure to beryllium compounds?

First, it is important to understand that a standardized mortality ratio of 1.6 does not mean that the mortality rate of the study population is 1.6 times that of the standard population and can thus be used as a multiplying factor to obtain the number of deaths in a broader population. Even when exposed to the same health hazards and having the same age-specific death rates for all age groups, different study populations will yield different values of the standardized mortality ratio if their age distributions differ. Obviously, then, the ratios should not be used in estimating the number of deaths due to disease in populations which differ in composition from a study population.

Second, a high ratio does not imply that all deaths from lung cancers, for example, are caused by occupational exposure; it tells us only that the study population has an unusually high mortality risk. We do not know what percentage of deaths actually resulted from exposure, in this case to beryllium. Even if the standardized mortality ratio were interpreted to mean that the number of deaths of the study population is 1.6 times that of the standard population, 58 (that is, 93/1.6) deaths per year from lung cancer would have occurred in the study population irrespective of any exposure to beryllium. That leaves 35 deaths per year (or about 38 percent of total estimated deaths) which might be attributed to, or aggravated by, exposure to beryllium compounds. At most, the estimate of 93 deaths depicts the total cancer toll among the occupational group, not the excess cancer resulting from beryllium exposure.

Relative risk. Because incidence or other direct measures of occupational disease are generally lacking, epidemiologic study of occupational morbidity often relies on a measure of excess risk of a disease among workers in specified working environments to determine the association between certain occupational factors and the incidence of disease. One such measure is relative risk.

As we will see, relative risk also is subject to misuse in making estimates of occupational disease in industry, perhaps because of confusion about its definition. This can be illustrated again by an example from the Interim Report. From the National Occupational Hazard Survey, 98,090 workers were estimated to be exposed to chromates in chromate pigment production and, as noted, the 1976 U.S. male age-adjusted incidence rate of lung cancer for those over age 20 was 116 per 100,000. Based on these two figures and a chosen relative risk of 5, the estimated number of lung cancers per year among the 98,090 workers was 570 cases: (exposed population) × (incidence rate of male population) × (relative risk) = (98,090) × (116/100,000) × 5 = 570 cases.

The report stated: "Based on three studies reporting relative risks from 2.3 to 38, a relative risk of 5 will be used for workers exposed to chromate compounds. . . ."[12]

Seemingly, this is a conservative choice, but in reality there is no way to tell whether the relative risk of 5 is appropriate or not, because we have no information on its precision. More basic issues are whether relative risk should even be used to estimate the incidence of lung cancer cases, *and* what is involved if one does so.

Relative risk is a measure of the strength of the association of the disease with a certain factor, such as exposure to a specific chemical, and thus is an important statistical tool in retrospective epidemiological studies. It is defined as the ratio of the incidence rate of those exposed to a factor to that of those not exposed. Conversely, relative risk can be used to compare groups of subjects diagnosed as having a disease to determine if the groups differ in the proportion of persons who had been exposed to the specific factor or factors. However, because retrospective study entails looking at the historical frequency of the suspected cause in a diseased group and a control group, the incidence rates of the diseased among the exposed and unexposed cannot be estimated directly but only approximated by relative risk, an odds ratio (or risk ratio).

Consider the following tabulation, in which the total T_i of the *i*th group of workers in a study population T $(T = \sum_{i=1}^{K} T_i)$, where K equals the total number of groups, is divided as:

	With disease	*Without disease*	*Total*
Exposed to factor	A_i	B_i	$A_i + B_i$
Not exposed to factor .	C_i	D_i	$C_i + D_i$
Total	$A_i + C_i$	$B_i + D_i$	T_i

Data classified in the table may be obtained from prospective, cross-sectional, or retrospective studies. According to the tabulation above, the proportion of workers exposed to a factor and having the disease is $A_i/(A_i + B_i)$, while the corresponding proportion of unexposed workers with the disease is $C_i/(C_i + D_i)$. Thus, the relative risk of disease for exposed workers is: $A_i(C_i + D_i)/C_i(A_i + B_i)$. But because the incidence of a specific disease in a population tends to be low, the calculation $(A_iD_i)/(B_iC_i)$—that is, $(A_i/B_i)/(C_i/D_i)$—provides a close approximation of the relative risk (but not of the incidence of disease) for the *i*th group of individuals. For an overall relative risk, a commonly used formula is:[13]

$$R = \sum_{i=1}^{K} (A_iD_i/T_i) \,/\, \sum_{i=1}^{K} (B_iC_i/T_i)$$

Because age is an important factor affecting incidence of disease, it should be accounted for in measurements of overall relative risk. In such an age-adjusted risk ratio, T_i is the total of the *i*th age group. The chi-square test is commonly used to determine whether the relative risk is significantly different from 1. Using a risk ratio from a particular study and an incidence rate for the general male population to estimate the extent of occupational disease in a larger population exposed to a specific factor assumes similarity among the age and sex distributions of all groups. However, in the Interim Report's estimate of disease from exposure to chromate compounds, the composition of the general male population and the exposed population may not be similar to that of any special study population. Therefore, use of the relative risk of 5, selected from a range, may produce biased results.

In brief, relative risk is a measure only of the strength of the association between the disease and the exposure factor. If significantly different from 1, it indicates only that the disease is strongly associated with the exposure factor, not that the factor necessarily causes the disease. Any firmer conclusion would require further study. Relative risk is surely a critical measure for assessing the etiologic role of a factor in disease, but it is not suitable for estimating the incidence of disease.

Cancer related to occupational factors

What fraction of cancer incidence in this country is attributed to occupational exposure to carcinogens in the workplace? An unpublished 1978 report prepared jointly by several research institutes indicated that about 20 percent of all cancers are occupationally related and stated: "If recent evidence is considered and if the full consequences of occupational exposures in the present and recent past are taken into account, estimates of at least 20 percent . . . may even be conservative."[14] The report concluded that earlier estimates that only 1 to 5 percent of all cancers in the United States were attributable to occupational factors had not been scientifically documented and that Dr. Philip Cole's 1977 estimates of less than 15 percent for men, and less than 5 percent for women, contained a large element of uncertainty.[15] The results from the joint report have been cited in numerous publications, and questions have been raised concerning their validity.

The 20-percent overall estimate resulted from a two-step merger of the results of several separate studies. The first step developed estimates of the fraction of cancers due to asbestos exposure, while the second compared the risks from asbestos exposure with those from five other high-exposure substances, with the final result based on that comparison. Details of the estimation procedure follow.

According to the report, about 8 to 10 million workers have been exposed to asbestos since the beginning of World War II, and approximately 4 million have had heavy exposure. On the basis of a longitudinal study of a cohort of insulation and shipyard workers, the report indicated that, of deaths of heavily exposed workers, 20 to 25 percent were from lung cancer, 7 to 10 percent from pleural or peritoneal mesothelioma, and 8 to 9 percent from gastrointestinal cancer. Summed up, this suggests that 35 to 44 percent of cohort deaths were attributable to cancer diseases. Accordingly, the joint study group concluded that, over the next 30 years, at least 1.6 million (about 40 percent of the 4 million) heavily exposed workers would die from the asbestos-related cancers listed above. Based on an assumption suggested by data from a second source, the excess risk to the remaining less heavily exposed workers (4 to 7 million) was estimated to be one-fourth of that for the heavily exposed (a 10-percent risk, obtained as ¼ × 40 percent), yielding a cancer estimate for this group of 0.4 to 0.7 million. This raises the total to between 2.0 and 2.3 million cancer deaths over the next three decades, with expected averages of 58,000 to 75,000 cancer deaths per year associated with asbestos alone. The joint study indicated that this excess number of cancer deaths would account for roughly 13 to 18 percent of all expected cancer deaths.

In the second step, the study presented data on carcinogenic risks to workers found to be exposed to five substances in addition to asbestos during a 1972–74 National Occupational Hazard Survey.[16] Table 4, adapted from the study, shows selected results. The risk ratios were either standard mortality ratios or risk ratios selected from a range of values obtained from other epidemiological studies. The report indicated that the figures were not precise estimates, but reasonable ones for comparison purposes, because they were all derived by the same method.

Other conclusions pertaining to the second step of the joint study:

- Excess cases for the other five substances combined are about 33,000 cancers per year, versus 13,900 for asbestos alone (table 4). The data show that these five agents together pose hazards similar to or greater than those posed by asbestos.
- The projected numbers of excess cancers are only for the 1972–74 groups of N-size workers. But because of workplace turnover, the actual number of workers exposed over time will be several times larger than N.
- Consequently, the excess number of cases from asbestos (13,900) among the 1972–74 group underestimates the annual expected number of cancer deaths related to asbestos—58,000 to 75,000, as derived in step 1—by a factor of 4 to 5.
- Because the data for the five other substances listed in table 4 were derived in the same way as those for asbestos, the estimates may likewise underestimate the number of cancers attributable to these substances.

Table 4. Risks of disease associated with exposure to selected substances

Chemical substance	Estimated number of workers exposed, 1972–74 (N) (in millions)	Diseases of risk	Risk ratio (R) (assumed)	Age-adjusted incidence of disease (I) (per 100,000)	Projected number of excess cases (R-1)NI
Asbestos	1.6	Lung cancer Mesothelioma	6.6 (one third	116 of lung cancer)	10,400 3,500
Arsenic	1.5	Respiratory cancer	4.7	131	7,300
Benzene	2.0	Leukemia	5	17.9	1,400
Chromium	1.5	Respiratory cancer	5	131	7,900
Nickel	1.4	Respiratory cancer	5	131	7,300
Petroleum products	3.9	Lung cancer	3	116	9,100

Source: National Cancer Institute, National Institute of Environmental Health Services, National Institute for Occupational Safety and Health, *Estimates of the Fraction of Cancer in the United States Related to Occupational Factors*, September 1978, (unpublished), table 2, p. 33–38.

- According to results from the first study step, asbestos alone will account for between 13 and 18 percent of all cancer deaths over the next 30 years. The data for the five other substances suggest at least 10 to 20 percent additional cancer deaths. Hence the study conclusion that occupationally related cancers may make up 20 percent or more of cancer deaths in forthcoming decades.

Closer examination of the joint study findings indicates that they may not be fully supported by data from the various studies used in their development, a conclusion corroborated in a report prepared for the Office of Technology Assessment, U.S. Congress.[17]

First, a study of causes of nearly 2,300 deaths among a cohort of 17,800 asbestos insulation workers contributed the finding that 35 to 44 percent of workers heavily exposed to asbestos died of cancer. The joint study group selected 40 percent as an approximation of the cohort's fatal cancer risk, and applied this percentage to a national population of 4 million workers considered to be heavily exposed to asbestos. This extrapolation was based on the unstated and probably unjustified assumption that the cohort of asbestos insulation workers was representative of the worker population of mixed industries. The mixed industry population might well differ from the cohort group not only in levels and length of asbestos exposure, but also in terms of population factors, such as age, sex, race, and percentage of smokers, which play significant roles in risk assessment. From the statistical point of view, application of the results from a study population to other populations of different composition and exposure experience usually produces biased estimates. The assumption that the risk of cancers for the less heavily exposed group of 4 to 7 million workers is one-fourth that of the heavily exposed group is similarly questionable. Consequently, the resulting total estimate of 58,000 to 75,000 asbestos-related cancer deaths per year is highly suspect.

Second, the analytic results by "causes" of death in the cohort group of asbestos insulation workers showed only the percentage distribution by disease, irrespective of cause; they did not indicate what fraction of cancer was induced or aggravated by asbestos alone or by any other specific exposure. Although it may be highly abnormal to find 20 to 25 percent of lung cancers and 8 to 9 percent of gastrointestinal cancers as causes of death among a group of workers, the actual percentage of cohort-group deaths specifically associated with exposure to asbestos remains uncertain.

Third, the method of estimating excess cancer cases or deaths for each exposure substance shown in table 4 may result in either overestimates or underestimates. Risk ratios do not in themselves provide the magnitude of risk, because they are greatly affected by the composition of the study population. In that the risk ratio is a ratio of observed to expected disease cases or deaths, any small increase in observed cases will greatly increase the risk ratio if the expected number of cases is small. This is especially true when the study population is small. Assume, for example, that study results indicate that 1,400 deaths were observed when only 1,000 were expected, yielding a risk ratio of 1.4. The chi-square value for the level of significance will be: $X^2 = (\text{observed-expected})^2/\text{expected} = 160$. To achieve the same level of significance for an expected number of 10, the observed number would have to be 50, and the resulting risk ratio would be 5. Thus, a small study population has a better chance to yield a large risk ratio than a large study population, if both experience the same hazards and have the same population composition. It is not surprising, therefore, to find that risk ratios vary widely among epidemiologic studies of workers exposed to the same chemical substance. It is more important to know whether the value of the risk ratio is significantly different from 1, which indicates that the risks for the exposed and nonexposed groups are not identical, than to determine the absolute magnitude of the ratio itself.

Fourth, the joint report considered 13,900 excess cases per year due to asbestos exposure to be underestimated by a factor of 4 to 5 under the assumption of high turnover of the work force. Because the report had already estimated 58,000 to 75,000 asbestos-related deaths per year in an exposed population estimated at 8 to 11 million, further inflation by this factor results in an incredible number of occupational cancers. Based on the age-adjusted incidence shown in table 4, the number of expected lung cancer deaths, excluding mesothelioma, among a 1.6 million male population over age 20 would be 11.6 million × (116/100,000) or 1,856, in the absence of any exposure to asbestos. It follows, then, that excess lung cancer deaths due to asbestos exposure alone (10,400) amount to 85 percent of all lung cancer deaths in this 1.6 million exposed population—that is, 10,400/(1,856 + 10,400). Add to this calculation the mesothelioma cases, and the figure becomes 88 percent, a rather astounding share considering all other cancer causes.

Estimates of the excess number of predominantly respiratory type cancer cases due to the five other substances for the given groups of exposed workers also are indicated in table 4. For these groups, the expected numbers of cancer cases in the absence of exposure would be: 1,970 (arsenic), 360 (benzene), 1,970 (chromium), 1,830 (nickel), and 4,520 (petroleum products), by direct application of the corresponding incidence rate. This means that the proportion of total cancer cases associated with each of these five chemicals would amount to 79 percent, 80 percent, 90 percent, 80 percent, and 67 percent, respectively. These proportions appear unreasonably high.

Finally, the joint study group considered the excess number of cancers attributed to the five other substances to be underestimated also, based on the two-step findings for asbestos and applying the same logic. However, this inference is not justifiable, because estimates for the other substances were obtained independently, and the magnitudes of the estimates were greatly affected by the value of the risk ratio chosen for each.

Disability-impairment data

Three types of disability data are available to the occupational health analyst: Social Security Administration data from the various surveys of disabled adults; the Social Security Administration's disability applicant files; and the National Center for Health Statistics' Health Interview Survey data. These data sets also suggest that there are greater numbers of health problems with some occupational connection than published data from employer-based surveys would indicate, but they do not necessarily establish a causal connection between work and disease. Therefore, it may be beneficial to discuss briefly the conceptual framework of these data bases.

The disability study. This study was an analysis of disability data obtained from an interview survey of 18,000 persons age 20 to 64, who had been selected from the 1970 5-percent census sample.[18] The survey was conducted by the Bureau of the Census for the Social Security Administration. Of the 18,000-member sample, 11,700 had been selected from among those persons who had a disability prior to October 1969 as indicated on the 1970 census questionnaire. A mail screening in 1971 resulted in selection of another 1,200 recent onset cases and 5,100 nondisabled persons. Disability in the study was defined "severe," if it precluded work altogether, or "partial," if it limited the kind or amount of work performed.

Based on survey results, it was estimated that about 15 million persons age 20 to 64 nationwide were disabled from all causes. To determine the job-relatedness of a disability, the survey respondent was asked: "Was your (main condition or illness) caused by your job?" Of the resulting estimated 2.4 million job-caused disabilities, 1.7 million were attributed by the author of the study to occupational disease. (For purposes of the study, occupational diseases were defined as all cases of disability which were not caused by an accident on the job.) The study further stated: "Because of limited understanding of what diseases are occupational in nature, it is likely that the actual number of occupational disease cases is much higher" (page IV).

The study indicated that, of the 1.7 million persons disabled by occupational disease, 1.1 million or two-thirds were partially disabled. Among the 0.6 million severely disabled, musculoskeletal and cardiovascular conditions accounted for almost 60 percent of all conditions reported. About 25 percent had mental and digestive ailments and 9 percent, respiratory conditions. Cancer caused by occupation was estimated among the severely disabled at little more than 1 percent, slightly over 6,000 cases.

Can we say that these are good estimates? As the author of the study points out, the survey provided a snapshot of the population at a given time.[19] Thus, the resulting estimates measured the prevalence of occupational disease, counting as they did all existing disabilities without regard to time of onset or diagnosis. The occupational relationship was subjectively perceived by respondents and may or may not have been corroborated by objective medical evidence. Except perhaps for the musculoskeletal impairments, the other conditions were of a type for which objective evidence of occupational causality might have been difficult to obtain.

Finally, while national estimates based on survey data of self-perceived work-related disabilities suggest that an undercount in employer-based occupational illness estimates does exist and in some identifiable parameter, it appears that those diseases which have long latent periods and have yet to be diagnosed are missed in this approach as well. Many long-latent diseases or aggravating disease symptoms of possible occupational origin are recognized beyond the cutoff age of most direct surveys. When disease appears after a worker has lived at least a normal life span, other factors, related to the aging process, enter which may lessen the urgency to determine precise causes.

Disability applicant files. The Social Security disability program provides benefits to disabled adults with work experience in employments covered by the Social Security Act, and to adults disabled since childhood who are dependents of disabled or retired work beneficiaries or of deceased insured workers. To qualify, claimants for Social Security Disability Insurance must prove that they are both disabled and unable to engage in any substantially gainful work due to their medical condition. Two sample data files from disability applicant records are maintained by the Social Security Administration (SSA), the Continuous Disability History Sample (CDHS) and the Longitudinal Sample of Disability Insurance Applicants (LSDIA). CDHS contains about 25 percent of allowed claims and 10 percent of denied claims, while LSDIA is a 5-percent longitudinal sample of disability applicants.

Disability applicant records contain demographic information, such as sex, race, date of birth, education, occupation, and industry of employment, as well as important medical information, such as diagnosis (primary, secondary, and tertiary), listings of impairments, principal body system involved, and severity and duration of impairment. It is important to note, however, that in the recording and coding of disability cases, work-related illnesses are not distinguished from nonwork-related ones. That is, for adjudicative purposes, an occupational relation to the disease or disability does not have to be established. (Although occupations are associated with worker claimants, no causal relationship is required or intended.) According to a 1974 report by the U.S. Department of Health, Education, and Welfare, the leading causes of disability by diagnosis were listed as chronic ischemic heart, schizophrenia, osteoarthritis, emphysema, displacement of intervertebral disc, diabetes mellitus, rheumatoid arthritis, acute cerebrovascular disease, malignant neoplasm of trachea and lung, neuroses, pulmonary tuberculosis, and mental disorders.[20] This listing also contains types of diseases for which, obviously, objective evidence of occupational causation would be hard to come by.

To qualify for disability insurance, a claimant must have a health condition sufficiently incapacitating to be unable to engage in any substantial, gainful work. Thus, a worker may have an occupational disease, but be disallowed disability benefits because pursuit of gainful employment is still possible. Therefore, disability estimates based on SSA records are not precise and comprehensive indicators of occupational impact. In addition, the occupational history of an applicant is limited to his or her longest full-time occupation in the 10-year period preceding the alleged date of onset. Because a job-caused disability, especially one of a chronic nature, may have been due to an earlier exposure, and perhaps, to a different job, there is a potential bias in the use of these statistics for epidemiological study. While the SSA disability files are an important source of data for development of morbidity ratios which identify disease and occupational relationships worthy of further study, they are not suitable for deriving estimates of occupational disease.[21]

Health Interview Survey data. The Health Interview Survey of the National Center for Health Statistics is a nationwide survey of approximately 40,000 households, conducted on a continuous basis. It is designed to gather information on personal and demographic characteristics, illnesses, injuries, impairments, chronic conditions, and other health topics. Respondents are asked whether they worked in the 2 weeks prior to the interview week, and in what occupation and industry. Each year's sample includes about 120,000 persons, of whom roughly 50 percent are employed.

As data are processed and tabulated, the center publishes analytical reports on various topics. While very few reports have been published on the work force population as the primary study target, data files are available for research purposes. Like the Social Security Administration disability applicant data the center's data can serve important epidemiological research objectives, but should not be used to derive precise estimates of occupational disease incidence.[22]

DESPITE THEIR SHORTCOMINGS, the results of the studies and applied methodologies discussed above do, in combination, point to a larger impact of the workplace on the health of workers than is borne out in regularly published statistics, although the magnitude of the understatement remains uncertain. Continued efforts towards improved or new methods are needed to produce national estimates of greater credibility for the chronic and long latent disease component of job origin. Such efforts might include improved techniques for diagnosing occupational diseases; more sophisticated and efficient means of monitoring workers' health; education and training of doctors and workers regarding health hazards on the job; conduct of epidemiological studies representative of national experience; and establishing methodology for determining the contribution of job exposure to the origin and course of disease. □

FOOTNOTES

[1] Harvey J. Hilaski, "Understanding statistics on occupational illnesses," *Monthly Labor Review*, March 1981, pp. 25–29.

[2] David P. Discher, Goldy D. Kleinman, and F. James Foster, *Pilot Study for Development of an Occupational Disease Surveillance Method* (Washington, U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health, 1975).

[3] In the survey, the examining physician determined a condition to be one of five types: probable occupational disease; doubtful occupational disease; suggestive history; cannot be evaluated; probably nonoccupational. Probable occupational disease was considered to be present when "manifestations of disease are consistent with those known to result from excessive exposure to a given injurious agent; this injurious agent is present in the patient's working environment and significant contact in course of usual duties is likely." Discher and other, *Pilot Study*, p. 25.

[4] Although OSHA had a noise standard as early as 1971, environmental and audiometric testing was not formalized at the time of the pilot survey. Under the Hearing Conservation Amendment, which became effective Aug. 22, 1981, the permissible exposure level (PEL) remains at the 90 decibel (dB) level as an 8-hour time weighted average but an 85 decibel time weighted average was established as an action level which triggers the initiation of hearing conservation programs, including exposure monitoring, audiometric testing of employees, training, and some recordkeeping.

[5] U.S. Department of Labor, *Cotton Dust: Review of Alternative Technical Standards and Control Technologies*, Report to the Congress, May 1979.

[6] U.S. Department of Labor, *An Interim Report to Congress on Occupational Diseases*, June 1980. Also see "Labor Month in Review," *Monthly Labor Review*, August 1980, p. 2.

[7] See *Occupational Injuries and Illnesses in the United States by Industry, 1980*, Bulletin 2130 (Bureau of Labor Statistics, 1982), p. 32, table 7.

[8] This study was undertaken in the spring of 1980 as part of the Bureau's continuing evaluation of occupational safety and health statistics.

[9] Gilles P. Theriault, William A. Burgess, Lou J. DiBerardinis, and John M. Peters, "Dust Exposure in the Vermont Granite Sheds," *Archives of Environmental Health*, Vol. 28, 1974, pp. 12–17.

[10] James A. Merchant, John C. Lumsden, and others, "Dose Response Studies in Cotton Textile Workers," *Journal of Occupational Medicine*, Vol. 15, No. 3, 1973, pp. 222–30.

[11] *An Interim Report*, pp. 21–23.

[12] *Ibid.*, p. 26.

[13] See Nathan Mantel and William Haenszel, "Statistical Aspects of the Analysis of Data from Retrospective Studies of Disease," *Journal of the National Cancer Institute*, Vol. 22, No. 4, 1979, pp. 719–48, for a full discussion of the various relative risk formulas.

[14] National Cancer Institute, National Institute of Environmental Health Services, National Institute for Occupational Safety and Health, *Estimates of the Fraction of Cancer in the United States Related to Occupational Factors*, September 1978 (unpublished), p. 1.

[15] *Ibid.*, pp. 5–8.

[16] Exposure information for all substances, except arsenic, was derived from the National Occupational Hazard Survey conducted by NIOSH during 1972–74. Exposure information for arsenic was contained in criteria for a 1975 recommended standard developed by NIOSH.

[17] Richard Doll and Richard Peto, "The Causes of Cancer: Quantitative Estimates of Avoidable Risks of Cancer in the United States Today," *Journal of the National Cancer Institute*, June 1981, pp. 1238–45.

[18] Glen M. Shor, *Occupational Disease and Compensation: An Analysis of the 1972 SSA Survey of Disabled Adults*, prepared under contract for the Office of the Assistant Secretary for Policy, Evaluation and Research, U.S. Department of Labor, October 1979.

[19] Shor, *Occupational Disease*, p. 2.

[20] *Social Security Disability Applicant Statistics 1970* (Washington, U.S. Department of Health, Education, and Welfare, 1974).

[21] For a recent study of Social Security disability data, see *NIOSH Research Report, Occupational Characteristics of Disabled Workers* (Washington, U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health, 1980).

[22] For analysis of Health Interview Survey data, see *NIOSH Research Report, Industrial Characteristics of Persons Reporting Morbidity During the Health Interview Surveys Conducted in 1969–1974* (Washington, U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health, 1980).

Disability benefits for employees in private pension plans

Although benefits vary,
for many 20-year employees aged 55,
a private pension and social security
would replace about one-half of
the worker's pre-disability earnings

DONALD BELL AND WILLIAM WIATROWSKI

Although private pension plans are thought of primarily as a source of cash income for the elderly, they typically serve other functions as well. For example, they usually contain early retirement features and often provide pensions to workers who lose their jobs because of disability.

The high proportion of pension plans with disability retirement features is dramatized in data from the Bureau of Labor Statistics' annual survey of the incidence and characteristics of employee benefit plans in medium and large establishments.[1] Of the 1,002 private pension plans found in the 1980 survey, 86 percent had disability retirement features.[2] This article analyzes the various eligibility requirements for disability retirement and typical benefit levels, as found in these plans.

Disabled workers may have other protection as well. They often are eligible for social security benefits and also may be covered by private long-term disability insurance plans. This study includes retirement benefits and related long-term disability and social security benefits. However, excluded from the study are separate long-term disability plans which would be the only source of private disability income, and general early retirement provisions without specific disability features.

Two-thirds of the 861 pension plans with disability provisions offered immediate disability benefits. The remaining third deferred benefits until the employee reached the early or normal retirement age stipulated by the plan. However, immediate long-term disability insurance benefits were typically available to employees under deferred disability retirement plans. (Long-term disability benefits were less common when immediate disability pensions were paid.) Such private benefits are provided in addition to payments under the social security system when a worker is incapacitated.

Under retirement plans providing immediate disability pensions, benefits were available to workers meeting plan definitions of disability; commonly, service or age requirements, or both, were specified as well. Employees covered by deferred-benefit plans also had to reach the stipulated early or normal retirement age to receive benefits.

Illustrative benefit levels from all potential sources—disability retirement, long-term disability insurance, and social security—were calculated as a percent of pre-retirement earnings for a hypothetical worker disabled at age 55, with 20 years of service. Under these conditions, combined private pension and social security benefits tended to replace about half of pre-disability earnings in instances when private pension plans provided immediate retirement benefits. Replacement rates in many cases were more liberal where retirement packages furnished deferred pensions integrated with long-term disability benefits. As a rule, social security, rather than private plans, was the larger income source for the disabled worker.

Immediate and deferred benefits

Sixty-eight percent of the 861 disability retirement plans examined offered immediate pensions. The balance (32 percent) deferred benefit payments until the normal

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retirement age or in some instances, at the employee's option, until the early retirement age.

A key element in any pension plan is the formula included for calculating benefits. (Common formulas involve percentages of an employee's career or terminal earnings and dollar amounts per year for which an individual is covered by the plan.[3]) Most of the pension plans studied used the same basic formula to calculate disability and normal retirement benefits.

Table 1. Pension plans with immediate disability retirement provisions by type of benefit formula, medium and large establishments, 1980

Benefit formula	Plans with immediate disability retirement	Percent of: Plans with immediate disability retirement	Percent of: All disability retirement plans
Total	583	100	68
Unreduced normal benefits	418	72	49
Reduced normal benefits	85	15	10
Actuarially reduced formulas	39	7	5
Same as early retirement	29	5	3
Percent per year reduction between retirement and specified age	17	3	2
Other than normal benefits	80	14	9
Flat amount formulas	19	3	2
Dollars times years of service	24	4	3
Percent of unreduced benefit minus social security	20	3	2
Percent of earnings minus social security	12	2	1
Percent of earnings in highest of last years worked	5	1	1

NOTE: Because of rounding, sums of individual items may not equal totals.

Immediate disability retirement. Of the 583 plans with immediate disability retirement provisions, nearly three-fourths used an unreduced normal benefit formula for disabled workers. (See table 1.) That is, beneficiaries received pensions calculated as if disability occurred at the normal retirement age;[4] no reduction in benefits was made solely because of the early retirement age. Nevertheless, these disability pensions tended to be lower than those for normal retirement because benefits typically were based on shorter service.

An additional 15 percent of plans with immediate disability benefits reduced pensions because of the relatively young age of those who retire on disability. Nearly half of these plans provided for actuarial reductions; pensions for retirement at age 55 usually were about 61 percent below those for normal retirement at age 65 with the same service. The remainder of these plans provided for less than actuarial reductions, the average benefit for disability at age 55 being approximately 43 percent less than that for normal retirement at age 65.

The remaining 14 percent of the plans with immediate disability pensions based benefits on formulas designed to temper reductions caused by shortness of service or to yield higher returns than under the normal retirement formula.

Generally, plans do not provide for later modification of the benefits determined at the time of disability retirement. However, 7 percent of the immediate disability retirement plans specified a recalculation of benefits at age 65, mainly either to increase compensation for persons whose benefits were reduced because their disability occurred before normal retirement age or to raise benefits for those with short service at the time of disability retirement. Four percent recalculated benefits at age 65 based on the normal retirement formula and service at the date of disability; 3 percent recalculated on the basis of credited service at the time of disability plus the period of disability.

Deferred disability retirement. In sharp contrast to the typical practice under plans providing immediate benefits, only 16 percent of the deferred disability retirement plans based benefits solely on service at the time of disability. (See table 2.) Benefit calculations under most of the deferred plans granted service credit for all or part of the period between disability and the initiation of pension payments. Thus, 77 percent of these plans allowed service credit to accrue during all of the deferral period, while 7 percent allowed partial credit, usually for 1 or 2 years.

Coordination of pensions and social security. Benefits under private pension plans may be coordinated with those under the social security system. This occurs through either offset or integration provisions in the private plans. Under the former approach, private benefits are reduced by all or part of the social security payment. Integration provisions apply separate benefit formulas to earnings above and below the social security taxable wage base; for example, 1 percent of earnings up to the social security tax base and 1.5 percent of earnings above that tax base for each year of service. Thirty percent of all pension plan participants in the 1980 study were covered by offset provisions; 16 percent were in plans with integrated formulas for normal retirement benefits.[5] Such coordination typically was applicable to disability retirement, too.

Long-term disability insurance

A review of disability benefits must also consider long-term disability insurance, which often supplements or serves as an alternative to disability pensions. Generally, these payments begin after sick leave and accident and sickness insurance are exhausted and continue as long as a disabled employee remains incapacitated, or until retirement age is reached. Forty percent of persons covered by the Bureau's 1980 survey of employee benefit plans participated in long-term disability plans. Specified benefits, including payments from social security and other government programs such as workers' compensation, were usually a fixed percent of monthly earnings. Almost two-thirds of the participants were in plans designed to provide 50 to 60 percent of pre-disability earnings; however, resulting dollar benefits were often limited by maximum coverage restrictions so that persons with high earnings may receive a lower percent of earnings for disability benefits.[6]

As expected, long-term disability insurance plans were more prevalent where retirement pension plans provided deferred disability benefits. Table 2 shows that 89 percent of deferred plans were in establishments with long-term disability plans financed either solely by the employer or jointly by the employer and employees. Nine percent of the deferred disability retirement plans were in establishments providing an optional long-term disability plan paid for entirely by the employees. Thus, only 2 percent have workers who cannot receive immediately available disability benefits from private sources related to their employment.

Long-term disability insurance plans were less prevalent when pension plans provided immediate disability retirement benefits. Twenty-seven percent of these pension programs were tied in with the insurance plans.

Coordination of long-term disability benefits with disability pensions and social security was almost universal. The most common method of coordination was by offset; long-term disability benefits were reduced by the amount of private pension and social security a disabled worker received. The total benefit received by an employee covered by such a program was the amount specified by the long-term disability plan, generally 50 to 60 percent of pre-retirement earnings. Offset provisions were in four-fifths of the long-term disability plans in establishments with either immediate or deferred disability retirement benefits. Substantially all of the remainder specified an overall maximum benefit from all sources, most often 70 or 75 percent of pre-retirement earnings.

Table 2. Pension plans with deferred disability retirement provisions by service credited and integration with long-term disability insurance, medium and large establishments, 1980

Characteristic	Plans with deferred disability retirement	Percent of: Plans with deferred disability retirement	Percent of: All disability retirement plans
Service credited			
Total	278	100	32
Service when disabled	44	16	5
Service plus credit to normal or early retirement	215	77	25
Service plus partial credits	19	7	2
Integration with long-term disability insurance			
Total	278	100	32
Insurance paid by employer or jointly by employer and employee	248	89	29
Insurance paid entirely by employee	25	9	3
No insurance	5	2	1

NOTE: Because of rounding, sums of individual items may not equal totals.

Eligibility requirements

To qualify for a disability pension, a worker must meet the plan's definition of total and permanent disability and, frequently, a service requirement. A minimum age may also be specified. These requirements often differ from those applicable to social security disability benefits.

Definitions of disability. As a rule, definitions of disability are designed to make benefits available only to workers whose incapacities require them to withdraw from the labor force. About three-fourths of the disability retirement plans defined disability either in the same way as social security (25 percent) or more restrictively (48 percent). The Social Security Act defines disability as incapacity for substantial gainful work at any job that exists to a considerable extent in the U.S. economy; such incapacity is expected to result in death or to last for a year or more.[7] Many private plans have a more restrictive definition, stating that persons must be disabled for "any type of occupation or employment." Consequently, workers meeting the eligibility requirement of nearly three-fourths of the private plans also met the social security test.

However, one-fourth of the disability retirement plans defined disability as occurring when an employee was unable to continue in his or her job with the company. Individuals meeting this criterion would not necessarily qualify for social security disability benefits.[8] But, half of the plans containing this relatively liberal definition offered a supplemental benefit which continued until eligibility for social security disability or retirement benefits or a specified age, such as 65, for persons not covered by social security. In this manner, they provided benefits more comparable to those obtained by employees eligible for social security disability payments.

Age and service requirements. Comparison of findings of this study with those of a 1966 Bureau analysis[9] indicates a growing emphasis on service rather than on age in defining eligibility for disability pensions. This brings private plans closer to the social security approach, which now includes only a service requirement. (A minimum age requirement for social security disability benefits was removed in 1960.) The following tabulation summarizes the various age and service requirements made by the plans.

Requirements	*Number of plans*	*Percent of plans*
Total	861	100
No age or service	138	16
Service only	499	58
Age only	9	1
Age and service	112	13
Meets qualification for long-term disability benefits	103	12

Almost three-fifths of the disability retirement plans in the 1980 study included a service requirement, but did not specify a minimum age for benefits. The average length of service required by these plans was 11 years. This was more restrictive than the social security stipulation which stated that an individual must be fully insured[10] and work in covered service 20 of the last 40 quarters (5 of the last 10 years).

Only 14 percent of the plans specified a minimum age; most combined age and service requirements, commonly age 45 with 10 years of service or age 50 with 15 years of service. The average age requirement in these plans was 46 years. Just 1 percent of the plans had only an age requirement, averaging 54 years.

The remainder of the plans (241) did not specify either an age or a service requirement *per se*. However, more than 40 percent of this group required that the eligibility for associated long-term disability plans be met, which most often had a minimal service requirement.

Waiting periods. Immediate disability retirement and long-term disability benefits typically were payable after an initial waiting period, usually 5 or 6 months. The waiting period, similar to the 5 months imposed by social security, is designed to ensure the validity of a claim before initiating payment of long-term benefits. However, most of the employees in the study were covered during all or part of the waiting period by sick leave or short-term accident and sickness insurance.[11]

Illustrative benefits

The following replacement rates illustrate typical disability retirement benefits among various types of plans and relate benefit levels to pre-disability earnings. Replacement rates—ratios of disability benefits to pre-disability earnings—were calculated for a hypothetical employee, age 55, retiring on a disability pension after 20 years of service under his or her current private pension plan. This is in contrast to assumed normal retirement at age 65 after 30 years. The hypothetical employee also had been covered for 30 years under social security, and met the social security definition of disability. Earnings equaled the average in the broad industry group in which employed, and followed a typical growth pattern over the years.

As noted, the majority of private pension plans giving immediate disability benefits were not coordinated with long-term disability plans and provided pensions unreduced solely for early disability retirement age. These plans, under the hypothetical conditions, would provide a pension estimated to average 21 percent of pre-retirement earnings. Adding social security payments—32 percent—total benefits would be just over half of earnings before disability.[12]

Replacement rates would vary under alternative benefit formulas. For example, a small portion of immediate disability retirement plans actuarially reduce benefits for early retirement age. These plans would commonly replace only 8 percent of the earnings of the hypothetical worker,[13] resulting in combined private pension and social security benefits of two-fifths of pre-retirement earnings. (In practice, replacement rates would deviate from those calculated here, depending on the actual age-service status of individual disabled workers.)

Replacement rates in the immediate disability benefit plans studied would generally continue unchanged after normal retirement age, except for the 50 percent increase in social security benefits provided for married employees with one wage earner in the family.[14]

Table 3. Full-time participants in private pension plans by provisions for disability retirement, medium and large establishments, 1980

[In percent]

Characteristic	Participants			
	All	Professional and administrative	Technical and clerical	Production
Total with disability retirement benefits	87	85	81	91
Minimum requirements for disability retirement				
Total	100	100	100	100
No age or service	16	18	21	13
Age only	1	1	1	1
Service only	61	51	48	70
Age and service	11	9	11	12
No age or service — meets qualification for long-term disability benefits	11	21	18	5
Benefit provisions				
Total	100	100	100	100
Immediate disability retirement	70	52	51	84
Unreduced normal formula	55	41	39	67
Reduced normal formula	7	6	7	8
Other than normal formula[1]	8	6	5	10
Deferred disability retirement	30	47	49	16
With benefits based on:				
Service when disabled	5	6	7	4
Service plus credit to normal retirement date	24	39	38	12
Service with some credit	2	3	4	1

[1] Includes flat amount benefits, dollar amount formulas, percent of unreduced normal benefits less social security, and percent of earnings formulas both with and without social security offsets.

NOTE: Because of rounding, sums of individual items may not equal totals.

The discussion of replacement rates under immediate disability retirement plans has ignored long-term disability benefits which are available to only a small fraction of the workers affected. However, these benefits are the primary private source of pre-retirement age earnings when deferred disability pensions are provided. In these instances, long-term disability payments—combined with social security—commonly yield either 50 or 60 percent of pre-disability earnings.

Under deferred disability pension plans, replacement rates change at the normal retirement age, both because of the addition of spouse's benefits under social security and the switch from long-term disability to private pension benefits. As observed above, pension benefits normally reflect service credit for the period of long-term disability benefits. For a worker retiring at age 55, an additional 10 years of credit would, on the average, raise the pension at age 65 from 21 to 30 percent of pre-retirement earnings; total yield—including social security—would then be 62 percent for a single employee and 78 percent if married.[15] Deferred and long-term disability benefit packages were more prevalent among non-negotiated plans for salaried personnel than among collectively bargained plans for hourly rated employees; therefore, white-collar workers tended to enjoy higher replacement rates than blue-collar employees when retiring on disability.

Participants in pension plans

Estimates of the extent of worker participation in pension plans of medium and large establishments are found in *Employee Benefits in Industry, 1980*, Bureau of Labor Statistics, Bulletin 2107. Table 3 contains pertinent findings of that study. The findings, it should be stressed, are based on review of the same data source as was analyzed for the current article. As shown in the table, 70 percent of all participants in pension plans with disability retirement provisions could receive immediate retirement benefits. The present analysis found immediate benefits specified in 68 percent of the plans. The closeness of the two calculations is striking, even after recognizing that both percentages were derived from the same survey data.

A breakdown of findings by occupational group is available for plan participant data only. Among the findings is that deferred disability benefit plans are markedly more common for white-collar than for blue-collar employees. ☐

FOOTNOTES

[1] The survey is conducted in a sample designed to represent all private sector establishments in the United States, excluding Alaska and Hawaii, employing at least 50, 100, or 250 workers, depending on the industry. Industrial coverage includes: mining; construction; manufacturing; transportation, communications, electric, gas, and sanitary services; wholesale and retail trade; finance, insurance, and real estate; and selected services. For additional details on the survey, see *Employee Benefits in Industry, 1980*, Bulletin 2107 (Bureau of Labor Statistics, 1981). See also Robert Frumkin and William Wiatrowski, "Bureau of Labor Statistics takes a new look at employee benefits" in this issue of the *Review*.

While the bulletin contains information for a universe of employees, data tabulations in this article are simple counts of the number of pension plans containing the characteristics under analysis. The data relate solely to the specific plans included in the study. No attempt has been made to project findings to the entire universe of pension plans.

[2] For an independent source of data on the incidence of disability retirement plans, see Jonathan Sunshine, *Disability*, Office of Management and Budget Staff Technical Paper, 1979, p. 113. An earlier BLS study of disability benefits, which excluded both related long-term disability insurance and deferred disability benefits, is reported in Stanley S. Sacks, "Disability Benefits Under Private Pension Plans," *Monthly Labor Review*, April 1966, pp. 389–95.

[3] *Employee Benefits*, pp. 6, 25.

[4] Normal retirement is the point at which a worker can retire and immediately receive all accrued benefits by virtue of service and earnings, without reduction because of age.

[5] *Employee Benefits*, pp. 6, 25.

[6] *Ibid.*, p. 3.

[7] For a more complete definition see *Social Security Programs in the United States*, (Department of Health, Education, and Welfare, Social Security Administration, January 1973), p. 31.

[8] There may be differences among private plans and the social security system with respect to coverage of disabilities associated with nervous conditions, alcoholism, drugs, self-inflicted injuries, and criminal activity.

[9] Sacks, "Disability Benefits."

[10] Generally, to be fully insured a worker must have one quarter of coverage for each year from age 21 to date of disability.

[11] *Employee Benefits*, pp. 2–3.

[12] Coordination of private disability and social security benefits is accounted for in the calculation of the replacement rate for private benefits.

[13] The 8-percent replacement rate was derived by multiplying the unreduced normal retirement formula replacement rate of 21 percent by 39 percent. (As described above, plans actuarially reducing pensions for early retirement usually lowered benefits about 61 percent for quitting work 10 years before the normal retirement age.)

[14] Social security benefits are increased after each year in which the Consumer Price Index rises 3 percent or more. Such escalation is ignored in this analysis, because price changes cannot be accurately forecast.

[15] Both the 21-percent replacement rate for employees retiring under private pension plans with 20 years of service and the 30-percent rate for retirement after 30 years were derived by BLS from data in a study by James H. Schulz, Thomas D. Leavitt, Leslie Kelly, and John Strate, *Private Pension Benefits in the 1970's* (Bryn Mawr, Pa., McCahan Foundation, 1982). Schulz and his associates calculated replacement rates for retirements after varying lengths of service, for men and for women. Their calculations were based on an analysis of all pension plans in the 1979 BLS survey of employee benefit plans. The study calculated replacement rates for normal rather than disability retirement. However, because normal and disability retirement benefits are commonly based on the same formula, separate computations for disability retirement would not, in general, be appreciably different. For an earlier Schulz study, see James H. Schulz, Thomas D. Leavitt, and Leslie Kelly, "Private pensions fall far short of preretirement income levels," *Monthly Labor Review*, February 1979, pp. 28–32.

Bureau of Labor Statistics takes a new look at employee benefits

Initiated in 1979, annual survey provides a comprehensive study of benefit plan coverage and provisions in medium and large firms

ROBERT FRUMKIN AND WILLIAM WIATROWSKI

In 1981, employees in medium and large size establishments received, on average, about 10 paid holidays each year and nearly 16 days of paid vacation annually after 10 years of service. For 3 of 5 participants in a life insurance plan, coverage was based on earnings, with the prevalence of earnings-related plans much higher among white-collar employees. Seventy-one percent of the workers covered by the survey participated in health insurance plans that were fully paid for by their employers, and just under one-half also received employer-paid coverage for their dependents. Eighty-four percent of the employees were covered by private retirement pension plans (in addition to social security); 79 percent were in plans fully paid for by the employer.

As these statistics indicate, benefit plans are important elements in the typical employee compensation package. Employer outlays for legally required and private benefits, including paid leave, constituted about one-fourth of all expenditures for employee compensation in 1977, when this subject was last studied by the Bureau of Labor Statistics.[1] Moreover, the rate of growth in outlays for these benefits has substantially outpaced that for wages and salaries over the 40-year period since benefits began to gain prominence.

For many years, BLS tracked growth of benefit plans by studying both their provisions and their cost to employers.[2] Recently, BLS initiated an annual survey on the incidence and characteristics of employee benefit plans. This article describes the design, coverage, output, and availability of results from this new survey, which was first conducted in 1979.

The survey reports detailed characteristics of paid leave, insurance, and pension plans, yielding extensive data on employee benefit plan provisions. In addition, it produces estimates of the percent of employees covered by these plans or eligible for other benefits, such as profit sharing and educational assistance. Data are published for all full-time workers in three occupational groups: professional-administrative, technical-clerical, and production.

The program originally was designed to provide the Office of Personnel Management (OPM) with data on specific provisions of private sector employee benefits for a new approach to evaluating pay and benefits of Federal employees. This approach compares the Federal wage-benefit package with that in private industry.[3] (Current legislation requires that pay rates for Federal civilian workers, but not their benefits, be set on a comparability basis.) To meet OPM's needs, BLS developed a survey to provide extensive data on employee benefits, covering the same industry and size scope as the Bureau's annual Professional, Administrative, Technical, and Clerical Pay Survey that is currently used to evaluate Federal white-collar salary rates.[4]

Survey coverage

The employee benefits survey covers medium and large size private sector establishments in the contiguous United States, employing at least 50, 100, or 250 workers, depending on the industry. A subsample of

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1,500 establishments from the Professional, Administrative, Technical, and Clerical Pay Survey, covering a wide range of manufacturing and nonmanufacturing industries, is selected to yield national estimates.[5] Data are collected by personal visits of Bureau field representatives to the sampled establishments. Respondents are requested to provide data on the coverage and details of selected types of plans for paid time off—lunch time, rest periods, holidays, personal leave, vacations, and sick leave. Rather than ask company officials for extensive information, brochures are collected which contain descriptions of insurance and pension plan characteristics. Data are also obtained from the Department of Labor's Employee Retirement Income Security Act files.[6] Information on approximately 7,400 paid leave plans and 6,800 insurance and pension benefit plans were collected for analysis in the 1981 survey. The use of brochures for plan analysis eliminates some of the burden put on the respondent's time. Insurance plans included in the survey cover health, life, accident and sickness, and long-term disability benefits. Retirement pension plans are also studied in detail. Besides plan provisions, the number of persons participating in each plan is reported. Information also is collected on the percent of employees eligible for other benefits, such as profit-sharing and stock plans, employee discounts, educational assistance, and parking.

Because of their complexity, insurance and pension plans require the recording of considerable detail on benefit provisions. For each benefit, several common provisions are examined: eligibility requirements, in the form of age or service attainment, or both, which are necessary to join the plan; the waiting period before certain benefits begin; and cost of the plan to the employee. Plans for which an employee pays 100 percent of the cost are not included in the study.

Health insurance plan analysis includes provisions for hospital room and board, surgical care, doctor visits, diagnostic x-ray, prescription drugs, private duty nursing, and mental health care. In each of these areas, analysis covers such limitations on benefits as deductible and coinsurance provisions, maximum dollar amount payable, and maximum numbers of days covered. In addition, each plan is carefully studied for details of dental coverage, maternity care, and scheduled dollar amounts payable for certain surgical procedures.

In the examination of pension plans, age and service requirements are studied for normal, early, and disability retirement and for pension vesting (the point at which an employee has the legal right to some pension benefit regardless of any further service under the plan). The most significant feature of pension analysis is the review of the benefit formulas. A variety of formulas is used to determine retirement payments; for example, percentage of the employee's career or terminal earnings, or a dollar amount for each year an employee is covered under the plan. Other pension provisions analyzed are survivor benefits, reductions in pensions for early retirement, supplemental payments provided in addition to normal retirement benefits, and cost-of-living adjustments.

Life insurance plans are reviewed for the amount of insurance, effects of disability on the insurance contract, and payment for accidental death. Accident and sickness insurance analysis includes the weekly benefit formula and duration of benefits, while for long-term disability insurance, the analysis includes benefit amounts and the integration of long-term disability insurance payments with other sources of income, such as social security, workers' compensation, and railroad retirement.

As for paid time off, the amount of lunch and rest time is recorded, together with the number of holidays and personal leave days granted each year. Analysis of vacation plans includes development of a schedule showing the variations in vacation time and payments by length of service. A similar schedule reports sick leave benefits, showing the number of days paid at full pay, partial pay, or both, as well as any waiting period before benefits may begin. For both vacation and sick leave, the incidence of cash-in or carry-over provisions, or both, for unused benefits is noted.

Limited data are collected on a number of other benefit plans which may add significantly to employee com-

Table 1. Full-time employees participating in selected benefit plans, medium and large establishments, 1981

[In percent]

Plan	All employees	Professional and administrative employees	Technical and clerical employees	Production employees
Paid time off:				
Holidays	99	100	100	99
Vacations	99	100	100	99
Personal leave	23	31	32	14
Lunch period	10	4	4	15
Rest time	75	80	76	82
Sick leave	65	92	92	41
Accident and sickness insurance	50	30	35	66
Fully paid by employer	41	22	26	55
Long-term disability insurance	41	61	52	28
Fully paid by employer	32	47	40	23
Health insurance for employee	97	98	96	97
Fully paid by employer	71	67	58	79
Health insurance for dependents	94	96	91	94
Fully paid by employer	48	45	36	55
Life insurance	96	98	95	96
Fully paid by employer	81	81	78	82
Retirement pension	84	88	85	82
Fully paid by employer	79	81	80	77

NOTE: Participation is defined as coverage by a paid leave, insurance, or pension plan. Employees subject to a minimum service requirement before they are eligible for a benefit are counted as participants even if they have not met the requirement at the time of the survey. If employees are required to pay part of the cost of a benefit, only those who elect the coverage and pay their share are counted as participants. Benefits for which the employee must pay the full premium are outside the scope of the survey.

pensation, such as profit-sharing, savings, and stock plans. The incidence of these benefits is examined separately for each employee group in each establishment. In addition, data are collected on the full or partial defrayment of cost for relocation allowance, recreation facilities, subsidized meals, parking, educational assistance, and employer-provided automobiles.

Availability of results

Major survey findings are reported annually in a bulletin published by BLS. The data and analysis center on the extent of employee participation in specified benefit plans and the provisions of these plans. The results of the pilot survey (in 1979) were published in 1980 in a report entitled *Employee Benefits in Industry: A Pilot Survey.*[7] This report contained 20 tables on worker coverage under various types of provisions for paid leave, insurance, and pension plans. Data collected in 1980 are contained in a more comprehensive bulletin, *Employee Benefits in Industry, 1980*, and reflect improvements in survey procedures and techniques, as well as changes in benefit practices in private industry.

A bulletin with estimates from the 1981 survey, entitled *Employee Benefits in Medium and Large Firms, 1981*, will be available in early September.[8] The bulletin contains details on three employee groupings demonstrated in accompanying tables: all employees covered by the survey (table 1); employees who participated in a particular type of benefit plan (table 2); and employees covered by a particular type of provision within a benefit area to provide a closeup look at an important feature (table 3). In addition, articles on the results of additional research on various benefit plan provisions, such as the article on disability retirement in this issue, are occasionally published in the *Monthly Labor Review*. Other articles in preparation include the growth of major medical insurance coverage and spouse benefits in pension plans.

Employee benefit data collected during the annual survey, including detailed plan provisions and participant figures, are available on magnetic data tapes.[9] In accordance with a pledge of confidentiality to survey respondents, all information that could identify a specific reporting establishment is removed. The tapes may be used to derive national estimates, similar to those presented in the bulletin, for those provisions on the data base that are not regularly tabulated by BLS.

Future direction

This research program on incidence and characteristics of employee benefits evolved from a pilot study to an annual survey and is continuing to expand. More intensive methods of analysis, as well as an increased number of data items, will lead to the publication of more comprehensive findings. Currently, such subjects as Health Maintenance Organization coverage, social security offset and integration with pension benefits, and differences in benefits for production and white-collar workers are being researched on the basis of data collected in the 1981 survey.

Table 2. Participants in a pension plan by age and associated service requirements for normal retirement, medium and large establishments, 1981

[In percent]

Age and service requirements[1]	All participants	Professional and administrative participants	Technical and clerical participants	Production participants
No age requirement	14	6	7	22
Fewer than 30 years of service	(2)	(2)		(2)
30 years of service	14	5	7	21
More than 30 years of service	(2)	(2)	(2)	(2)
Age 55	4	7	4	3
20 years of service	2	6	3	(2)
25 years of service	(2)	(2)	(2)	(2)
30 years of service	2	1	1	3
Age 56 to 59	2	1	1	2
15 or 20 years of service	1	(2)	(2)	1
30 or more years of service	1	1	1	1
Age 60	[3]10	[3]13	[3]13	[3]6
No service requirement	2	4	3	1
10 years of service	2	2	3	2
15 years of service	1	2	2	1
20 or 25 years of service	(2)	(2)	1	(2)
30 years of service	3	3	3	2
More than 30 years of service	(2)	1	1	(2)
Age 62	[4]18	[4]19	[4]18	[4]19
No service requirement	4	4	5	3
5 years of service	1	1	1	1
10 years of service	8	7	6	10
15 years of service	2	2	2	1
20 or 25 years of service	2	2	1	2
30 years of service	2	2	2	1
Age 63 to 64	1	1	3	1
No service requirement	1	1	3	(2)
30 years of service	(2)	(2)	(2)	(2)
Age 65	[5]44	[5]44	[5]47	[5]42
No service requirement	39	42	45	35
5 years of service	1	1	(2)	1
10 years of service	3	1	2	5
15 years of service	(2)	(2)	(2)	(2)
Sum of age plus service	7	9	7	6
Equals less than 80	2	2	2	2
Equals 80	(2)	1	(2)	(2)
Equals 85	3	6	3	3
Equals 90 or more	1	1	2	1

[1] If a plan had more than one age and service requirement, the earliest age and associated service requirement was tabulated.

[2] Less than 0.5 percent.

[3] Includes 0.5 percent or fewer participants who were in plans with service requirements other than specified.

[4] Includes 0.7 percent or fewer participants who were in plans with service requirements other than specified.

[5] Includes 0.1 percent or fewer participants who were in plans with service requirements other than specified.

NOTE: Normal retirement is the point at which the participant could retire and immediately receive all accrued benefits by virtue of service and earnings, without reduction due to age. Because of rounding sums of individual items may not equal totals. Dashes indicate no employees in this category. Data are for full-time workers only.

Collection of benefit data for 1982 includes, for the first time, information on post-retirement pension increases. In addition, more detailed information is being secured on health and life insurance coverage for retir-

Table 3. Participants in health insurance plans with dental benefits, by type of procedure and extent of coverage, medium and large establishments, 1981

[In percent]

Type of dental procedure	Total	Scheduled cash allowance	Incentive schedule[1]	Percent of reasonable and customary charge: Total	50	60	61-74	75	80	85	90	91-99	100	Not covered
All participants														
Examinations	100	17	3	80	1	1	1	4	25	(2)	2	—	47	—
Dental x-rays	100	18	3	79	1	1	1	4	27	7	10	—	28	(2)
Fillings	100	29	3	66	3	1	1	5	33	8	10	—	7	(2)
Dental surgery	100	27	3	69	3	2	1	5	33	7	10	—	9	(2)
Periodontal care	100	26	3	68	5	2	1	4	31	8	10	—	7	3
Inlays	100	28	1	68	31	4	1	1	14	6	7	—	3	3
Crowns	100	29	1	68	32	4	1	1	13	6	7	—	3	2
Orthodontia	100	14	—	53	44	3	(2)	(2)	2	(2)	(2)	(2)	3	34
Professional and administrative														
Examinations	100	19	4	77	1	1	1	3	27	(2)	1	—	43	—
Dental x-rays	100	20	4	76	1	1	1	3	29	4	6	—	31	(2)
Fillings	100	31	4	65	4	2	1	3	38	6	6	—	5	(2)
Dental surgery	100	29	3	68	4	2	1	3	37	6	6	—	9	(2)
Periodontal care	100	28	3	67	6	3	(2)	3	35	7	6	—	7	2
Inlays	100	30	1	66	35	5	1	1	13	4	3	—	3	3
Crowns	100	30	1	66	35	6	1	1	13	4	3	—	3	2
Orthodontia	100	16	—	54	46	4	(2)	—	1	(2)	(2)	(2)	3	29
Technical and clerical														
Examinations	100	19	4	77	(2)	1	1	4	27	(2)	2	—	42	—
Dental x-rays	100	20	4	76	(2)	1	1	4	30	3	5	—	31	(2)
Fillings	100	34	4	62	3	2	1	4	35	4	5	—	6	(2)
Dental surgery	100	33	4	63	3	2	1	4	35	4	5	—	8	(2)
Periodontal care	100	30	4	63	5	3	(2)	4	33	4	5	—	8	2
Inlays	100	32	1	63	32	5	2	1	13	3	3	—	3	3
Crowns	100	33	1	63	32	6	2	1	13	3	3	—	2	3
Orthodontia	100	16	—	47	37	3	(2)	2	2	(2)	(2)	(2)	2	37
Production														
Examinations	100	15	2	83	1	1	(2)	5	23	(2)	2	—	51	—
Dental x-rays	100	15	2	82	1	1	(2)	5	25	10	15	—	28	—
Fillings	100	26	2	72	2	1	1	6	30	11	14	—	7	(2)
Dental surgery	100	24	2	73	2	1	1	6	30	9	14	—	10	(2)
Periodontal care	100	23	2	71	4	1	1	6	29	11	14	—	7	3
Inlays	100	25	1	72	29	3	1	1	14	9	11	—	3	3
Crowns	100	26	1	72	29	3	1	1	14	9	11	—	3	2
Orthodontia	100	12	—	54	47	2	(2)	(2)	2	(2)	(2)	—	3	34

[1] Reimbursement arrangement in which the percentage of dental expenses paid by the plan increases if regular dental appointments are scheduled.

[2] Less than 0.5 percent.

NOTE: Because of rounding, sums of individual items may not equal totals. Dashes indicate no employees in this category. Data are for full-time workers only.

ees. Unscheduled post-retirement pension increases are being analyzed along with pension formula provisions. Retiree health and life insurance coverage is now studied as well as the cost of this insurance to the retiree.

Information from this survey is helpful to a range of users, including personnel managers, employee benefit administrators, and industrial relations managers in private industry; unions; government agencies; academic researchers; and consultants, to name a few. To provide more comprehensive information to these users, BLS is investigating the possibility of expanding the scope of the survey to include small establishments and to cover some of the currently excluded industries. The survey's content and procedures will be evaluated continuously and additional analysis on private sector employee benefits will be developed as appropriate. □

FOOTNOTES

[1] *Employee Compensation in the Private Nonfarm Economy, 1977,* Summary 80-5 (Bureau of Labor Statistics, 1980), p. 3, table 1.

[2] For example, major provisions of benefit plans were summarized periodically and published in the Bureau of Labor Statistics' *Digest of Selected Health and Insurance Plans* and *Digest of Selected Pension Plans.* The series ran from 1955 to 1979. In addition, surveys of expenditures for employee compensation were conducted in the 1959–77 period. These programs have been discontinued because of budget constraints. The Bureau's Employment Cost Index, a quarterly measure of change in the rate of compensation, includes benefits as well as wages and salaries.

[3] The Office of Personnel Management processed the Bureau's 1979 and 1980 employee benefits data base through their total compensation comparability computer system. See Office of Personnel Management, *Total Compensation Comparability: Background, Method, and Preliminary Results,* July 1981, for a description of the total compensation comparability program.

[4] Technical specifications for the salary survey are in *National Sur-*

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vey of *Professional, Administrative, Technical, and Clerical Pay, March 1981, Bulletin 2108* (Bureau of Labor Statistics, 1981). The survey collects pay data for occupations defined to reflect duties and responsibilities of employees in private industry and that correspond to specific General Schedule grades in the Federal sector. Hence, the establishments selected for the survey are limited to those likely to have positions similar to those in the Federal service. For this reason, small establishments (fewer than 50, 100, or 250 employees, depending on the industry) and some industries (primarily in the services sector) are excluded from the scope of the PATC survey. Industrial coverage includes: manufacturing; mining; construction; transportation, communications, electric, gas, and sanitary services; wholesale trade; retail trade; finance, insurance, and real estate; and selected services. The selected services are limited to business services such as advertising, credit reporting and collection agencies, computer and data processing services, research and development laboratories, commercial testing laboratories, and management and public relations services; engineering and architectural services; noncommercial research organizations; and accounting, auditing, and bookkeeping services.

For an account of the sampling techniques, see the Technical Note in *Employee Benefits in Industry, 1980*, Bulletin 2107 (Bureau of Labor Statistics, 1981).

The Employee Retirement Income Security Act of 1974 requires benefit plan administrators to file summary plan descriptions with the Department of Labor. A summary plan description gives information on what the plan provides and how it operates and must be updated within 210 days after the end of the plan year (calendar or fiscal) in which the change is adopted.

Employee Benefits in Industry: A Pilot Survey, Report 615 (Bureau of Labor Statistics, 1980).

Employee Benefits in Medium and Large Firms, 1981, Bulletin 2140 (Bureau of Labor Statistics, forthcoming), for sale by the Superintendent of Documents, Washington 20402, or by BLS regional offices listed on cover.

The tapes may be purchased from the Office of Wages and Industrial Relations, Bureau of Labor Statistics, Washington, D.C. 20212.

A note on communications

The *Monthly Labor Review* welcomes communications that supplement, challenge, or expand on research published in its pages. To be considered for publication, communications should be factual and analytical, not polemical in tone. Communications should be addressed to the Editor-in-Chief, *Monthly Labor Review*, Bureau of Labor Statistics, U.S. Department of Labor, Washington, D.C. 20212.

Research Summaries

Weekly family earnings: a quarterly perspective

HOWARD HAYGHE

Most American families depend on wages and salaries for their livelihood. About 74 percent receive wage or salary earnings while another 7 percent obtain earnings solely from self employment. The rest—18.4 percent—report no earnings whatsoever, living instead on income from public or private pensions, social security, investments, personal savings, public assistance, or other sources.

A statistical series, introduced by the Bureau of Labor Statistics in 1980, provides information on the combined usual weekly wage and salary earnings of families on a quarterly basis.[1] Separate earnings statistics are also published for families with at least one unemployed member. Such information can be of value to policymakers and analysts concerned with how changes in employment, unemployment, and wages affect the economic well-being of American families.

Prior to 1980, the BLS had published statistics on usual weekly earnings by demographic characteristics, but only on an annual basis.[2] Such once-a-year observations were limited in their capacity to record the impact of economic changes. While an older monthly series on average weekly and hourly earnings from payroll records is more timely and provides detail by industry and geographic area, it does not include demographic or family information.[3]

This article discusses the newer, family-oriented earnings series, and focuses on the earnings situations of various categories of families at the end of 1981. Also discussed are developments in unemployment and inflation as they relate to family earnings.

Earnings by family type

There were about 60.1 million families in the United States in the fourth quarter of 1981. Of these, a little over 11 million had no employed members, more than 4.3 million had only self-employed workers, and another 4.2 million had both self-employed and wage and salary workers. The remaining 40.5 million families had only wage and salary workers (table 1). Because information is not collected on the earnings of the self-employed in the Current Population Survey, the following discussion focuses on those families with only wage and salary employment.

More than half of the 40.5 million wage-earning families contained at least two workers (table 2). At $585, the median weekly earnings of these families were nearly twice the earnings of families with one worker ($299). The fact that so many families now have two workers or more is directly attributable to the dramatic changes in women's labor force behavior over the past decade or so. During the 1970's—despite two recession periods—the number of working women grew by an average of about a million a year, and more than half of these women were wives. Also accelerating the trend toward two-worker couples was the tendency of couples to either postpone having children or to have fewer of them, and the willingness of mothers to enter or reenter the labor force sooner after childbirth than in the past. In March 1970, for instance, 24 percent of the wives with children under age 2 were in the labor force. Ten years later, the proportion was 39 percent.

Among married-couple families, about 19 million, or 58 percent of those with wage and salary earnings, had at least two workers in the fourth quarter of 1981. The median weekly earnings of such families were $601, compared with $336 for the 13.9 million one-worker families. Whether for one-earner or multiple-earner families, earnings were highest when the husband worked. For example, in one-earner families, median earnings were $383 when the husband worked, but were between $179 and $198 when the wife or some other family member was the only person employed. For those with at least two wage and salary workers, where the husband worked, usual median family earnings ranged from $574 to $780, depending on which other family members were also employed. In contrast, when the husband was not working, median family earnings were $380 and a little over $400.

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As has long been the case, families maintained by women are characterized by very low earnings.[4] Moreover, the number of such families has grown considerably over the last decade; in March 1970, they numbered 5.6 million and by the end of 1981, they totaled 9.3 million. In the latter year, median weekly earnings of the 5.9 million families maintained by women with wage and salary workers were only about half those of married couples. The low earnings reflect both the small proportion of such families having two workers or more, as well as the generally low earnings of women who maintain their own families. Fewer than 3 out of 10 families maintained by women contained more than one worker.

To a certain extent, the low earnings levels of women maintaining families are a result of fewer years of schooling. A relatively high proportion who were in the labor force—over one-fourth—had not completed high school. And, as is well known, a high school diploma is frequently either the key to higher-paying jobs or to the additional training needed to compete for these occupations. Women maintaining families are also more likely than wives to have preschool children whose presence may restrict not only the mother's job-seeking efforts but her choice of jobs as well.

Race and Hispanic origin. Weekly earnings for black married couples ($412) were 84 percent of those of whites ($492), and Hispanic family earnings averaged 80 percent of white family earnings:

	White	*Black*	*Hispanic*
Married-couple families	$492	$412	$394
Families maintained by women . . .	252	226	225
Families maintained by men	413	353	263

The earnings of black and Hispanic families that were maintained by women were 90 percent of those of their white counterparts.

The primary factor underlying the racial or ethnic differentials in earnings among married-couple families is the level of the husbands' earnings. White husbands working full time had median usual weekly earnings of $402 in the fourth quarter, compared with around $300 for black or Hispanic husbands. These earnings differences can be largely attributed to the fact that black and Hispanic husbands tend to work in occupations that are relatively low-paying. In March 1981, for example, about half of the black and Hispanic husbands working full time were operatives, laborers, or service workers, compared with one-fourth of the white husbands. In contrast, 37 percent of the white husbands were in professional or managerial jobs, compared with 17 percent of black or Hispanic husbands.

Table 1. Distribution of families by weekly earnings status, fourth quarter 1981

[Not seasonally adjusted]

Weekly earnings status	Number (in thousands)	Percent
Total families	60,077	100.0
No earnings	11,074	18.4
With earnings	49,002	81.6
With self-employed workers only	4,324	7.2
With wage or salary workers	44,678	74.4
Husbands, wives, or householders self-employed	4,166	6.9
All other families with wage or salary workers[1]	40,513	67.4

[1] May include some members (other than husband, wife, or householder) who were self-employed.

NOTE: Due to rounding, sums of individual items may not equal totals.

Table 2. Median weekly earnings by type of family, and number and relationship of workers, fourth quarter 1981

[Not seasonally adjusted]

Type of family and relationship of worker(s)	Number (in thousands)	Percent	Median earnings
Total families with wage or salary workers[1]	40,513	100.0	$442
One worker	19,304	47.6	299
Two workers or more	21,209	52.4	585
Married-couple families	32,920	100.0	486
One worker	13,949	42.4	336
Husband	11,077	33.6	383
Wife	2,227	6.8	179
Other family member	644	2.0	198
Two workers or more	18,972	57.6	601
Husband and wife only	13,204	40.1	574
Husband, wife, and other(s)	2,895	8.8	780
Husband and other family member(s)	2,318	7.0	603
Wife and other family member(s)	408	1.2	380
Other family members only	146	.4	405
Families maintained by women[2]	5,889	100.0	245
One worker	4,274	72.6	204
Householder	3,331	56.6	212
Other family member	943	16.0	176
Two workers or more	1,615	27.4	399
Families maintained by men[2]	1,704	100.0	405
One worker	1,082	63.5	327
Householder	857	50.3	368
Other family member	225	13.2	204
Two workers or more	622	36.5	545

[1] Excludes families in which the husband, wife, or householder is self-employed.

[2] No spouse present.

NOTE: Due to rounding, sums of individual items may not equal totals.

Inflation. For families with wage and salary earners, there was not as much loss in purchasing power in 1981 as during the year before (table 3). Between the fourth quarters of 1980 and 1981, median weekly earnings of families grew by 6.5 percent, while consumer prices (as measured by the CPI-W)[5] advanced by 9.4 percent. Families with two or more wage and salary workers nearly kept pace with rising prices but the earnings of one-worker families grew by only 4.5 percent in nominal terms and thus declined considerably in real terms. In the previous year, the increase in earnings (7.0 percent) offset only a little more than half the rise in prices (12.6 percent).

Earnings of married-couple families rose 9.0 percent from a median of $446 in the fourth quarter of 1980 to $486 in the fourth quarter of 1981. Weekly earnings of families where there was only one worker advanced by 5.0 percent while the earnings of two-worker families increased by 8.9 percent. In contrast, the usual weekly median earnings of families maintained by women advanced at a slower pace—7.0 percent.

Unemployment and family earnings

Unemployment grew rapidly during the closing months of 1981. The national unemployment rate jumped from 7.3 percent in August (a level which had been maintained throughout most of the calendar year) to 8.8 percent in December 1981. As a result, the number of families with unemployed members rose by about 800,000, or 14 percent, over the year ending in the fourth quarter of 1981. However, this increase was not as steep as the rise during the year ended in the fourth quarter of 1980 when the number of families with unemployed members grew by 27 percent.

In the fourth quarter of 1981, nearly 6.6 million families (over 10 percent of all families) contained at least one unemployed person; 1.8 million of these had no earners (table 4). In 7 out of 10 married-couple families with both wage and salary workers and unemployed members, the wife, son, or daughter (or some other member) was jobless, not the husband. Likewise, in nearly 90 percent of the families maintained by women and 75 percent of those maintained by men, the unemployed member was someone other than the householder.

Median usual weekly earnings for the 4.3 million families with both unemployed members and wage and salary workers in the fourth quarter were $312. Married-couple families reported median earnings of $335 a week—about 45 percent higher than the earnings of families maintained by women ($231) and 19 percent more than those of families maintained by men ($282).

Table 3. Total weekly wage and salary earnings of families by number of workers and family type, quarterly averages, 1979–81

[Not seasonally adjusted]

Type of family and number of workers	Median earnings			Percent change	
	1979 IV	1980 IV	1981 IV	1979 IV to 1980 IV	1980 IV to 1981 IV
Total families with wage or salary workers[1]	$388	$415	$442	7.0	6.5
One worker	271	286	299	5.5	4.5
Two workers or more	495	539	585	8.9	8.5
Married-couple families	419	446	486	6.4	9.0
One worker	305	320	336	4.9	5.0
Two workers or more	509	552	601	8.4	8.9
Families maintained by women[2]	217	229	245	5.5	7.0
Families maintained by men[2]	349	385	405	10.3	5.2
Consumer Price Index[3]	—	—	—	12.6	9.4

[1] Excludes families in which the husband, wife, or householder is self-employed.

[2] No spouse present.

[3] For Urban Wage Earners and Clerical Workers.

Table 4. Families with unemployment by presence and relationship of worker(s) to unemployed members, total weekly wage and salary earnings, and family type, fourth quarter 1981

[Not seasonally adjusted]

Type of family and relationship of worker(s) to unemployed	Number (in thousands)	Percent	Median earnings
Total families	6,588	100.0	—
No one employed[1]	1,843	28.0	—
Some employed, no wage or salary workers	290	54.4	—
With wage or salary workers	4,455	67.6	—
Husband, wife, or householder self-employed	191	2.9	—
All other families	4,265	64.7	$312
Married-couple families	3,326	100.0	335
Husband unemployed	961	28.9	193
Wife only worker	785	23.6	185
Wife and other worker(s)	105	3.2	332
Other worker(s) only	71	2.1	(2)
Wife unemployed	1,095	32.9	338
Husband only worker	933	28.1	319
Husband and other worker(s)	147	4.4	520
Other worker(s) only	14	.4	(2)
Other member(s) unemployed	1,271	38.2	493
Husband or wife worker	599	18.0	408
Husband and wife workers	613	18.4	619
Other combinations of workers	59	1.8	(2)
Families maintained by women[3]	731	100.0	231
Householder unemployed	88	12.0	(2)
Other member(s) unemployed	643	88.0	236
Families maintained by men[3]	208	100.0	282
Householder unemployed	51	24.5	(2)
Other member(s) unemployed	157	75.5	330

[1] May include small number of families in which the only worker is an unpaid family worker.

[2] Median not shown where base is less than 100,000.

[3] No spouse present.

NOTE: Due to rounding, sums of individual items may not equal totals.

For the most part, the earnings of families with unemployment depend on which family member is jobless. In married-couple families with an unemployed husband, earnings averaged $193 a week in the fourth quarter of 1981, compared with $338 for families with a jobless wife, and $493 when some member other than the husband or wife was unemployed. Furthermore, these medians varied considerably depending on which family members were working. For instance, in families with an unemployed husband and a working wife, earnings totaled $185 a week; but, when the wife was joined by other family workers, earnings were $332.[6]

INCREASINGLY, POLICY-ORIENTED ANALYSES and interpretations of the family earnings data will involve consideration of long-term demographic trends. For instance, as the population ages, growing numbers of families will contain persons past retirement age. Also, divorce and separation may continue to raise the proportion of families that are not married couples. Moreover, because of these trends as well as others related to family formation and dissolution, the number of married couples is projected to increase more slowly in coming years. Such changes will undoubtedly have some impact on the family earnings profile. Thus, to understand the significance of changes in family earnings, analysts will need to examine the many demographic trends relating to families. □

FOOTNOTES

[1] The Bureau of Labor Statistics first released quarterly family earnings data in a press release entitled "New Data Relate Workers' Earnings to the Families in Which They Live," USDL 80–188, Mar. 27, 1980. The data continue to be published on a quarterly basis.

Earnings information is obtained from the Current Population Survey (CPS) only for families with wage or salary workers. The CPS is a sample survey of some 60,000 households (65,000 prior to May 1981) conducted monthly for the Bureau of Labor Statistics by the Bureau of the Census, with coverage in all 50 States and the District of Columbia. The survey provides basic information on the labor force, employment, and unemployment. The earnings information is collected each month from only a quarter of the sample and cumulated to provide quarterly and annual estimates. For a description of the procedures used to develop the weekly earnings data, see *Technical Description of the Quarterly Data on Weekly Earnings from the Current Population Survey,* Bulletin 2113 (Bureau of Labor Statistics, 1982).

[2] For an extensive discussion of these data, see *Weekly and Hourly Earnings Data from the Current Population Survey,* Special Labor Force Report 195 (Bureau of Labor Statistics, 1977).

[3] For a description of these data, see "Explanatory Note" in *Employment and Earnings,* January 1981, pp. 228–35.

[4] See Beverly L. Johnson, *Women Who Head Families,* Special Labor Force Report 213 (Bureau of Labor Statistics, 1978).

[5] The CPI-W refers to the Consumer Price Index for Urban Wage Earners and Clerical Workers. For a discussion of the general method of computing the Consumer Price Index, see *The Consumer Price Index: Concepts and Contents over the Years,* Report 517 (Bureau of Labor Statistics, 1978).

[6] It should also be noted that in 1981, on average, about 2.9 million people a week received unemployment insurance benefits which averaged a little over $100. Data on unemployment insurance recipients and amounts can be obtained from the U.S. Department of Labor, Employment and Training Administration, Unemployment Insurance Service, Division of Actuarial Services.

[7] For a discussion of demographic trends and how they will affect families by the end of the century, see George Masnick and Mary Jo Bane, *The Nation's Families: 1960–1990* (Joint Center for Urban Studies of MIT and Harvard University, 1980).

Analysis of work stoppages in the Federal sector, 1962–81

EUGENE H. BECKER

Since 1962, 39 work stoppages by Federal Government workers have been recorded by the Bureau of Labor Statistics and the Office of Personnel Management.[1] These stoppages occurred despite legislation explicitly prohibiting any type of strike activity by Federal workers.

The statutory prohibition began with the Lloyd-LaFollette Act of 1912. This act gave postal workers the right to organize, as long as they did not join unions asserting the right to strike.[2] Later, the strike ban was extended to cover other Federal workers and was codified in section 305 of the Labor-Management Relations Act of 1947, which read, in part:[3]

> It shall be unlawful for any individual employee of the United States or any agency thereof including wholly owned government corporations to participate in any strike. Any individual employed by the United States or any such agency who strikes shall be discharged immediately from his employment, and shall forfeit his civil-service status, if any, and shall not be eligible for reemployment for three years by the United States or any such agency.

Criminal penalties were added to the body of antistrike legislation in 1955.[4] In 1966, strike activity by Federal workers was further proscribed in the U.S. Code relating to Federal employment. The statutes prohibited the holding of a Federal job by persons who (1) participate in a strike, (2) assert the right to strike, or (3) belong to an organization that asserts the right to strike against the U.S. Government. The penalties for noncompliance were a fine of not more than $1,000, or a jail sentence of up to a year and a day. More recently, the ban on Federal strike activity has been codified in Title VII of the Civil Service Reform Act of 1978, which states that, for a Federal employee, " . . . it shall be an unfair labor practice . . . to call, or participate in, a strike, work stoppage or slowdown, or picketing of an agency in a labor-management dispute if such picketing interferes with an agency's operations, or . . . to condone any activity described in this paragraph by failing to take action to prevent or stop such activity . . . ."[5]

In 1971, the United Federation of Postal Clerks challenged the constitutionality of the laws proscribing strike activity by U.S. Government employees.[6] Among other complaints, the union contended that terms such as "strike" and "participates in a strike," language common to all the laws in question, are so vague as to be unconstitutional. However, the court held that there was no vagueness in the two terms, and that, indeed, they "occupy central positions in our labor statutes and accompanying case laws . . . ." Subsequently, the U.S. Supreme Court affirmed the ruling of the lower court that the laws under attack were constitutional.[7]

Work stoppages by Federal employees occurred as far back as 1835, when civilian blue-collar yard workers of the Navy Department in Washington, D.C., struck over working hours and for a "general redress of grievances."[8] After appealing to the Secretary of the Navy, but gaining little satisfaction, the workers returned to

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Table 1. Work stoppages by Federal employees, 1962–81

Beginning date	Duration (calendar days)	Establishment and location	Union involved	Workers involved	Issues	Penalties
1962: Jan. 16	2	Tennessee Valley Authority, Paradise Power Plant: Drakesboro, Ky.	International Brotherhood of Electrical Workers (AFL-CIO)	190	Dispute over alleged unsafe working conditions	Employees returned to work without penalty after labor-management interviews.
Mar. 16	6	Tennessee Valley Authority, Paradise Power Plant: Drakesboro, Ky.	International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America (Ind.)	85	Assignment of truck driving duties to driver temporarily idle	Employees returned to work following labor-management interviews; three employees were suspended for 28 days.
June 20	10	Tennessee Valley Authority, Paradise Power Plant: Drakesboro, Ky.	International Brotherhood of Boilermakers, Iron Shipbuilders, Blacksmiths, Forgers and Helpers (AFL-CIO); International Association of Bridge, Structural and Ornamental Iron Workers (AFL-CIO)	350	Jurisdictional dispute over erecting slag tanks by employees represented by Iron Workers	Employees returned to work without penalty after labor-management interviews.
July 30	24	Tennessee Valley Authority, Paradise Power Plant: Drakesboro, Ky.	Sheet Metal Workers International Association (AFL-CIO)	2,500	Work assignment procedures and pay scales	Employees returned to work following labor-management interviews; the 85 sheet metal workers who began the stoppage were fired.
1968: Nov. 30	3	St. Elizabeth Hospital: Washington, D.C.	American Federation of State, County and Municipal Employees (AFL-CIO)	103	Alleged violation of position classification standards, work relationships, and laundering of uniforms of male nursing assistants	Issues settled through labor-management meetings. No penalties were imposed.
Dec. 11	8	Tennessee Valley Authority, Brown's Ferry Nuclear Plant: Athens, Ga.	International Brotherhood of Electrical Workers (AFL-CIO)	1,496	Suspension of entire electrical crew for violating published job rules	Employees returned to work without penalty following labor-management interviews.
Oct. 9	2	Hunter's Point Naval Shipyard: San Francisco, Calif.	Laundry and Dry Cleaning International Union (AFL-CIO)	80	Grievance procedures, working conditions, and disciplinary actions	Employees returned to work without penalties when shipyard agreed to immediate negotiations on a contract.
1969: June 18	2	Federal Aviation Administration: interstate	Professional Air Traffic Controllers Organization (AFL-CIO)	485	Alleged remarks made by head of FAA downgrading the role of controllers in policing air traffic	About 100 workers were temporarily suspended and PATCO lost its dues check-off privileges.
July 1	2	U.S. Post Office Department: New York City	National Association of Letter Carriers (AFL-CIO); National Postal Union (Ind.)	72	Size of second year wage increase	Employees called in sick; those found not to have been sick were placed on leave without pay for 2 weeks.
1970: Mar. 18	9	U.S. Post Office Department; nationwide	National Association of Letter Carriers (AFL-CIO); National Postal Union (Ind.); United Federation of Postal Clerks (AFL-CIO); The National Association of Special Delivery Messengers (AFL-CIO)	152,100	Retroactive pay increase, postal reform, and compression of pay schedule	All issues were settled by special legislation (PL 91-23), which provided for a 6-percent retroactive pay increase and the enactment of the Postal Reorganization and Salary Adjustment Act. No penalties were imposed.
Mar. 25	22	Federal Aviation Administration: nationwide	Professional Air Traffic Controllers Organization (AFL-CIO)	2,319	Employee reassignment, mediation of grievances, and union recognition	66 controllers were fired; about 1,800 were suspended 1 day for each day they stayed off the job.
May 25	1	U.S. Government Printing Office; Washington, D.C.	Columbia Typographical Union (AFL-CIO)/International Typographical Union	1,400	Manner in which the pay-setting formula was applied	Formula was revised. No penalties were imposed.
June 8[1]	7	U.S. Department of Agriculture: Alabama	American Federation of Government Employees (AFL-CIO)	Not known	Federal poultry inspectors refused to cross a National Farmer's Organization picket line for fear of physical harm	Inspectors who had not reported for work were considered absent without leave and were not paid for the time of their absence.
1971: April 5	10	Tennessee Valley Authority, Nuclear Project: Daisy, Tenn.	International Association of Bridge, Structural and Ornamental Iron Workers (AFL-CIO)	990	Work assignment	No information available.
May 4[1]	3	Department of Housing and Urban Development: Washington, D.C.	None	175	Alleged bias in employment practices	Some employees were charged with being absent without leave; others were warned about their actions.
June 17[1]	1	Naval Publication and Forms Center: Philadelphia, Pa.	Laborer's International Union of North America (AFL-CIO) was official representative but judged not to be involved	19	Dissatisfaction over workload and low pay	Involved workers were listed as absent without leave and given formal letters of reprimand; two supervisors were given 1-day suspensions.
June 23	5	Library of Congress; Washington, D.C.	None	35	Wages and working conditions	All employees suspended and ordered to report back to work; 13 who did not were fired.
1973: Jan.[1]	1	St. Elizabeth Hospital: Washington, D.C.	None	14	Position classification	Letter given to each employee spelling out the illegality and consequences of concerted actions against the Federal Government.
May 1[1]	5	Army Air Force Exchange: Charleston, Ohio	American Federation of Government Employees (AFL-CIO)	61	Job classification	Three employees were discharged; the others were not paid for the time they were out.
July 31[1]	1	Air Force base post exchange, Ft. Dix; McGuire, N.J.	None	60	Reduction in workweek from 40 to 35 hours	No penalties were imposed.
Sept. 24	12	Tennessee Valley Authority, Brown's Ferry Nuclear Construction Site: Athens, Ala.	United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States (AFL-CIO)	460	Hiring of nonunion welders because union allegedly did not furnish TVA with union welders	Following labor-management interviews, 165 steamfitters were fired; others returned to their jobs.

Table 1. Continued — Work stoppages by Federal employees, 1962–81

Beginning date	Duration (calendar days)	Establishment and location	Union involved	Workers involved	Issues	Penalties
1974: Jan. 21	4	U.S. Postal Service: Jersey City, N.J.	American Postal Workers Union (AFL-CIO)	475	Change in working hours	U.S. District Court ordered workers to return to work and submit grievances to arbitration.
May 1[1]	2	Mare Island Naval Shipyard: California	Metal Trades Council	80	Change in pay structure	Employees were not paid for the days they were out.
May 9	3	Army and Air Force Exchange Service: Charlestown, Ind.	American Federation of Government Employees (AFL-CIO)	64	Protest over Department of Defense wage and salary survey	Employees returned to work without penalty following labor-management talks.
May 16[1]	3	Puget Sound Naval Shipyard: Washington	Metal Trades Council	60	Change in pay structure	Employees were not paid for the days they were out.
May 16	1	Washington National Airport Police: Virginia	International Brotherhood of Police Officers (NAGE)	33	New work rules prohibiting airport police officers from carrying home their service revolvers	No penalties were imposed.
1977: June 30[1]	1	Federal Aviation Administration: Los Angeles/Oakland, Calif.	None	16	Job classification	No penalties were imposed.
1978: July 21	8	U.S. Postal Service Bulk Mailing Center: New Jersey and California	American Postal Workers Union (AFL-CIO)	4,750	Dissatisfaction over terms of tentative agreement reached by union and Postal Service (main issue was size of wage increase)	About 125 workers were fired, 120 temporarily suspended, and 2,500 received letters of warning.
1979: Nov. 11[1]	1	Norfolk Naval Shipyard: Virginia	None	23	Pay rules in effect for trial run of new aircraft carrier	No penalties were imposed.
1980: April 21[1]	1	Department of Energy (Phoenix Western Area Power Administration): Arizona	None	60	Retroactive pay	Involved workers charged with being absent without leave.
June 20[1]	1	Department of the Interior (Grand Coulee Dam): Arizona	International Brotherhood of Electrical Workers (AFL-CIO)	183	Protest over size of Federal wage increase	No penalties were imposed.
June 25[1]	1	U.S. Army Corps of Engineers (hydoelectric dams in Oregon, Idaho, Washington, and Montana)	None	250	Protest over size of Federal wage increase	59 workers were reprimanded.
July 28	10	Tennessee Valley Authority, Phipps Bend Nuclear Plant: Surgoinsville, Tenn.	15 construction unions	900	Discharge of ironworker who allegedly struck supervisor.	42 workers were fired and 210 were suspended for 1 year.
Aug. 5[1]	1	Immigration and Naturalization Service: New York City	American Federation of Government Employees (AFL-CIO)	50	Immigration and Naturalization Service policy towards Iranians	No penalties were imposed.
Aug. 19[1]	1	Veterans Administration: Denver, Colo.	None	12	Disapproval of proposed pay raises	Involved workers charged with being absent without leave and reprimanded.
Sept. 17[1]	1	Federal Aviation Administration: Anchorage, Alaska	None	15	Recruitment policies	Involved workers charged with being absent without leave and reprimanded.
Dec. 15[1]	1	Veterans Administration Hospital: Los Angeles, Calif.	None	13	Disapproval of proposed special pay rates	Involved workers charged with being absent without leave and reprimanded.
Dec. 20[1]	1	Veterans Administration Hospital: San Francisco, Calif.	None	18	Pay comparability	Involved workers charged with being absent without leave and reprimanded.
1981: Aug. 3	81	Federal Aviation Administration: nationwide	Professional Air Traffic Controllers Organization (AFL-CIO)	12,500	Size of wage increase, length of workweek, and early retirement	About 11,500 workers who did not return to work during a presidentially mandated grace period were fired.

[1] Information provided by the Office of Labor-Management Relations of the Office of Personnel Management (formerly the U.S. Civil Service Commission).

their jobs. Between 1835 and 1937, there were at least 25 other stoppages by Federal employees, mostly civilian blue-collar workers of the Army and Navy Departments. These stoppages were "primarily strikes of mechanics for wage and hour improvements just as were strikes of such workers in the private sector."[9]

There were some exceptions to the general rule of Federal strikes by only blue-collar workers. For example, in 1907, 26 postal employees in Butte, Mont., struck over wage and reclassification issues. Eight of them were replaced when they failed to return to their jobs. In 1937, a strike by Federal public health workers ended when the national union, the American Federation of Government Employees, expelled the local for violating the no-strike clause in its constitution.

Between 1937 and 1957, the Bureau of Labor Statistics did not keep separate statistics on Federal strikes. Rather, it distributed such data among the industries in which the strike occurred. There were no Federal strikes during 1958–61. However, between 1962 and 1981, there were 39 stoppages involving Federal workers.[10] (See table 1.) No stoppages occurred in 8 of the years, and almost a quarter of them occurred in 1980.

All types of workers — blue-collar, white-collar, service, professional and technical, and laborers—have participated in strikes against the Federal Government. Eight of the 39 strikes involved construction workers at Tennessee Valley Authority installations, most of which were under construction at the time of the strike; four involved postal carriers and mail clerks, and the 1970 postal strike involving 150,000 workers was the largest Federal stoppage; air traffic controllers participated in five strikes, including an 81-day dispute in 1981, the longest Federal strike on record, which resulted in the firing of approximately 11,500 controllers; U.S. Naval shipyards had four stoppages; Army and Air Force post exchanges and the Veterans Administration each had three; and other Federal stoppages involved police, hospital workers (nurses' aides), custodial workers, typographers, and clerical workers. (See table 1.)

The issues surrounding Federal work stoppages were as broad as those found in private sector strikes. Stoppages occurred over safety issues, work assignments, jurisdictional questions, pay scales, job classification, working conditions, job rules, wages, union recognition, union security, working hours, and general grievances.[11] However, wages or wage-related issues were either primary or secondary causes of more than half the strikes, suggesting that Federal employees, like their counterparts in private industry, most often strike to improve their economic standing.

Penalties for Federal employees who engage in strikes include dismissal, suspension for various periods of time, written warnings and reprimands, and loss of pay. The following tabulation summarizes the penalties imposed in the 39 Federal work stoppages (multiple penalties were imposed in some stoppages):

Penalty	*Incidence*
Reprimand	9
Loss of pay	11
Temporary suspension	8
Discharge	8
No penalty	14
Information not available	1

For most Federal employees, the settlement of disputes is governed by the Civil Service Reform Act of 1978. This act gives the Federal Labor Relations Authority the responsibility of deciding unfair labor practices cases which, among other things, include engaging in or failing to prevent or stop a strike or work stoppage. For the Tennessee Valley Authority, however, the penalties are determined by a labor-management board, the Committee of the Tennessee Valley Trades and Labor Council. The council members interview all participants of a strike to determine: (1) the cause of the dispute; (2) the person(s) primarily responsible for the strike; (3) if the participant(s) may return to work; (4) what statement, if any, to include in the employee(s) records, and (5) the appropriate penalty against individuals found to have instigated the strike or who failed in their responsibility to attempt to prevent the action. Since 1962, the council has determined that dismissals were the appropriate remedy in 3 of the 8 TVA strikes, and suspensions for varying lengths of time in at least two strikes; in three others, the workers returned to work without penalty.

In 2 of the 4 postal strikes, workers were discharged or suspended for varying lengths of time and received letters of reprimand. No penalties were imposed in the other two stoppages, including the 9-day strike in 1970 which involved more than 150,000 postal employees.

Air traffic controllers were penalized in 4 of their 5 stoppages, having multiple penalties imposed in at least one stoppage. In addition, the Professional Air Traffic Controllers Organization temporarily lost its dues checkoff privileges as a result of their 1969 walkout and was decertified as the controllers' bargaining agent following their nationwide stoppage in 1981. This is the only incidence of decertification in any Federal dispute since 1962.

The most prevalent disciplinary action was being charged absent without leave and, in most cases, losing a day of pay for each day off the job. Written reprimands were the second most frequent penalty, followed by temporary suspensions and discharge. □

FOOTNOTES

[1] Information on 18 of the 39 stoppages was obtained from unpublished records of the Office of Personnel Management.

[2] 37 Stat. 555 (1912), 5 U.S.C. 652. The act states, in part, that membership in unions "imposing an obligation or duty . . . to engage in any strike or proposing to assist . . . in any strike against the United States" would result in grade reduction or loss of the employee's job. See David Ziskind, *One Thousand Strikes of Government Employees* (New York, Columbia University Press, 1940).

[3] Section 305 of the Labor Management Relations Act was repealed in 1955. However, at the same time, 5 U.S.C., Secs. 118p and 118r were enacted, retaining the prohibitions against strikes by Federal employees. These two sections were subsequently replaced in 1966 by 5 U.S.C., Secs. 3333 and 7311, and by 18 U.S.C., Sec. 1918.

[4] Title 5, Sec. 118r of the Unites States Code.

[5] Title VII had its antecedent in Executive Order 10988, which declared that an orderly and constructive relationship between unions and management was government policy. The number of Federal workers represented by unions increased substantially after this Executive Order was issued in 1962. See *Wage Chronology: Federal Employees Under the General Schedule Pay System, July 1924–October 1974*, Bulletin 1870 (Bureau of Labor Statistics, 1975), p. vii.

[6] The challenged laws were 5 U.S.C., Sec. 7311 (3) which forbids anyone from accepting or holding a Federal job who "participates in a strike;" 18 U.S.C., Sec. 1918 which makes strikes against the Federal government a criminal offense and provides penalties for violations; 5 U.S.C., Sec. 333 (par. C) which requires no-strike affidavits from Federal workers; and Executive Order 11491. See *United Federation of Postal Clerks v. Blount*, D.C.D.C. 1971, 325 F Supp. 879.

[7] 92 S.Ct. 80, 404 U.S. 802, 30 L.Ed.2d38.

[8] Ziskind, p. 24.

[9] Ziskind, p. 32; the last Federal strike noted by Ziskind occurred in 1937.

In addition, during 1917–20, when the United States vested control of the Nation's railroads and harbors in the Federal Railroad Administration, there were 46 stoppages involving railroad, marine, and waterfront employees. However, because of the temporary and emergency nature of Federal involvement in these industries, these stoppages are not considered bona fide Federal stoppages, nor are the large number of stoppages by participants in Depression-era Federal public works projects.

[10] These disputes include all Federal work stoppages lasting a shift, full day, or longer, and involving at least six workers. The Office of Personnel Management, in addition, takes account of all Federal job actions including informational picketing, walkouts (however short), sickouts and sitins, and other actions that may interrupt or have the potential to interrupt work routine. However, unless the job action met the Bureau's definition of a full shift and at least six workers, it was not included in the 39 stoppages noted. Stoppages culled from the Office of Personnel Management records are noted in the table.

[11] Federal law limits collective bargaining by Federal employees to nonwage issues. Exceptions to this rule, however, are air traffic controllers and employees of the Postal Service, Government Printing Office, and Tennessee Valley Authority. Seven of the twenty wage-related stoppages involved employees of these four agencies.

An overview of the population below the poverty level

The number of persons below the poverty level rose from 24.5 million in 1978, to 25.3 million (11.6 percent of the total population) in 1979. Statistically significant is the fact that the percentage of the population below the poverty level was unchanged.

Although the poverty rate for all persons was 11.6 percent, many groups had poverty rates well above or below the national average. For example, persons in families maintained by women with no husband present, had a poverty rate of 30 percent, compared with persons in families maintained by mean which had a poverty rate of only 6 percent. Despite the increase in the total number of persons below the poverty level during 1978–79, only a few of the major subgroups within the population experienced significant increases in the number of poor or the poverty rate.

There were 16.8 million whites and 7.8 million blacks below the poverty level in 1979—not significantly different from the previous year. As in earlier years, the poverty rate for whites (9 percent) was much lower than the rate for blacks (31 percent). Blacks accounted for 12 percent of the total U.S. population, but they made up 31 percent of the poverty population. About 2.9 million persons of Spanish origin were below the poverty level (11 percent of the poverty population) in 1979. Their poverty rate, 22 percent, was the same as in 1978.

The number of poor persons 65 years old and over increased from 3.2 million in 1978 to 3.6 million (a 15-percent poverty rate) in 1979. This increase probably occurred because their income (other than Social Security) did not keep up with inflation (which rose to 11.3 percent in 1979).

There were 15.7 million persons below the poverty level living in metropolitan areas. Of these, 9.5 million lived in central cities and 6.2 million lived in suburban areas. Poverty rates were the highest in 1979 for central city residents (16 percent) and lowest for suburban area residents (7 percent).

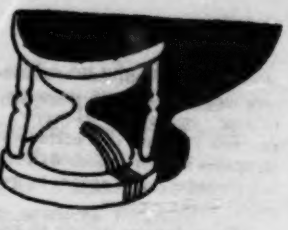
Of the 25.3 million persons below the poverty level in 1979, 42 percent lived in the South. The poverty rate for persons living in the South was 15 percent, compared with 10 percent for those in the North and West Region (combined regions).

The poverty level for families with a female householder, no husband present (30 percent) was much higher than the rates of married-couple families (5 percent) and families with a male householder, no wife present (10 percent). In 1979, the majority of white families below the poverty level were married-couple families (59 percent). By contrast, most poor black families were maintained by women with no husband present (72 percent). Nevertheless, for both races, the porportion of poor families maintained by women has increased substantially since 1970.

Finally, 5.6 million unrelated individuals (15 years old and over, living alone or with nonrelatives) were below the poverty level in 1979; 1.9 million men and 3.7 million women. This group increased by 400,000 between 1977 and 1979, and accounted for 12 percent of all persons and 22 percent of persons below the poverty level.

The full report, *Characteristics of the Population Below the Poverty Level: 1979*, U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 130, is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. ☐

Major Agreements Expiring Next Month



This list of collective bargaining agreements expiring in September is based on contracts on file in the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more.

Employer and location	Industry	Labor organization[1]	Number of workers
Acme-Cleveland Corp., National Acme Co. Division (Cleveland, Ohio)	Machinery	Mechanics Educational Society	1,200
American Protective Services, Inc., Uptown Agreement (San Francisco, Calif.)	Services	International Union of Security Officers (Ind.)	2,200
Bronx Realty Advisory Board, Inc. (New York, N.Y.)	Real estate	Service Employees	11,000
Bruno Food Stores, Inc. and Food World, Inc. (Alabama)	Retail trade	Food and Commercial Workers	2,700
Caterpillar Tractor Co., Towmotor Corp., Central Agreement (Interstate)	Machinery	Auto Workers	25,000
Chicago and Suburban Refuse Disposal Association (Illinois)	Sanitary services	Teamsters (Ind.)	1,500
Chrysler Corp., 4 agreements (Interstate)	Transportation equipment	Auto Workers	75,300
Deere and Co. (Iowa and Illinois)	Machinery	Auto Workers	32,000
Deere and Co., John Deere Horicon Works (Horicon, Wis.)	Machinery	Machinists	1,200
Food Employers Council, Inc., 3 agreements (California)	Wholesale trade	Teamsters (Ind.)	7,000
FMC Corp., Bearing and Chain Divisions (Indianapolis, Ind.)	Machinery	Steelworkers	2,000
General Electric Co., Tube Products Department (Owensboro, Ky.)	Electrical products	Allied Industrial Workers	1,050
Greater New York Folding Box and Display Manufacturers Association (New York)	Paper	Paperworkers	3,000
GTE Sylvania (Ottawa, Ohio)	Electrical products	Electrical Workers (IBEW)	1,850
Jewel Companies, Inc., Jewel Food Stores Division (Indiana and Illinois)	Retail trade	United Retail Workers	14,000
Kaiser Steel Corp. (California)	Mining	Building and Construction Trades Council	1,150
Kelly-Springfield Tire Co. (Tyler, Tex.)	Rubber	Rubber Workers	1,150
Kern County Floor Covering Association (California)	Construction	Painters	1,700
Sanyo Manufacturing Corp., Forrest City, Arkansas Plants (Arkansas)	Electrical products	Electrical Workers (IUE)	1,900
Security Agencies, Uptown Agreement (San Francisco, Calif.)[2]	Services	International Union of Security Officers (Ind.)	2,000
Sportswear Agreement (San Francisco, Calif.)[2]	Apparel	Ladies' Garment Workers	3,000
Western States Field Construction Agreement (Interstate)[2]	Construction	Boilermakers	3,500
	Government activity	**Labor organization[1]**	
Florida: Dade County Fire Department	Fire protection	Fire Fighters	1,000
Dade County Police Department	Public safety	Dade County Police Benevolent Association	2,200
New York: New York City Board of Education	Education	Teachers	60,000
Ohio: Columbus Municipal Employees	Multidepartments	American Federation of State, County and Municipal Employees	4,000

[1] Affiliated with AFL-CIO except where noted as independent (Ind.).

[2] Industry area (group of companies signing same contract).

Developments in Industrial Relations

Pattern-setting agreement in garment industry

About 150,000 workers in the dress, coat and suit, and sportswear industries were covered by a settlement between the Ladies Garment Workers and various employer groups. The 3-year agreements are expected to set a pattern for 50,000 other workers and were effective on the June 1 termination date of the prior agreements. The initial 35-cent-an-hour wage increase was deferred to December 1, 1982, and will be followed by a 35-cent increase on June 1, 1983, and a 40-cent increase on July 1, 1984. Under the prior contracts, hourly pay rates ranged from $5.50 to $5.75.

A cost-of-living clause was established. Under the formula, the workers will receive a February 1984 pay adjustment of 10 cents an hour if the Consumer Price Index rises 8.5 percent between June 1, 1982, and December 1, 1983, plus 5 cents for each additional 0.5-percentage point rise in the index, subject to a 25-cent cap. Prior contracts did not have a cost-of-living clause but were subject to reopening if the CPI rose by specified amounts.

Other terms included an additional paid holiday and, for sportswear employees, a 1.5-percent (of payroll) increase in employer financing of benefits.

Employer groups involved in the settlement included the Affiliated Dress Manufacturers Association, Apparel Manufacturers Association, New York Coat and Suit Association, and New York Skirt and Sportswear Association.

Strike against American Standard ends

A 207-day strike against plants of American Standard, Inc., subsidiaries in Wilmerding and Swissvale, Pa., ended when the company and Local 610 of the United Electrical Workers resolved the last major issue by agreeing on grievance-arbitration procedures for determining if the company was justified in firing 22 of the strikers for alleged picket line violence. Other major issues were company demands for increased productivity and installation of a computer system to aid in keeping inventories and managing the flow of work.

In regard to the productivity issue, American Standard said the settlement provides that, "in general, incentive employees will have to meet or exceed output standards before prior earnings are guaranteed; however, they will now have the opportunity to increase their earnings significantly depending on their output."

The union said that it had agreed to installation of the computer system after the company promised not to use it for pinpointing high incentive earnings or for any time study purposes.

The 3-year accord also limited workers at the Westinghouse Air Brake Co. plant in Wilmerding to two job transfers a year. Previously, they could bid on jobs at will, which disrupted production, according to management officials. American Standard agreed to conduct programs to train senior employees for job openings at its WABCO and the Union Switch and Signal plants.

The settlement, which covered 3,800 workers at the two plants, provided for a total of 85 cents an hour in specified wage increases; for retention of the provision for automatic cost-of-living pay adjustments, subject to a limit of $2.32 an hour over the 3-year term; for establishment of a dental care plan; and for improvements in pensions and other benefits.

Airline strike ends

A 3½-week strike against Northwest Airlines ended when 3,600 mechanics, baggage handlers, food-service workers, and security personnel ratified a 38-month contract. The agreement, negotiated by the International Association of Machinists, called for wage increases of 9 percent retroactive to November 1, 1981, 9 percent on January 1, 1983, and 5.5 percent on January 1, 1984.

The parties compromised on the productivity concession Northwest had sought. In exchange for greater flexibility in job assignments, the company dropped its

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"Developments in Industrial Relations" is prepared by George Ruben of the Division of Developments in Labor-Management Relations, Bureau of Labor Statistics, and is largely based on information from secondary sources.

demand for an increase in the number of part-time employees. The union said it viewed the changes in work rules as a lesser danger to job security than an increase in the number of part-time employees.

Other provisions included increased shift differentials and pay premiums for employees holding Federal aircraft repair and maintenance licenses, and a new combined regular medical and major medical lifetime coverage of $1 million, instead of the previous total of $500,000.

Paper mill institutes 'gainsharing' plan

More than 2,000 employees of Crown Zellerbach pulp and paper mills in Camas and Port Townsend, Wash., were covered by a new "gainsharing" plan developed under provisions of a 5-year labor contract negotiated in mid-1981. Crown Zellerbach said that the plan will pay the workers extra money for productivity improvements achieved by "working smarter, not harder."

The employees, who are represented by the Association of Western Pulp and Paper Workers union, received an initial payment of $500 because they accepted the plan before the June 1 deadline. In the future, the size of the annual lump-sum payments will be based on the hours worked and the cost savings resulting from a productivity formula. The formula will include such factors as the output of paper machines, reduction of waste, and reduction of purchased energy. Regardless of the results, the workers will receive at least 10 cents for each hour worked during the 12-month period.

Early negotiations possible in steel industry

The way was cleared for a possible early settlement in the steel industry when presidents of Steelworkers' local unions voted 263 to 79 to begin "discussions [with the major producers] for the purpose of exploring possible solutions" to economic conditions and resulting layoffs plaguing the industry.

Union president Lloyd McBride said that he was not "ruling in or ruling out anything" regarding possible wage-and-benefit concessions or new contract talks. The union's current 3-year agreements with the eight Coordinating Committee Steel Companies are scheduled to expire in August 1983.

In a related development, U.S. Steel Corp. reduced salaries of its 20,000 management level employees by at least 5 percent, effective July 1. In addition, the company froze the cost-of-living allowances of 7,000 nonmanagement employees; previously, the company had granted quarterly pay adjustments to these employees similar to those resulting from the provision in the Steelworkers' contract.

5 The company also said that some benefits would be reduced for all of the white-collar workers. The changes included elimination of the fifth week of paid vacation for long-service employees, two paid holidays a year, and a dental care plan, as well as modifications of other health benefits. Earlier in the year, other major steel companies had imposed similar changes for nonunion white-collar workers.

Wage-and-benefit concessions

The results of adverse economic conditions were not confined to the steel industry. Various companies moved to alleviate problems, either through bargaining with unions or by instituting wage-and-benefit reductions or deferrals for nonunion workers.

- In Billings, Mont., 350 employees of Pierce Packing Co. agreed to a 1-year wage reduction of $1.90 an hour, with the lost money to be repaid over a 4-year period. The workers, who are represented by two locals of the United Food and Commercial Workers and a local of the Operating Engineers, also agreed to a 1-year moratorium on pay increases, including cost-of-living adjustments; to take three holidays without pay; and to changes in work rules intended to increase productivity. Similar changes were instituted for salaried employees, who are not union-represented. The company said the changes were needed to counter a slowdown in its sales of pork products.
- In the nonferrous mining industry, Hecla Mining Co. of Wallace, Idaho, announced a pay reduction ranging from 5 percent for employees earning less than $17,000 a year to 15 percent for top management. The reduction was 10 percent ($2,080 a year) for miners earning the starting rate of $10 an hour. Among the workers affected were 100 gold miners and 30 lead and silver miners. The cut did not apply to 250 lead and silver miners represented by the United Steel Workers. It also did not apply to 220 nonunion lead, zinc, and silver miners whose pay had already been cut 10 percent. Hecla President William A. Griffith said the pay cuts were required because of severe declines in mineral prices.
- Barber-Greene Co. cut salaries by 3 to 9 percent for its 900 office and management employees in the United States and Canada. The company said that salaries will be frozen at the reduced level "for the indefinite future" and that some of its white-collar workers would be laid off over the next 2 months. The company, which had already cut its hourly work force by 30 percent within the last year, said the white-collar actions were necessitated by slumping demand for its road construction, mining, and industrial machinery.
- The Hesston Co., a Kansas manufacturer of farm and oil field equipment, froze the pay of 200 clerical workers and cut the pay of 350 other white-collar

workers by 5 percent. Hesston said the moves were needed "to reduce costs that cannot be recovered in today's economic conditions." The changes did not affect 950 employees represented by an independent union.

- In Columbus, Ind., Cummins Engine Co. cut the pay of all its salaried employees in the United States by 6 percent and said it was considering further measures to reduce costs. This was in addition to a cut 3 months earlier for officers of the company. The company said that it was discussing wage concessions with an independent union representing office workers in the Columbus area, but was not discussing cuts with the Diesel Workers Union, another independent union, because "we've already had lots of layoffs among the production workers it represents."
- In the rubber industry, B.F. Goodrich Co. announced that it was cutting the pay of 10,000 higher-salaried employees and freezing the pay of several thousand others. John D. Ong, chairman and chief executive officer of the company, said "the actions are precautionary in nature and represent our commitment to managing our way through this difficult period." The cut, limited to employees earning at least $20,000 a year, was 15 percent for members of Goodrich's management committee, 10 percent for other executives, and 5 percent for other employees. The company also said that it would not grant pay increases to salaried workers and was eliminating a week of paid vacation for those eligible for 3 weeks in 1983.
- Exxon Corp. announced that it planned to reduce expenses 15 percent and that 60 percent of this would be achieved through personnel cutbacks. The oil company said that the staff reduction would be achieved through voluntary retirements.
- In Grand Haven, Mich., employees of the Bastian Blessing Co. agreed to a $1-an-hour reduction in future wage-and-benefit improvements that had been scheduled under a 3-year contract negotiated in February. Under the concession plan, average pay will go from $9.30 an hour to $9.32 by the end of 1983, and to $10.12 by the end of the 3-year contract term. The 300 employees represented by Sheet Metal Workers Local 430 accepted the agreement after being told that the cost reduction was necessary to assure purchase of the plant by local investors, including some officials of the plant, which makes restaurant equipment. The purchase negotiations were being conducted with the plant's parent firm, Bastian Industries, Inc. The Grand Haven plant had been experiencing financial problems and layoffs because of the loss of a major account. The purchase group assured the employees that completion of the sale would result in recall of the workers.
- The Aluminum Company of America froze the salaries of its top 1,800 managers and cut in half the rate at which 9,500 other salaried employees accrue points toward salary increases based on the cost-of-living, performance, and other factors. Company spokesman Robert Larson described the move as "a short-term tactic to conserve cash and a long-term strategy to bring all our salaries into a more competitive relationship with other manufacturing companies."
- The Kirsch Co., a maker of home furnishings hardware, and Local 797 of the Automobile Workers revised their existing contract to provide for a wage freeze extending to June 1985. The accord, which was ratified by a 410 to 41 margin, also called for reductions in some benefits. Despite these cost-saving changes, the Sturges, Mich., firm gave no assurance that more layoffs or a plant closing could be averted. Kirsch already had 300 production workers on layoff.
- In Lockport, N.Y., 430 employees of Guterl Special Steel Corp. agreed to a package of wage-and-benefit reductions expected to save the company $1.5 million. Workers will return to "normal" wage-and-benefit levels in October 1983, a week before the expiration of Guterl's current contract with Local 2857 of the United Steelworkers. In exchange for the aid, the company agreed to return to employees the dollar value of the concessions, plus 7 percent interest, beginning October 1, 1984, if financial conditions permit. Guterl president Douglas K. Pinner said the union aid was necessitated by "a severely depressed economy, coupled with unconscionable levels of imports approaching 50 percent in some steel products."
- In the construction industry, 200 plumbers in Connecticut agreed to work on housebuilding projects at 65 percent of their usual pay rate. The agreement between the Naugatuck Valley Mechanical Contractors Association and Local 22 of the Plumbers and Pipefitters specified that the special rate would apply to work on single family homes, garden apartments, and condominiums. The rate also applies to small warehouses and commercial facilities.
- Caterpillar Tractor Co. froze the salaries of its management and weekly salaried employees, and suspended their quarterly cost-of-living increases, merit raises, and payments in lieu of unused vacation time. The move affected 13,800 management employees and 9,600 others, such as secretaries and technicians. The heavy equipment manufacturer also was offering cash retirement inducements to management employees at least 58 years old.
- Massey Ferguson announced that it was deferring payment of part of the salaries of its 3,000 North American white-collar employees until October. The deferred amount, expected to total $6 million,

amounted to 25 percent of pay for senior employees and 20 percent for others. The Canadian company indicated that 2,000 of the affected workers are located in the United States, primarily in the Des Moines, Iowa, and Detroit, Mich., areas. Earlier in 1982, Massey-Ferguson's production workers in the United States agreed to wage concessions totaling $10 million over a 30-month period. These workers are represented by the United Automobile Workers.

- Clark Equipment Co. announced plans to cut 700 employees from its white-collar staff of 5,200 by November 1. Some of the reduction would be accomplished by offering special retirement incentives to employees who are age 55 with at least 10 years of service. About 500 employees were eligible for the program. The construction equipment maker also disclosed that it was undertaking a study to determine if some of its 11 North American plants should be closed.

Supreme Court rules on subcontracting clauses

In the area of collective bargaining, the Supreme Court ruled that a construction union can negotiate provisions requiring contractors to do business only with subcontractors that recognize the union. The case resulted from 1959 amendments to a Federal law that prohibited such subcontracting clauses in all industries except construction. Despite this language, doubts about the exemption had continued because, in 1975, the court had taken a narrow interpretation of the exemption.

In the recent unanimous ruling, written by Justice Thurgood Marshall, the court said that construction unions can seek subcontracting clauses in the normal course of collective bargaining.

In its arguments in the case, which involved labor disputes in Southern California and in Oregon, the industry representatives involved contended that such clauses should apply only when needed on specific projects to preclude union and nonunion workers from working side by side.

Court bans 'nonunion' contributors to campaigns

A union can prohibit outsiders from contributing to union leadership campaigns, according to the Supreme Court. The case resulted from the 1977 race for leadership of the Steelworkers union between Lloyd McBride, who was endorsed by most of the incumbent officers and won the contest, and Edward Sadlowski, who drew substantial financial contributions from "outsiders." Later, in 1979, the union's convention adopted a rule prohibiting outside contributions.

Sadlowski then challenged the rule in court, contending that it violated provisions of the Labor-Management Reporting and Disclosure Act guaranteeing free speech to union members.

Writing for the majority, Justice Thurgood Marshall said that the act's free speech guarantee was not as broad as the guarantee of the First Amendment to the Constitution and that the union need only show—as it had—that its rule was "rationally related" to its desire to reduce outside interference.

Justice Byron R. White, writing for the minority, said that the outsider rule was unreasonable because Congress was concerned about corrupt and entrenched union leadership when it passed the 1959 law. Continuing, he said that restrictions such as the outsiders rule "are a far cry from the free and open elections that Congress anticipated and are wholly inconsistent with the way elections have been run in this country."

3M Company settles sex discrimination suits

Ending years of litigation, Minnesota Mining & Manufacturing (3M) Co. settled several sex bias suits by agreeing to pay $2.3 million to 2,350 women. The Equal Employment Opportunity Commission said that the suits had charged the company with discrimination in job assignments, wages, promotions, transfers, and other employment policies.

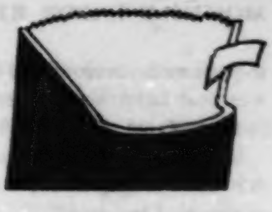
Under the settlement, the company agreed to give 1,350 female employees about $1.5 million in back pay, plus interest. The company also agreed to help the women attain higher-paying jobs by offering them job counseling, posting job vacancies, and paying for job-related courses.

Locals of the Oil, Chemical and Atomic Workers and the Grain Millers unions, which were codefendants in the suits, will set up committees to handle discrimination issues at the five plants.

The settlement also required 3M to pay $525,000 plus interest to some 1,000 women it had forced to take maternity leave 4 months before they were scheduled to give birth. This policy was essentially ended in 1973.

3M said that it settled because the suits were consuming a great deal of management time, and that now it could concentrate on its affirmative action programs for hiring, training, and promoting women.

Book Reviews



Portrait of a leader

George Meany and His Times: A Biography. By Archie Robinson. New York, Simon and Schuster, 1981. 445 pp. $18.75. Single copy, $12.50 postpaid, AFL-CIO Books, P.O. Box 37473, Washington 20013.

George Meany, scowling through the thick smoke of a cigar, uttering defiant and sometimes ungrammatical challenges to leaders of government and industry, probably would have been a casting director's ideal "labor boss."

But the George Meany of this book, passionately devoted to democratic institutions, arch foe of communism and corruption, champion of civil rights and social justice, is difficult to fit into the "labor boss" stereotype.

George Meany not only authorized this biography, he collaborated actively in its preparation during 4 years of weekly taped interviews with the author. Not surprisingly, then, the book is less a searching evaluation than the recollections of a celebrated leader at the end of his career.

Archie Robinson got to know George Meany during 37 years as a labor reporter for the *Detroit News* and *U.S. News & World Report*. Because he relies heavily on speeches and taped recollections, his admiring portrait accurately reflects Meany's direct—and often blunt—manner. But the virtue of telling Meany's story in Meany's own words is offset at times by Robinson's practice of reporting events by stringing together Meany quotations, with minimal or self-conscious, "as he recalled for this book," transitions. This tends to limit the reader to Meany's view of events, where the inclusion of other views might have provided fuller understanding.

An example of this limitation is the account of Meany's frustration with the World War II stabilization program which led to an attack on the Bureau of Labor Statistics. Robinson quotes at length from Meany's statements accusing BLS of not doing an adequate job of measuring the cost of living, charging that BLS "has laid aside its function as an impartial research agency interested only in securing and presenting the facts and has identified itself with the objectives of a specific political administration," and denouncing Acting Commissioner Ford Hinrichs as "a bureaucratic monkey on a stick who moves up and down in conformity with the dictates of the administrative wage policy." Robinson's readers don't learn that other participants in that dispute, including some of Meany's trade union colleagues, found his attacks on BLS unwarranted.

Robinson traces Meany's rise from a high school dropout who failed in his first attempt to pass the journeyman plumber examination, to popular business agent for his Bronx union local, chief lobbyist and president of the New York State Federation of Labor, secretary-treasurer of the American Federation of Labor, and finally, AFL-CIO president. The book is at its best when it describes Meany's relationship with eight presidents of the United States and with Walter Reuther. (After one of Reuther's attacks on Meany as "a complacent custodian of the status quo," Meany joked to reporters that "I'm now signing my letters 'sincerely and complacently yours'.")

Robinson describes some events not often remembered, including the fact that, while still in New York, Meany led a successful strike against the New Deal relief agencies that wanted to pay less than prevailing rates on Works Progress Administration construction projects.

The book also documents Meany opinions that will surprise some readers:

On the split in the labor movement in the 1930's: "There was no good trade union reason for the split . . . (Franklin D. Roosevelt) was going to seek more active political support (in the 1936 election) and he didn't figure he would get it through the AFL Executive Council, which was fairly conservative. . . . The industrial union idea was a bugaboo designed to cover up the political motives of the sponsors of the CIO."

On forming a labor party: "When you set up a labor party—I don't care where it is—and you tie yourself to a labor party, you are saying, in effect, we not only want better conditions for the people we represent, we not only want to raise the standard of life, we want to run the country. (Samuel) Gompers took the position that it was not our job to run the country. . . . The Gompers' philosophy was not to be nonpolitical, it was to be nonpartisan. The Gompers' philosophy basically was that labor should not tie itself to a political party in any way at all. That is still our policy . . . ."

On lobbying: "You never beg and you never threaten. And always keep in the back of your mind that the other guy may be right."

On being an economist: "I look back when I was a high school dropout. I think now that if I had gone on, I might have wound up being an economist. And to me, that's kind of a sad profession. Although it is the one profession in which you can gain great eminence without ever being right."

In pursuing plumbing and union leadership careers instead of economics, George Meany was often right and gained great eminence as well. This book tells that story and tells it well.

—HENRY LOWENSTERN
Editor-in-Chief
Monthly Labor Review

Excluding unions

Preventive Labor Relations. By John G. Kilgour. New York, AMACOM, A division of American Management Associations, 1981. 338 pp. $24.95.

In recent years, a steady flow of books and articles have been published to assist employers in preventing unions from invading their businesses and activities. These publications, together with a series of seminars and intensified activity by consultants advising employers on how to avoid unions, have contributed to a climate of tension and distrust in labor-management relations. There is little doubt that some of these antiunion efforts have caused great concern in the organized labor movement.

This book may irritate some labor union members and officers merely because it discusses ways of preventing labor unions from organizing the unorganized. It is not, however, a vitriolic attack on labor unions. It begins with the assumption that the vast majority of nonunionized employers would prefer to remain free of unions. It then proceeds to cover a number of areas in which employers can take action to keep unions out. Throughout the book, however, the author stresses the need to adhere to the rules of collective bargaining and personnel administration.

Basically, "preventive labor relations" encourages early attention to organizing efforts, establishing effective communication links to detect early organizing moves, and establishing a basis for meeting and conferring with employees on a regular basis. Employers are cautioned not to overpublicize their efforts because employees could become more aware of union activities than would otherwise be the case.

Particular suggestions are made with respect to plant location (where unions have traditionally experienced difficulties in organizing workers); a mix of workers to include groups generally opposed to unions; and establishment of larger work units which the author believes will help oppose organizing efforts because, he says, unions are less successful in organizing larger units. This last point conflicts with recent releases by the National Labor Relations Board indicating that unions have been most successful in organizing larger units. The author may be thinking of larger bargaining units with a diverse work force consisting of a sizable number of workers from groups not thought to be susceptible to union organizing drives.

The author considers effective screening and hiring of workers to be one of the most essential aspects of preventive labor relations. He cautions, however, that care must be taken to avoid the legal pitfalls of such selective personnel practices. It would seem to this reviewer that the official use of such practices can be construed as a violation of existing law, especially since the book suggests that certain "protected" groups are more prone to join unions than are members of other groups. Among the groups mentioned by the author as being less likely to join unions are retired military personnel, older people, part-time and temporary workers, and certain ethnic-racial groups who believe that unions have not acted in their best interests. One must question this kind of selection policy and practice on another basis. Will the organization get the best possible work force? The point made by the author is that a carefully selected mix of workers can help keep unions out.

Kilgour emphasizes two important points. For example, he says the best way to keep unions out is to practice fair and effective personnel administration. This means not only the personnel office but each manager, who, in effect, is a personnel manager. If workers believe that the organization's personnel policies and practices are superior to what can be expected in a unionized environment, there will be little or no incentive to join a union.

If, however, union organization drives get started, it is easier to defeat them if the organization has advance warning. Open door policies practiced by managers, exit interviews, attitude surveys, detection of increased absenteeism or turnover, and so forth, can help serve as an early warning system. Again, it is important, says the author, not to show too much activity or concern because this might precipitate unions to take action earlier than planned, or, it can help to stir up employees to seek outside assistance.

If organizing drives do get started, employers are cautioned to operate within the rules. This is not to suggest a "cave-in," but the author says that employers should manage to get this viewpoint across, and to do all that is legally possible to keep the union organizing effort from succeeding. This involves getting information to employees, timing events to conform to the organization's needs, and striving to gain the best strategic advantage possible.

Finally, the author suggests that if a certification election results in a union victory, management must be tough, effective negotiators. Thereafter, they should administer the contract fairly and consistently and continue to manage effectively. The fight is not necessarily over. Changes can and do occur.

This book can be helpful to employers in planning strategy to prevent unions from organizing workers. It has a sensible tone and approach, with proper caution. It can also be helpful to union organizers in planning their strategy. On balance, this book would be useful to both management and labor.

—BEN BURDETSKY
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NOTES ON CURRENT LABOR STATISTICS

This section of the *Review* presents the principal statistical series collected and calculated by the Bureau of Labor Statistics. A brief introduction to each group of tables provides definitions, notes on the data, sources, and other material usually found in footnotes.

Readers who need additional information are invited to consult the BLS regional offices listed on the inside front cover of this issue of the *Review*. Some general notes applicable to several series are given below.

Seasonal adjustment. Certain monthly and quarterly data are adjusted to eliminate the effect of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might otherwise mask short-term movements of the statistical series. Tables containing these data are identified as "seasonally adjusted." Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years.

Seasonally adjusted labor force data in tables 2–7 were revised in the March 1982 issue of the *Review* to reflect experience through 1981. The original estimates also were revised to 1970 to reflect 1980 census population controls.

Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are being seasonally adjusted with a new procedure called X-11/ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada Catalogue No. 12-564E, February 1980). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. Revisions of historical data continue to be made only at the end of each calendar year.

Annual revision of the seasonally adjusted payroll data shown in tables 11, 14, and 16 were made in August 1981 using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 30 and 31 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

Adjustments for price changes. Some data are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of $3 and a current price index number of 150, where 1967 = 100, the hourly rate expressed in 1967 dollars is $2 ($3/150 × 100 = $2). The resulting values are described as "real," "constant," or "1967" dollars.

Availability of information. Data that supplement the tables in this section are published by the Bureau of Labor Statistics in a variety of sources. Press releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule given below. The *BLS Handbook of Labor Statistics*, Bulletin 2070, provides more detailed data and greater historical coverage for most of the statistical series presented in the *Monthly Labor Review*. More information from the household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau. Historically, comparable information from the establishment survey is published in two comprehensive data books—*Employment and Earnings, United States* and *Employment and Earnings, States and Areas*, and their annual supplements. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

Symbols

p = preliminary. To improve the timeliness of some series, preliminary figures are issued based on representative but incomplete returns.
r = revised. Generally, this revision reflects the availability of later data but may also reflect other adjustments.
n.e.c. = not elsewhere classified.

Schedule of release dates for major BLS statistical series

Series	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	August 6	July	September 3	August	1–11
Producer Price Index	August 13	July	September 10	August	23–27
Employment Cost Index	August 19	2nd quarter	....	....	32–34
Consumer Price Index	August 24	July	September 23	August	19–22
Real Earnings	August 24	July	September 23	August	12–17
Productivity and costs:					
Nonfinancial corporations	August 26	2nd quarter	....	....	28–31

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 60,000 households selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

Definitions

Employed persons are (1) those who worked for pay any time during the week which includes the 12th day of the month or who worked unpaid for 15 hours or more in a family-operated enterprise and (2) those who were temporarily absent from their regular jobs because of illness, vacation, industrial dispute, or similar reasons. A person working at more than one job is counted only in the job at which he or she worked the greatest number of hours.

Unemployed persons are those who did not work during the survey week, but were available for work except for temporary illness and had looked for jobs within the preceding 4 weeks. Persons who did not look for work because they were on layoff or waiting to start new jobs within the next 30 days are also counted among the unemployed. The **unemployment rate** represents the number unemployed as a percent of the civilian labor force.

The **civilian labor force** consists of all employed or unemployed persons in the civilian noninstitutional population; the **total labor force** includes military personnel. Persons **not in the labor force** are those not classified as employed or unemployed; this group includes persons retired, those engaged in their own housework, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job market factors, and those who are voluntarily idle. The **noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy.

Full-time workers are those employed at least 35 hours a week; **part-time workers** are those who work fewer hours. Workers on part-time schedules for economic reasons (such as slack work, terminating or starting a job during the week, material shortages, or inability to find full-time work) are among those counted as being on full-time status, under the assumption that they would be working full time if conditions permitted. The survey classifies unemployed persons in full-time or part-time status by their reported preferences for full-time or part-time work.

Notes on the data

From time to time, and especially after a decennial census, adjustments are made in the Current Population Survey figures to correct for estimating errors during the preceding years. These adjustments affect the comparability of historical data presented in table 1. A description of these adjustments and their effect on the various data series appear in the Explanatory Notes of *Employment and Earnings*.

Data in tables 2–7 are seasonally adjusted, based on the seasonal experience through December 1981.

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950–81

[Numbers in thousands]

Year	Total noninstitutional population	Total labor force		Civilian labor force						Not in labor force
				Total	Employed			Unemployed		
		Number	Percent of population		Total	Agriculture	Nonagricultural industries	Number	Percent of labor force	
1950	106,645	63,858	59.9	62,208	58,918	7,160	51,758	3,288	5.3	42,787
1955	112,732	68,072	60.4	65,023	62,170	6,450	55,722	2,852	4.4	44,660
1960	119,759	72,142	60.2	69,628	65,778	5,458	60,318	3,852	5.5	47,617
1965	129,236	77,178	59.7	74,455	71,088	4,361	66,726	3,366	4.5	52,058
1966	131,180	78,893	60.1	75,770	72,895	3,979	68,915	2,875	3.8	52,288
1967	133,319	80,793	60.6	77,347	74,372	3,844	70,527	2,975	3.8	52,527
1968	135,562	82,272	60.7	78,737	75,920	3,817	72,103	2,817	3.6	53,291
1969	137,841	84,240	61.1	80,734	77,902	3,606	74,296	2,832	3.5	53,602
1970	140,272	85,959	61.3	82,771	78,678	3,463	75,215	4,093	4.9	54,315
1971	143,033	87,198	61.0	84,382	79,367	3,394	75,972	5,016	5.9	55,834
1972	146,574	89,484	61.1	87,034	82,153	3,484	78,669	4,882	5.6	57,091
1973	149,423	91,756	61.4	89,429	85,064	3,470	81,594	4,365	4.9	57,667
1974	152,349	94,179	61.8	91,949	86,794	3,515	83,279	5,156	5.6	58,171
1975	155,333	95,955	61.8	93,775	85,846	3,408	82,438	7,929	8.5	59,377
1976	158,294	98,302	62.1	96,158	88,752	3,331	85,421	7,406	7.7	59,991
1977	161,166	101,142	62.8	99,009	92,017	3,283	88,734	6,991	7.1	60,025
1978	164,027	104,368	63.6	102,251	96,048	3,387	92,661	6,202	6.1	59,659
1979	166,951	107,050	64.1	104,962	98,824	3,347	95,477	6,137	5.8	59,900
1980	169,848	109,042	64.2	106,940	99,303	3,364	95,938	7,637	7.1	60,806
1981	172,272	110,812	64.3	108,670	100,397	3,368	97,030	8,273	7.6	61,460

2. Employment status by sex, age, and race, seasonally adjusted

[Numbers in thousands]

Employment status	Annual average		1981							1982					
	1980	1981	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
TOTAL															
Total noninstitutional population[1]	169,848	172,272	172,172	172,385	172,559	172,758	172,988	173,155	173,330	173,495	173,657	173,843	174,020	174,201	174,364
Total labor force	109,042	110,812	110,565	110,827	110,976	110,669	111,170	111,430	111,348	111,038	111,333	111,521	111,824	112,041	112,384
Civilian noninstitutional population[1]	167,745	170,130	170,042	170,246	170,399	170,583	170,809	170,986	171,166	171,335	171,489	171,667	171,844	172,026	172,190
Civilian labor force	106,940	108,670	108,434	108,688	108,818	108,494	109,012	109,272	109,184	108,879	109,165	109,346	109,648	110,657	110,191
Employed	99,303	100,397	100,430	100,864	100,840	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117	99,764
Agriculture	3,364	3,368	3,348	3,342	3,404	3,358	3,378	3,372	3,209	3,411	3,373	3,348	3,309	3,488	3,357
Nonagricultural industries	95,938	97,030	97,082	97,522	97,436	96,900	96,965	96,800	96,404	96,170	96,217	96,144	96,032	96,629	96,406
Unemployed	7,637	8,273	8,004	7,824	7,978	8,236	8,669	9,100	9,571	9,298	9,575	9,854	10,307	10,540	10,427
Unemployment rate	7.1	7.6	7.4	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5
Not in labor force	60,806	61,460	61,608	61,558	61,581	62,099	61,797	61,724	61,982	62,456	62,324	62,321	62,197	61,369	61,999
Men, 20 years and over															
Civilian noninstitutional population[1]	71,138	72,419	72,359	72,472	72,559	72,670	72,795	72,921	73,020	73,120	73,209	73,287	73,392	73,499	73,585
Civilian labor force	56,455	57,197	57,094	57,172	57,250	57,262	57,355	57,459	57,665	57,368	57,448	57,554	57,730	58,164	58,016
Employed	53,101	53,582	53,597	53,874	53,791	53,693	53,504	53,354	53,122	53,047	53,097	53,006	52,988	53,260	52,985
Agriculture	2,396	2,384	2,379	2,383	2,422	2,383	2,413	2,382	2,311	2,390	2,386	2,377	2,382	2,464	2,424
Nonagricultural industries	50,706	51,199	51,218	51,491	51,369	51,310	51,091	50,972	50,811	50,657	50,711	50,629	50,606	50,796	50,561
Unemployed	3,353	3,615	3,497	3,298	3,459	3,569	3,851	4,105	4,543	4,322	4,351	4,548	4,742	4,904	5,031
Unemployment rate	5.9	6.3	6.1	5.8	6.0	6.2	6.7	7.1	7.9	7.5	7.6	7.9	8.2	8.4	8.7
Not in labor force	14,683	15,222	15,265	15,300	15,309	15,408	15,440	15,462	15,355	15,752	15,761	15,733	15,662	15,335	15,569
Women, 20 years and over															
Civilian noninstitutional population[1]	80,065	81,497	81,434	81,561	81,671	81,792	81,920	82,038	82,151	82,260	82,367	82,478	82,591	82,707	82,811
Civilian labor force	41,106	42,485	42,581	42,682	42,666	42,344	42,831	42,987	42,888	42,868	43,031	43,243	43,301	43,683	43,904
Employed	38,492	39,590	39,757	39,810	39,841	39,426	39,814	39,878	39,713	39,764	39,744	39,807	39,715	40,075	40,350
Agriculture	584	604	585	590	609	608	596	635	572	649	629	636	601	634	581
Nonagricultural industries	37,907	38,986	39,172	39,220	39,232	38,818	39,218	39,243	39,141	39,115	39,116	39,172	39,114	39,441	39,769
Unemployed	2,615	2,895	2,824	2,872	2,825	2,918	3,017	3,109	3,175	3,104	3,286	3,435	3,586	3,608	3,554
Unemployment rate	6.4	6.8	6.6	6.7	6.6	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3	8.1
Not in labor force	38,959	39,012	38,853	38,879	39,005	39,448	39,089	39,051	39,263	39,392	39,336	39,235	39,290	39,024	38,907
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	16,543	16,214	16,249	16,213	16,169	16,131	16,093	16,037	15,995	15,955	15,913	15,902	15,861	15,820	15,794
Civilian labor force	9,378	8,988	8,759	8,834	8,902	8,888	8,826	8,826	8,631	8,643	8,686	8,549	8,616	8,819	8,271
Employed	7,710	7,225	7,076	7,180	7,208	7,139	7,025	6,940	6,778	6,771	6,748	6,679	6,637	6,782	6,429
Agriculture	385	380	384	369	373	367	369	355	326	373	359	336	326	390	353
Nonagricultural industries	7,325	6,845	6,692	6,811	6,835	6,772	6,656	6,585	6,452	6,398	6,389	6,343	6,311	6,392	6,076
Unemployed	1,669	1,763	1,683	1,654	1,694	1,749	1,801	1,886	1,853	1,872	1,938	1,870	1,979	2,037	1,842
Unemployment rate	17.8	19.6	19.2	18.7	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3
Not in labor force	7,165	7,226	7,490	7,379	7,267	7,243	7,267	7,211	7,364	7,312	7,227	7,353	7,245	7,001	7,523
White															
Civilian noninstitutional population[1]	146,122	147,908	147,804	147,976	148,144	148,370	148,562	148,631	148,755	148,842	148,855	149,132	149,249	149,250	149,429
Civilian labor force	93,600	95,052	94,887	95,126	95,163	94,884	95,365	95,535	95,329	95,120	95,333	95,508	96,015	96,641	96,223
Employed	87,715	88,709	88,799	89,170	89,221	88,628	88,734	88,498	88,010	87,955	87,989	87,956	87,989	88,450	88,173
Unemployed	5,884	6,343	6,088	5,956	5,942	6,256	6,631	7,037	7,319	7,165	7,344	7,552	8,026	8,191	8,050
Unemployment rate	6.3	6.7	6.4	6.3	6.2	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5	8.4
Not in labor force	52,522	52,856	52,917	52,850	52,981	53,486	53,197	53,096	53,426	53,722	53,522	53,624	53,234	52,609	53,206
Black															
Civilian noninstitutional population[1]	17,824	18,219	18,206	18,239	18,266	18,297	18,333	18,362	18,392	18,423	18,450	18,480	18,511	18,542	18,570
Civilian labor force	10,865	11,086	11,033	10,971	11,069	11,134	11,188	11,207	11,226	11,188	11,205	11,217	11,170	11,335	11,253
Employed	9,313	9,355	9,310	9,338	9,267	9,319	9,313	9,321	9,279	9,314	9,266	9,197	9,111	9,216	9,174
Unemployed	1,553	1,731	1,723	1,633	1,802	1,815	1,875	1,886	1,947	1,874	1,939	2,020	2,059	2,120	2,079
Unemployment rate	14.3	15.6	15.6	14.9	16.3	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7	18.5
Not in labor force	6,959	7,133	7,173	7,268	7,197	7,163	7,145	7,155	7,166	7,235	7,245	7,263	7,341	7,207	7,317

[1] As in table 1, population figures are not seasonally adjusted.

3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1981							1982					
	1980	1981	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
CHARACTERISTIC															
Total employed, 16 years and over	99,303	100,397	100,430	100,864	100,840	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117	99,764
Men	57,186	57,397	57,279	57,640	57,551	57,471	57,266	57,051	56,725	56,629	56,658	56,472	56,401	56,820	56,223
Women	42,117	43,000	43,151	43,224	43,289	42,787	43,077	43,121	42,888	42,952	42,932	43,020	42,940	43,297	43,541
Married men, spouse present	39,004	38,882	38,930	38,961	38,951	38,855	38,746	38,553	38,342	38,234	38,255	38,181	38,142	38,312	38,354
Married women, spouse present	23,532	23,915	24,106	24,159	24,043	23,626	23,874	23,820	23,691	23,744	23,727	23,900	23,831	24,213	24,401
OCCUPATION															
White-collar workers	51,882	52,949	52,957	52,907	53,141	52,908	53,199	53,086	53,084	52,836	52,841	52,763	53,177	53,705	53,586
Professional and technical	15,968	16,420	16,410	16,384	16,621	16,598	16,681	16,657	16,774	16,803	16,612	16,658	16,844	16,818	17,053
Managers and administrators, except farm	11,138	11,540	11,411	11,578	11,460	11,533	11,616	11,461	11,424	11,091	11,253	11,311	11,501	11,541	11,504
Salesworkers	6,303	6,425	6,513	6,373	6,490	6,441	6,400	6,418	6,450	6,520	6,544	6,637	6,603	6,587	6,547
Clerical workers	18,473	18,564	18,623	18,582	18,570	18,336	18,502	18,550	18,436	18,423	18,432	18,155	18,229	18,759	18,482
Blue-collar workers	31,452	31,261	31,538	31,580	31,611	31,266	30,953	30,683	30,344	30,203	30,309	30,416	29,824	29,926	29,716
Craft and kindred workers	12,787	12,862	12,749	12,787	12,724	12,514	12,446	12,411	12,446	12,370	12,454	12,511	12,482	12,316	12,207
Operatives, except transport	10,565	10,540	10,703	10,719	10,658	10,524	10,410	10,220	10,169	9,966	9,955	9,860	9,600	9,585	9,655
Transport equipment operatives	3,531	3,476	3,483	3,526	3,530	3,506	3,580	3,438	3,368	3,415	3,503	3,397	3,400	3,419	3,414
Nonfarm laborers	4,567	4,583	4,593	4,548	4,699	4,722	4,517	4,614	4,361	4,451	4,397	4,648	4,343	4,607	4,441
Service workers	13,228	13,438	13,214	13,526	13,282	13,391	13,525	13,670	13,639	13,709	13,612	13,526	13,565	13,738	13,791
Farmworkers	2,741	2,749	2,710	2,727	2,753	2,743	2,770	2,802	2,860	2,817	2,787	2,710	2,623	2,731	2,680
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,425	1,464	1,437	1,485	1,501	1,481	1,502	1,436	1,352	1,377	1,426	1,416	1,423	1,541	1,431
Self-employed workers	1,642	1,638	1,684	1,580	1,638	1,643	1,631	1,641	1,602	1,674	1,596	1,644	1,664	1,688	1,676
Unpaid family workers	297	266	263	244	256	256	261	321	228	380	359	277	270	236	251
Nonagricultural industries:															
Wage and salary workers	88,525	89,543	89,508	89,971	89,995	89,376	89,460	89,238	88,991	88,759	88,586	88,526	88,322	89,051	88,605
Government	15,912	15,690	15,707	15,637	15,526	15,475	15,491	15,397	15,585	15,578	15,527	15,492	15,453	15,422	15,635
Private industries	72,612	73,853	73,801	74,334	74,469	73,901	73,969	73,841	73,406	73,181	73,059	73,034	72,869	73,629	72,970
Private households	1,192	1,208	1,177	1,216	1,259	1,102	1,162	1,204	1,291	1,249	1,161	1,225	1,192	1,202	1,201
Other industries	71,420	72,645	72,624	73,118	73,210	72,799	72,807	72,637	72,115	71,932	71,898	71,809	71,677	72,427	71,770
Self-employed workers	7,000	7,097	7,128	7,071	7,103	7,217	7,152	7,141	7,057	6,971	7,055	7,126	7,264	7,269	7,319
Unpaid family workers	413	390	376	389	387	399	451	425	410	410	408	434	413	382	397
PERSONS AT WORK [1]															
Nonagricultural industries	90,209	91,377	91,500	92,532	91,569	90,878	91,384	91,323	90,922	90,125	90,892	90,548	90,596	91,282	91,020
Full-time schedules	73,590	74,339	74,693	75,620	74,467	73,794	73,886	73,915	73,360	72,803	73,028	72,649	72,335	73,036	72,662
Part time for economic reasons	4,064	4,499	4,033	4,374	4,350	4,656	5,009	5,026	5,288	5,071	5,563	5,717	5,834	5,763	5,444
Usually work full time	1,714	1,738	1,465	1,680	1,729	1,759	2,006	1,945	2,121	1,783	2,193	2,237	2,223	2,211	2,064
Usually work part time	2,350	2,761	2,568	2,694	2,621	2,897	3,003	3,081	3,167	3,287	3,370	3,480	3,611	3,552	3,380
Part time for noneconomic reasons	12,555	12,539	12,774	12,538	12,752	12,428	12,489	12,382	12,274	12,251	12,300	12,183	12,427	12,483	12,914

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial disputes.

4. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1981							1982					
	1980	1981	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
CHARACTERISTIC															
Total, 16 years and over	7.1	7.6	7.4	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5
Men, 20 years and over	5.9	6.3	6.1	5.8	6.0	6.2	6.7	7.1	7.9	7.5	7.6	7.9	8.2	8.4	8.7
Women, 20 years and over	6.4	6.8	6.8	6.7	6.6	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3	8.1
Both sexes, 16 to 19 years	17.8	19.6	19.2	18.7	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3
White, total	6.3	6.7	6.4	6.3	6.2	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5	8.4
Men, 20 years and over	5.3	5.6	5.3	5.0	5.2	5.5	5.9	6.4	6.9	6.6	6.7	7.0	7.3	7.5	7.7
Women, 20 years and over	5.6	5.9	5.7	5.8	5.5	5.9	6.1	6.3	6.4	6.3	6.6	6.9	7.2	7.3	7.1
Both sexes, 16 to 19 years	15.5	17.3	16.8	16.4	16.1	17.2	17.7	19.0	19.0	19.6	20.0	19.0	20.8	20.3	19.4
Black, total	14.3	15.6	15.6	14.9	16.3	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7	18.5
Men, 20 years and over	12.4	13.5	13.7	12.7	13.6	14.5	14.7	15.5	16.5	16.3	16.0	16.0	16.9	17.0	17.1
Women, 20 years and over	11.9	13.4	13.3	13.1	13.8	14.0	13.9	13.6	14.1	13.3	14.5	15.4	15.6	15.3	15.0
Both sexes, 16 to 19 years	38.5	41.4	40.9	40.0	40.0	40.8	45.6	44.1	42.2	41.2	42.3	46.0	48.1	49.8	52.6
Married men, spouse present	4.2	4.3	4.2	3.9	4.0	4.4	4.8	5.2	5.7	5.3	5.3	5.5	6.0	6.1	6.5
Married women, spouse present	5.8	6.0	5.7	5.7	5.5	6.0	6.1	6.5	6.6	6.2	7.0	7.1	7.8	7.4	7.0
Women who maintain families	9.2	10.4	10.7	11.2	10.1	10.7	10.6	10.8	10.5	10.4	10.2	10.6	11.5	11.8	12.4
Full-time workers	6.9	7.3	7.1	6.8	6.9	7.3	7.7	8.1	8.7	8.4	8.5	8.9	9.2	9.2	9.4
Part-time workers	8.8	9.4	9.2	9.3	9.6	9.6	9.5	10.2	9.2	9.6	10.8	10.0	10.9	10.5	9.8
Unemployed 15 weeks and over	1.7	2.1	2.2	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.5	2.7	2.7	3.0	3.3
Labor force time lost[1]	7.9	8.5	7.9	7.9	7.9	8.5	9.1	9.5	10.1	10.0	9.8	10.4	10.4	11.1	10.2
OCCUPATION															
White-collar workers	3.7	4.0	3.9	4.0	3.9	4.1	4.1	4.2	4.5	4.2	4.6	4.8	4.9	4.8	5.0
Professional and technical	2.5	2.8	2.8	2.8	2.5	2.8	2.6	2.7	3.4	2.9	3.1	3.2	3.2	3.3	3.3
Managers and administrators, except farm	2.4	2.7	2.7	2.6	2.7	2.7	2.8	3.0	3.1	2.7	3.1	3.0	3.3	3.5	3.8
Salesworkers	4.4	4.6	4.3	4.9	4.7	5.0	4.9	5.0	4.9	4.5	4.8	5.8	5.6	5.2	5.8
Clerical workers	5.3	5.7	5.4	5.7	5.7	5.8	6.0	6.0	6.2	6.3	6.7	6.9	7.2	6.8	6.9
Blue-collar workers	10.0	10.3	9.8	9.5	9.5	10.2	10.9	11.8	12.7	12.5	12.5	12.9	13.7	13.5	13.9
Craft and kindred workers	6.6	7.5	7.1	6.9	7.0	7.7	8.3	8.5	9.3	9.0	8.4	9.1	9.6	9.4	10.3
Operatives, except transport	12.2	12.2	11.1	11.1	11.1	11.6	12.8	14.1	15.5	15.4	15.4	15.9	16.9	16.5	16.7
Transport equipment operatives	8.8	8.7	8.1	7.3	8.0	8.7	8.0	10.4	10.5	10.2	10.3	10.4	10.7	11.8	13.0
Nonfarm laborers	14.6	14.7	14.7	14.4	13.2	14.6	15.6	16.0	16.9	16.9	17.9	17.9	19.2	18.3	17.9
Service workers	7.9	8.9	8.9	8.0	8.9	9.0	9.3	9.7	9.6	9.2	9.8	10.2	11.1	11.3	9.9
Farmworkers	4.6	5.3	6.2	4.8	5.4	4.0	6.2	6.2	6.4	6.9	4.9	5.4	5.8	8.3	7.2
INDUSTRY															
Nonagricultural private wage and salary workers[2]	7.4	7.7	7.4	7.2	7.3	7.7	8.1	8.4	9.1	8.6	9.0	9.5	9.9	9.9	10.0
Construction	14.1	15.6	16.1	15.2	16.2	16.3	17.6	17.8	18.1	18.7	18.1	17.9	19.4	18.8	19.2
Manufacturing	8.5	8.3	7.4	7.3	7.0	7.9	8.6	9.4	11.0	10.4	10.6	10.8	11.3	11.6	12.3
Durable goods	8.9	8.2	7.1	7.1	6.5	7.7	8.6	9.5	11.8	11.0	11.3	10.8	11.9	12.2	13.2
Nondurable goods	7.9	8.4	7.9	7.6	7.9	8.3	8.6	9.3	9.6	9.5	9.5	10.8	10.5	10.7	11.0
Transportation and public utilities	4.9	5.2	4.9	4.1	4.8	4.2	4.8	5.5	6.0	6.4	5.9	5.6	7.0	6.5	6.9
Wholesale and retail trade	7.4	8.1	7.7	7.9	7.9	8.5	8.4	8.6	8.9	8.7	9.0	10.3	10.1	10.6	9.7
Finance and service industries	5.3	5.9	5.8	5.7	5.7	6.0	6.2	6.1	6.4	5.9	6.5	6.9	7.0	6.9	6.8
Government workers	4.1	4.7	4.6	4.8	4.5	4.7	4.7	5.2	5.0	4.8	5.2	4.9	5.3	5.0	4.6
Agricultural wage and salary workers	11.0	12.1	13.3	10.7	12.0	11.0	13.4	14.1	14.8	16.2	12.8	14.0	14.6	18.2	16.3

[1] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

[2] Includes mining, not shown separately.

5. Unemployment rates, by sex and age, seasonally adjusted

Sex and age	Annual average		1981							1982					
	1980	1981	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
Total, 16 years and over	7.1	7.6	7.4	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5
16 to 19 years	17.8	19.6	19.2	18.7	18.0	18.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3
16 to 17 years	20.0	21.4	22.6	19.8	20.8	21.4	21.5	22.6	21.9	21.9	22.7	22.7	24.6	25.3	23.7
18 to 19 years	16.2	18.4	17.5	17.8	17.6	18.5	20.0	20.5	21.2	21.3	22.0	21.3	21.9	21.3	21.8
20 to 24 years	11.5	12.3	12.1	11.5	12.1	12.3	12.7	13.0	13.5	13.5	14.1	14.2	14.7	14.3	14.4
25 years and over	5.1	5.4	5.3	5.2	5.2	5.4	5.7	6.0	6.5	6.3	6.4	6.8	7.0	7.1	7.4
25 to 54 years	5.5	5.8	5.8	5.5	5.5	5.8	6.2	6.5	6.9	6.7	6.8	7.3	7.4	7.7	7.7
55 years and over	3.3	3.6	3.5	3.5	3.5	3.8	3.8	3.8	4.1	4.2	4.3	4.6	5.0	4.8	5.4
Men, 16 years and over	6.9	7.4	7.2	6.7	7.1	7.3	7.7	8.3	9.0	8.6	8.7	9.0	9.4	9.6	9.7
16 to 19 years	18.3	20.1	20.0	18.8	19.8	18.9	20.1	21.8	22.3	22.1	22.5	23.5	24.4	24.0	24.2
16 to 17 years	20.4	22.0	24.0	19.9	21.5	21.5	21.1	22.7	22.6	23.0	23.0	24.3	24.7	26.3	25.6
18 to 19 years	16.7	18.8	18.2	17.9	18.3	18.7	19.3	21.0	22.2	21.4	22.1	22.8	24.3	21.8	24.0
20 to 24 years	12.5	13.2	12.9	11.6	12.9	13.1	13.8	14.4	14.8	14.9	15.4	15.7	16.0	15.5	15.8
25 years and over	4.8	5.1	5.0	4.7	4.9	5.0	5.5	5.8	6.5	6.3	6.3	6.6	6.8	6.9	7.5
25 to 54 years	5.1	5.5	5.2	5.0	5.2	5.5	5.9	6.3	6.9	6.7	6.7	7.1	7.2	7.5	8.0
55 years and over	3.3	3.5	3.4	3.4	3.4	3.5	3.7	3.7	4.4	4.3	4.2	4.8	5.1	4.7	5.0
Women, 16 years and over	7.4	7.9	7.7	7.8	7.7	8.0	8.2	8.4	8.5	8.4	8.9	9.0	9.4	9.5	9.1
16 to 19 years	17.2	19.0	18.4	18.6	18.2	19.5	20.7	20.9	20.5	21.2	22.1	20.1	21.3	22.1	20.2
16 to 17 years	19.6	20.7	21.1	19.7	20.0	21.2	21.9	22.5	21.1	20.6	22.5	20.8	24.5	24.1	21.4
18 to 19 years	15.6	17.9	16.8	17.7	16.9	18.3	20.6	19.9	20.0	21.1	21.9	19.5	19.4	20.6	19.7
20 to 24 years	10.4	11.2	11.2	11.3	11.1	11.4	11.5	11.3	12.0	11.9	12.7	12.5	13.3	12.9	12.9
25 years and over	5.5	5.9	5.7	5.8	5.6	6.0	6.1	6.4	6.4	6.3	6.5	7.0	7.2	7.4	7.2
25 to 54 years	6.0	6.3	6.1	6.1	6.0	6.3	6.5	6.8	6.9	6.7	7.0	7.6	7.7	8.0	7.4
55 years and over	3.2	3.8	3.5	3.7	3.7	4.3	4.0	3.8	3.7	4.1	4.3	4.3	4.8	5.0	6.0

6. Unemployed persons, by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	1981							1982					
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
NUMBER OF UNEMPLOYED													
Lost last job	4,173	3,867	4,106	4,426	4,573	4,905	5,343	5,205	5,153	5,622	5,806	5,801	6,302
On layoff	1,302	1,225	1,276	1,452	1,631	1,826	2,042	1,860	1,740	1,828	1,946	1,969	2,071
Other job losers	2,871	2,642	2,830	2,974	2,942	3,079	3,301	3,345	3,413	3,794	3,859	3,832	4,231
Left last job	896	926	870	921	976	916	923	835	984	865	937	874	813
Reentered labor force	2,039	2,078	2,034	2,059	2,178	2,339	2,244	2,079	2,277	2,249	2,365	2,438	2,372
Seeking first job	973	940	971	977	1,002	996	1,021	1,055	1,100	1,044	1,081	1,154	1,088
PERCENT DISTRIBUTION													
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	51.6	49.5	51.4	52.8	52.4	53.6	56.1	56.7	54.3	57.4	57.4	56.9	59.6
On layoff	16.1	15.7	16.0	17.3	18.7	19.9	21.4	20.3	18.3	18.7	18.9	19.0	19.6
Other job losers	35.5	33.8	35.4	35.5	33.7	33.6	34.6	36.5	35.9	38.7	38.5	37.9	40.0
Job leavers	11.1	11.9	11.0	11.0	11.2	10.0	9.7	9.1	10.2	9.0	9.1	8.4	7.7
Reentrants	25.2	26.6	25.5	24.6	25.0	25.5	23.5	22.7	24.0	22.9	23.0	23.5	22.4
New entrants	12.0	12.0	12.2	11.7	11.5	10.9	10.7	11.5	11.6	10.7	10.5	11.1	10.3
PERCENT OF CIVILIAN LABOR FORCE													
Job losers	3.8	3.6	3.8	4.1	4.2	4.5	4.9	4.8	4.7	5.1	5.4	5.3	5.7
Job leavers	.8	.9	.8	.9	.9	.8	.8	.8	.9	.8	.9	.8	.7
Reentrants	1.9	1.9	1.9	1.9	2.0	2.1	2.1	1.9	2.1	2.1	2.2	2.2	2.2
New entrants	.9	.9	.9	.9	.9	.9	.9	1.0	1.0	1.0	1.0	1.0	1.0

7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1981							1982					
	1980	1981	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
Less than 5 weeks	3,295	3,449	3,303	3,323	3,326	3,529	3,707	3,852	4,037	3,852	3,789	3,825	3,958	3,874	3,543
5 to 14 weeks	2,470	2,539	2,423	2,312	2,459	2,585	2,686	2,882	3,016	3,068	3,052	3,078	3,304	3,320	3,458
15 weeks and over	1,871	2,285	2,363	2,170	2,217	2,248	2,292	2,364	2,372	2,399	2,724	2,954	3,015	3,286	3,673
15 to 26 weeks	1,052	1,122	1,227	1,096	1,078	1,146	1,166	1,229	1,189	1,210	1,445	1,605	1,508	1,634	1,826
27 weeks and over	820	1,162	1,136	1,074	1,139	1,102	1,126	1,135	1,183	1,190	1,278	1,349	1,507	1,652	1,847
Average (mean) duration, in weeks	11.9	13.7	14.3	14.1	14.3	13.7	13.6	13.1	12.8	13.5	14.1	13.9	14.2	14.6	16.5

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by 177,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

Definitions

Employed persons are all persons who received pay (including holiday and sick pay) for any part of the payroll period including the 12th of the month. Persons holding more than one job (about 5 percent of all persons in the labor force) are counted in each establishment which reports them.

Production workers in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 12-17 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities; in wholesale and retail trade; in finance, insurance, and real estate; and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to reflect the effects of changes in consumer prices. The deflator for this series is derived from the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated to underlying wage-rate developments: fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries.

Hours represent the average weekly hours of production or nonsupervisory workers for which pay was received and are different from standard or scheduled hours. **Overtime hours** represent the portion of gross average weekly hours which were in excess of regular hours and for which overtime premiums were paid.

Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of May 1982 data, published in the July 1982 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Complete comparable historical unadjusted and seasonally adjusted data are published in a Supplement to Employment and Earnings (unadjusted data from April 1977 through February 1982 and seasonally adjusted data from January 1974 through February 1982) and in *Employment and Earnings, United States, 1909-78*, BLS Bulletin 1312-11 (for prior periods).

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9-20. See also *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976).

8. Employment by industry, selected years, 1950-81

[Nonagricultural payroll data, in thousands]

Year	Total	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale and retail trade	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services	Government: Total	Government: Federal	Government: State and local
1950	45,197	901	2,364	15,241	4,034	9,386	2,635	6,751	1,888	5,357	6,026	1,928	4,098
1955	50,641	792	2,839	16,882	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1960[1]	54,189	712	2,926	16,796	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1964	58,283	634	3,097	17,274	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	632	3,232	18,062	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	627	3,317	19,214	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	613	3,248	19,447	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	606	3,350	19,781	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	619	3,575	20,167	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	623	3,588	19,367	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	609	3,704	18,623	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	628	3,889	19,151	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	642	4,097	20,154	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	697	4,020	20,077	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	752	3,525	18,323	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	779	3,576	18,997	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	813	3,851	19,682	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	851	4,229	20,505	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	958	4,463	21,040	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,147
1980	90,406	1,027	4,346	20,285	5,146	20,310	5,275	15,035	5,160	17,890	16,241	2,866	13,375
1981	91,105	1,132	4,176	20,173	5,157	20,551	5,358	15,192	5,301	18,592	16,024	2,772	13,253

[1] Data include Alaska and Hawaii beginning in 1959.

9. Employment by State

[Nonagricultural payroll data, in thousands]

State	May 1981	Apr. 1982	May 1982^{p}	State	May 1981	Apr. 1982	May 1982^{p}
Alabama	1,347.8	1,338.2	1,337.1	Montana	284.6	288.1	288.0
Alaska	176.7	180.9	186.2	Nebraska	630.8	610.7	616.4
Arizona	1,044.8	1,049.4	1,038.4	Nevada	413.2	413.2	415.6
Arkansas	750.0	726.6	728.3	New Hampshire	392.9	388.9	393.1
California	10,046.1	10,020.2	10,026.9	New Jersey	3,085.3	3,051.5	3,067.4
Colorado	1,265.5	1,287.0	1,285.2	New Mexico	478.5	474.8	475.8
Connecticut	1,450.3	1,417.7	1,425.2	New York	7,302.0	7,248.0	7,305.2
Delaware	260.0	256.1	258.3	North Carolina	2,397.7	2,352.9	2,348.7
District of Columbia	610.2	602.1	601.4	North Dakota	249.5	247.4	252.9
Florida	3,725.2	3,815.2	3,789.1	Ohio	4,356.7	4,216.6	4,248.4
Georgia	2,192.4	2,165.9	2,164.8	Oklahoma	1,192.0	1,218.5	1,224.5
Hawaii	406.7	403.3	402.7	Oregon	1,028.5	971.6	975.1
Idaho	327.8	315.7	317.1	Pennsylvania	4,754.5	4,585.2	4,598.8
Illinois	4,749.9	4,621.3	4,648.3	Rhode Island	403.1	387.2	391.0
Indiana	2,136.0	2,032.0	2,046.1	South Carolina	1,207.7	1,189.9	1,182.1
Iowa	1,104.4	1,057.6	1,063.1	South Dakota	238.5	231.7	235.7
Kansas	958.0	939.6	939.5	Tennessee	1,760.0	1,720.8	(1)
Kentucky	1,201.4	1,166.9	1,171.6	Texas	6,112.9	6,297.0	6,291.0
Louisiana	1,626.8	1,629.2	1,622.1	Utah	552.1	560.7	560.8
Maine	417.7	403.0	409.6	Vermont	201.2	197.0	200.2
Maryland	1,725.5	1,683.0	1,689.3	Virginia	2,154.3	2,157.1	2,163.6
Massachusetts	2,683.5	2,625.1	2,641.3	Washington	1,617.6	1,556.5	1,565.1
Michigan	3,419.7	3,206.2	3,250.2	West Virginia	585.6	606.2	609.1
Minnesota	1,777.8	1,720.8	1,741.3	Wisconsin	1,923.7	1,857.3	1,874.0
Mississippi	828.1	808.6	805.0	Wyoming	215.4	213.3	218.1
Missouri	1,991.1	1,958.7	1,971.0				
				Virgin Islands	37.8	35.9	(1)

[1] Not available.

10. Employment by industry division and major manufacturing group

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1981							1982					
	1980	1981	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May^{p}	June^{p}
TOTAL	90,406	91,105	92,056	91,107	91,087	91,620	91,884	91,765	91,437	89,260	89,413	89,679	89,884	90,410	90,741
MINING	1,027	1,132	1,159	1,184	1,200	1,201	1,196	1,203	1,200	1,183	1,180	1,178	1,171	1,156	1,161
CONSTRUCTION	4,346	4,176	4,260	4,415	4,431	4,389	4,340	4,221	4,008	3,576	3,559	3,631	3,796	4,002	4,102
MANUFACTURING	20,285	20,173	20,445	20,246	20,370	20,489	20,271	20,025	19,705	19,353	19,299	19,207	19,073	19,043	19,074
Production workers	14,214	14,021	14,267	14,043	14,153	14,304	14,079	13,834	13,515	13,200	13,168	13,083	12,871	12,864	13,016
Durable goods	12,187	12,117	12,317	12,179	12,164	12,272	12,144	11,979	11,762	11,557	11,503	11,454	11,298	11,318	11,329
Production workers	8,442	8,301	8,486	8,330	8,302	8,423	8,297	8,135	7,922	7,739	7,705	7,664	7,572	7,594	7,572
Lumber and wood products	690.5	668.7	699.4	696.9	691.2	680.9	654.5	629.1	606.4	587.1	582.9	592.0	603.0	618.5	635.6
Furniture and fixtures	465.8	467.3	470.9	462.3	470.6	474.9	473.9	467.4	461.9	454.2	450.6	446.3	443.8	439.6	441.9
Stone, clay, and glass products	662.1	638.2	658.2	654.2	656.3	652.0	639.8	628.5	606.9	576.0	571.5	574.2	580.1	588.3	589.7
Primary metal industries	1,142.2	1,121.1	1,148.1	1,128.4	1,132.6	1,131.7	1,102.2	1,081.0	1,051.5	1,034.9	1,018.4	1,004.4	977.3	949.2	943.8
Fabricated metal products	1,613.1	1,582.4	1,616.6	1,583.6	1,589.9	1,615.8	1,591.8	1,570.4	1,539.3	1,508.7	1,500.3	1,491.3	1,476.4	1,465.8	1,467.8
Machinery, except electrical	2,494.0	2,507.0	2,524.9	2,512.2	2,507.1	2,536.2	2,525.1	2,510.0	2,494.7	2,464.8	2,458.5	2,430.8	2,386.4	2,373.3	2,346.0
Electric and electronic equipment	2,090.6	2,082.2	2,109.5	2,096.0	2,102.5	2,120.0	2,113.3	2,086.8	2,061.4	2,056.6	2,045.2	2,034.2	2,027.9	2,024.4	2,034.6
Transportation equipment	1,899.7	1,892.6	1,942.6	1,887.0	1,850.8	1,904.5	1,888.9	1,857.0	1,808.3	1,766.0	1,758.5	1,776.2	1,749.8	1,761.2	1,752.5
Instruments and related products	711.3	726.8	732.3	731.2	735.8	732.6	729.6	727.6	726.5	719.0	715.3	713.8	711.1	711.7	714.6
Miscellaneous manufacturing	418.0	410.7	414.9	407.5	417.0	423.8	425.0	421.5	406.8	388.8	391.3	392.3	390.0	390.0	389.5
Nondurable goods	8,098	8,056	8,128	8,067	8,206	8,227	8,127	8,046	7,943	7,796	7,796	7,753	7,717	7,725	7,754.4
Production workers	5,772	5,721	5,781	5,713	5,851	5,881	5,782	5,699	5,593	5,461	5,463	5,429	5,399	5,410	5,444
Food and kindred products	1,708.0	1,674.3	1,663.9	1,700.0	1,758.6	1,763.2	1,719.4	1,680.8	1,649.1	1,605.0	1,604.7	1,587.9	1,578.5	1,588.3	1,624.4
Tobacco manufactures	68.9	69.8	65.5	65.3	73.8	75.7	75.0	73.1	71.7	70.5	67.5	64.2	62.0	61.1	62.4
Textile mill products	847.7	822.5	834.1	819.6	829.7	831.9	816.4	809.1	788.2	777.6	776.6	780.0	770.5	757.7	739.5
Apparel and other textile products	1,263.5	1,244.0	1,271.8	1,218.2	1,260.3	1,270.5	1,257.9	1,243.5	1,210.5	1,175.8	1,194.4	1,184.5	1,167.5	1,170.9	1,178.0
Paper and allied products	682.8	687.8	696.5	691.8	695.5	697.1	688.4	681.1	676.0	669.3	665.8	665.1	662.2	658.9	664.5
Printing and publishing	1,252.1	1,265.8	1,264.0	1,264.0	1,265.9	1,270.0	1,274.5	1,279.4	1,286.3	1,273.8	1,276.9	1,279.1	1,273.8	1,271.2	1,267.9
Chemicals and allied products	1,107.4	1,107.3	1,121.6	1,116.7	1,112.0	1,110.1	1,104.4	1,100.1	1,096.9	1,089.0	1,087.5	1,087.1	1,080.9	1,079.4	1,084.6
Petroleum and coal products	197.9	215.6	220.0	221.1	220.7	218.0	216.8	215.9	212.5	204.7	203.2	203.7	203.8	206.4	208.8
Rubber and miscellaneous plastics products	726.8	736.1	750.9	738.8	749.2	752.9	740.0	730.5	718.3	710.8	706.5	699.8	704.2	704.6	707.6
Leather and leather products	232.9	233.0	240.1	228.4	239.1	237.4	235.8	232.4	223.5	219.0	212.5	211.6	213.4	214.4	215.6
TRANSPORTATION AND PUBLIC UTILITIES	5,146	5,157	5,199	5,181	5,180	5,227	5,208	5,188	5,157	5,085	5,051	5,040	5,059	5,086	5,112
WHOLESALE AND RETAIL TRADE	20,310	20,551	20,671	20,600	20,664	20,731	20,731	20,883	21,170	20,417	20,258	20,306	20,446	20,632	20,721
WHOLESALE TRADE	5,275	5,359	5,397	5,391	5,402	5,388	5,400	5,398	5,372	5,314	5,303	5,309	5,307	5,315	5,334
RETAIL TRADE	15,035	15,192	15,274	15,209	15,262	15,343	15,331	15,485	15,798	15,103	14,955	14,997	15,139	15,317	15,387
FINANCE, INSURANCE, AND REAL ESTATE	5,160	5,301	5,353	5,376	5,374	5,327	5,314	5,308	5,313	5,290	5,285	5,304	5,319	5,340	5,402
SERVICES	17,890	18,592	18,711	18,771	18,771	18,740	18,824	18,800	18,775	18,523	18,696	18,839	18,967	19,024	19,124
GOVERNMENT	16,241	16,024	16,168	15,334	15,097	15,529	16,000	16,137	16,108	15,862	16,085	16,176	16,154	16,148	16,055
Federal	2,866	2,772	2,825	2,833	2,803	2,735	2,737	2,729	2,729	2,717	2,723	2,725	2,730	2,739	2,770
State and local	13,375	13,253	13,343	12,501	12,294	12,794	13,263	13,408	13,379	13,145	13,362	13,451	13,424	13,409	13,285

11. Employment by industry division and major manufacturing group, seasonally adjusted

[Nonagricultural payroll data, in thousands]

Industry division and group	1981							1982					
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May p	June p
TOTAL	91,296	91,396	91,322	91,363	91,224	90,996	90,842	90,460	90,459	90,304	90,083	90,151	90,010
MINING	1,137	1,164	1,180	1,192	1,195	1,202	1,206	1,201	1,203	1,197	1,182	1,154	1,130
CONSTRUCTION	4,185	4,175	4,146	4,124	4,101	4,071	4,026	3,996	3,974	3,934	3,936	3,894	3,852
MANUFACTURING	20,334	20,379	20,311	20,267	20,097	19,903	19,676	19,517	19,454	19,319	19,169	19,114	18,971
Production workers	14,177	14,212	14,136	14,087	13,915	13,717	13,488	13,341	13,290	13,179	13,042	13,014	12,934
Durable goods	12,246	12,266	12,228	12,184	12,059	11,901	11,724	11,622	11,575	11,490	11,375	11,337	11,254
Production workers	8,427	8,430	8,389	8,345	8,218	8,061	7,885	7,793	7,750	7,685	7,576	7,557	7,518
Lumber and wood products	685	683	671	661	643	629	615	607	611	607	615	618	623
Furniture and fixtures	474	476	475	473	466	462	457	452	449	446	443	443	445
Stone, clay, and glass products	644	644	643	638	629	620	610	596	596	590	584	587	581
Primary metal industries	1,137	1,132	1,134	1,125	1,104	1,082	1,053	1,038	1,024	1,007	976	946	934
Fabricated metal products	1,611	1,617	1,610	1,604	1,577	1,553	1,529	1,515	1,505	1,496	1,481	1,473	1,462
Machinery, except electrical	2,516	2,527	2,532	2,536	2,532	2,511	2,486	2,450	2,446	2,419	2,389	2,378	2,339
Electric and electronic equipment	2,104	2,112	2,116	2,113	2,101	2,077	2,049	2,055	2,048	2,038	2,034	2,033	2,029
Transportation equipment	1,928	1,925	1,901	1,884	1,861	1,830	1,791	1,777	1,778	1,774	1,748	1,756	1,747
Instruments and related products	726	731	734	734	731	727	725	720	718	716	713	714	708
Miscellaneous manufacturing	411	419	412	413	412	411	409	403	400	397	392	389	386
Nondurable goods	8,088	8,113	8,083	8,083	8,038	8,002	7,952	7,895	7,879	7,829	7,794	7,777	7,717
Production workers	5,750	5,773	5,747	5,742	5,697	5,656	5,603	5,548	5,531	5,494	5,466	5,457	5,416
Food and kindred products	1,673	1,678	1,659	1,658	1,662	1,664	1,661	1,657	1,663	1,658	1,643	1,649	1,634
Tobacco manufactures	71	70	70	69	69	69	68	69	68	68	67	67	67
Textile mill products	830	835	829	827	814	804	794	780	777	760	773	758	736
Apparel and other textile products	1,251	1,255	1,253	1,253	1,243	1,235	1,222	1,201	1,201	1,186	1,165	1,164	1,159
Paper and allied products	690	691	691	695	685	681	677	674	670	668	664	661	659
Printing and publishing	1,263	1,268	1,271	1,274	1,276	1,276	1,276	1,275	1,276	1,278	1,274	1,274	1,267
Chemicals and allied products	1,111	1,110	1,107	1,110	1,107	1,103	1,100	1,095	1,093	1,088	1,082	1,078	1,074
Petroleum and coal products	217	217	216	216	215	215	214	210	208	207	208	206	206
Rubber and miscellaneous plastics products	747	750	752	746	734	725	716	712	708	703	706	708	704
Leather and leather products	235	239	235	235	233	230	224	222	215	213	214	212	211
TRANSPORTATION AND PUBLIC UTILITIES	5,162	5,169	5,168	5,181	5,162	5,150	5,128	5,125	5,115	5,100	5,084	5,101	5,076
WHOLESALE AND RETAIL TRADE	20,590	20,620	20,650	20,660	20,654	20,623	20,524	20,630	20,670	20,655	20,584	20,658	20,643
WHOLESALE TRADE	5,366	5,375	5,387	5,383	5,380	5,375	5,357	5,346	5,343	5,336	5,323	5,326	5,302
RETAIL TRADE	15,224	15,245	15,263	15,277	15,274	15,248	15,167	15,284	15,327	15,319	15,261	15,332	15,341
FINANCE, INSURANCE, AND REAL ESTATE	5,302	5,311	5,319	5,329	5,325	5,324	5,331	5,326	5,326	5,336	5,335	5,340	5,349
SERVICES	18,556	18,615	18,654	18,707	18,773	18,815	18,834	18,831	18,867	18,904	18,929	18,948	18,972
GOVERNMENT	16,020	15,964	15,894	15,904	15,917	15,908	15,917	15,864	15,850	15,859	15,852	15,842	15,917
Federal	2,777	2,775	2,769	2,764	2,757	2,749	2,756	2,741	2,737	2,736	2,730	2,734	2,724
State and local	13,243	13,189	13,125	13,140	13,160	13,159	13,161	13,123	13,113	13,123	13,122	13,108	13,193

12. Hours and earnings, by industry division, selected years, 1950-81

[Gross averages, production or nonsupervisory workers on nonagricultural payrolls]

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Total private			Mining			Construction			Manufacturing		
1950	$53.13	39.8	$1.335	$67.16	37.9	$1.772	$69.68	37.4	$1.863	$58.32	40.5	$1.440
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1960[1]	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	269.34	40.2	6.70
1980	235.10	35.3	6.66	397.06	43.3	9.17	367.78	37.0	9.94	288.62	39.7	7.27
1981	255.20	35.2	7.25	438.19	43.7	10.05	398.52	36.9	10.80	318.00	39.8	7.99

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950	....	....	....	$44.55	40.5	$1.100	$50.52	37.7	$1.340	....	....	....
1955	....	....	....	55.16	39.4	1.40	63.92	37.6	1.70	....	....	....
1960[1]	....	....	....	66.01	38.6	1.71	75.14	37.2	2.02	....	....	....
1964	$118.78	41.1	$2.89	74.66	37.9	1.97	85.79	37.3	2.30	$70.03	36.1	$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	351.25	39.6	8.87	176.46	32.2	5.48	209.60	36.2	5.79	190.71	32.6	5.85
1981	382.18	39.4	9.70	190.95	32.2	5.93	229.05	36.3	6.31	208.97	32.6	6.41

[1] Data include Alaska and Hawaii beginning in 1959.

13. Weekly hours, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981							1982					
	1980	1981	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May ᵖ	June ᵖ
TOTAL PRIVATE	35.3	35.2	35.4	35.6	35.6	35.1	35.2	35.1	35.2	33.9	34.8	34.7	34.6	34.8	35.0
MINING	43.3	43.7	42.3	43.6	44.2	43.9	44.5	44.4	44.8	42.9	43.6	43.8	42.7	42.5	42.0
CONSTRUCTION	37.0	36.9	37.2	37.8	37.4	35.8	37.6	37.1	37.1	33.3	35.9	37.0	36.7	37.5	37.4
MANUFACTURING	39.7	39.8	40.2	39.6	39.9	39.5	39.7	39.7	39.9	37.1	39.2	39.1	38.7	39.0	39.2
Overtime hours	2.8	2.8	3.0	2.8	3.0	2.9	2.8	2.6	2.6	2.2	2.3	2.3	2.1	2.2	2.3
Durable goods	40.1	40.2	40.6	40.0	40.2	39.8	40.1	40.1	40.4	37.7	39.7	39.6	39.2	39.4	39.6
Overtime hours	2.8	2.8	3.0	2.8	2.9	2.8	2.7	2.5	2.6	2.1	2.2	2.2	2.0	2.1	2.3
Lumber and wood products	38.5	38.7	39.5	38.7	39.0	37.9	38.2	37.7	38.1	33.7	37.5	37.6	37.3	38.4	38.2
Furniture and fixtures	38.1	38.4	38.9	37.8	38.6	37.7	38.6	38.1	38.9	32.5	37.4	37.6	37.1	37.2	37.6
Stone, clay, and glass products	40.8	40.6	41.2	40.8	41.0	40.6	40.5	40.5	40.1	37.4	39.2	39.8	39.9	40.4	40.7
Primary metal industries	40.1	40.5	40.9	40.3	40.3	40.8	39.7	39.7	39.6	38.4	39.6	39.0	38.7	38.3	39.1
Fabricated metal products	40.4	40.3	40.8	39.9	40.3	39.7	40.2	40.1	40.5	37.8	39.4	39.6	39.0	39.4	39.6
Machinery except electrical	41.0	40.9	41.1	40.5	40.7	40.4	40.7	41.0	41.6	39.2	40.7	40.4	39.8	39.6	39.6
Electric and electronic equipment	39.8	39.9	40.2	39.7	40.0	39.7	39.9	39.8	40.4	38.1	39.8	39.5	39.0	39.2	39.4
Transportation equipment	40.6	40.9	41.4	40.8	40.6	39.9	41.0	40.8	41.4	38.4	40.4	40.4	40.5	41.0	41.5
Instruments and related products	40.5	40.4	40.4	39.9	40.4	40.4	40.4	40.8	40.7	38.6	40.0	40.1	39.5	40.0	39.8
Miscellaneous manufacturing	38.7	38.8	39.0	38.5	38.9	38.7	39.3	39.5	39.1	36.6	38.4	38.7	38.2	38.5	38.6
Nondurable goods	39.0	39.1	39.5	39.1	39.4	39.1	39.1	39.1	39.2	36.2	38.6	38.3	38.1	38.4	38.6
Overtime hours	2.8	2.8	2.9	2.8	3.0	3.1	2.9	2.8	2.7	2.4	2.5	2.4	2.3	2.4	2.4
Food and kindred products	39.7	39.7	39.7	39.6	39.9	39.8	39.5	39.8	40.4	38.7	39.7	39.0	38.8	39.3	39.6
Tobacco manufactures	38.1	38.8	38.5	38.6	40.7	40.2	39.4	38.8	38.1	36.1	38.3	37.3	36.6	36.9	37.6
Textile mill products	40.1	39.6	40.4	39.6	39.9	38.9	39.4	39.2	38.6	31.2	38.1	37.7	37.2	37.9	38.1
Apparel and other textile products	35.4	35.7	36.3	36.0	36.3	35.2	35.8	35.8	35.5	30.0	35.2	35.1	34.4	34.9	35.2
Paper and allied products	42.2	42.5	42.7	42.4	42.4	43.2	42.4	42.3	42.7	41.3	42.0	41.7	41.8	41.5	41.7
Printing and publishing	37.1	37.3	37.2	37.2	37.5	37.4	37.2	37.3	37.9	36.4	37.1	37.1	36.8	36.8	36.9
Chemicals and allied products	41.5	41.6	41.6	41.5	41.4	42.2	41.5	41.6	41.8	40.8	41.1	40.7	40.7	40.8	40.8
Petroleum and coal products	41.8	43.2	43.5	43.7	43.0	44.4	43.1	43.1	42.6	43.2	42.2	42.4	44.0	43.8	44.6
Rubber and miscellaneous plastics products	40.0	40.3	40.9	39.9	40.4	39.7	40.2	39.9	40.1	37.8	39.9	39.7	39.5	39.7	40.0
Leather and leather products	36.7	36.8	38.1	36.5	36.9	36.0	36.7	36.6	36.4	33.3	35.3	35.6	35.2	36.3	36.7
TRANSPORTATION AND PUBLIC UTILITIES	39.6	39.4	39.7	39.7	39.5	39.2	39.1	39.2	39.3	38.5	39.2	39.0	38.8	38.9	39.0
WHOLESALE AND RETAIL TRADE	32.2	32.2	32.4	32.8	32.8	32.2	32.0	31.9	32.3	31.1	31.6	31.6	31.7	31.9	32.2
WHOLESALE TRADE	38.5	38.6	38.6	38.8	38.7	38.5	38.6	38.6	38.7	37.8	38.2	38.3	38.2	38.4	38.7
RETAIL TRADE	30.2	30.1	30.3	30.9	30.9	30.2	29.8	29.8	30.3	29.0	29.4	29.4	29.6	29.8	30.1
FINANCE, INSURANCE, AND REAL ESTATE	36.2	36.3	36.1	36.3	36.4	36.0	36.2	36.2	36.2	36.2	36.2	36.3	36.2	36.3	36.1
SERVICES	32.6	32.6	32.7	33.1	32.9	32.4	32.5	32.5	32.6	32.3	32.5	32.5	32.5	32.4	32.7

14. Weekly hours, by industry division and major manufacturing group, seasonally adjusted

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	1981							1982					
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May ᵖ	June ᵖ
TOTAL PRIVATE	35.2	35.3	35.2	35.0	35.1	35.1	35.0	34.4	35.0	34.9	34.9	34.9	34.8
MANUFACTURING	40.1	40.0	39.9	39.4	39.5	39.3	39.1	37.6	39.4	39.0	39.0	39.1	39.1
Overtime hours	3.0	3.0	3.0	2.7	2.7	2.5	2.4	2.3	2.4	2.3	2.4	2.3	2.4
Durable goods	40.5	40.5	40.4	39.7	40.0	39.7	39.5	38.2	39.8	39.5	39.5	39.5	39.6
Overtime hours	3.0	3.0	3.0	2.7	2.6	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.3
Lumber and wood products	38.9	38.7	38.4	37.6	37.8	37.7	37.7	35.0	37.9	37.6	37.6	38.4	37.7
Furniture and fixtures	38.8	38.6	38.4	37.4	38.0	37.6	37.9	33.6	37.7	37.3	37.4	37.5	37.5
Stone, clay, and glass products	40.7	40.8	40.7	40.3	40.1	40.1	39.7	38.6	40.1	40.0	40.0	40.2	40.3
Primary metal industries	40.9	40.7	40.8	40.6	40.0	39.6	39.2	38.3	39.4	38.8	38.5	38.5	39.1
Fabricated metal products	40.6	40.5	40.4	39.6	40.0	39.7	39.5	38.1	39.7	39.5	39.4	39.5	39.4
Machinery, except electrical	41.1	41.2	41.1	40.3	40.8	40.7	40.4	39.3	40.7	40.2	40.1	39.7	39.6
Electric and electronic equipment	40.2	40.4	40.3	39.7	39.8	39.4	39.5	38.3	39.8	39.4	39.3	39.4	39.4
Transportation equipment	41.4	41.2	41.2	40.1	40.6	40.4	39.7	39.0	40.5	40.4	41.1	41.0	41.5
Instruments and related products	40.4	40.5	40.6	40.4	40.3	40.2	39.9	39.0	39.9	39.9	39.9	40.1	39.8
Miscellaneous manufacturing	39.0	39.0	38.9	38.4	38.9	39.0	38.5	37.3	38.6	38.6	38.5	38.7	38.6
Nondurable goods	39.4	39.2	39.2	38.9	38.9	38.7	38.6	36.8	38.9	38.5	38.4	38.5	38.5
Overtime hours	2.9	2.9	2.9	2.8	2.8	2.7	2.6	2.5	2.6	2.5	2.6	2.5	2.4
Food and kindred products	39.7	39.5	39.4	39.3	39.5	39.5	39.8	39.1	40.2	39.5	39.4	39.3	39.6
Textile mill products	40.1	40.1	39.8	38.8	39.0	38.7	37.8	32.3	38.3	37.6	37.7	37.9	37.8
Apparel and other textile products	35.9	35.8	35.9	35.2	35.5	35.5	35.1	31.4	35.5	35.0	34.7	34.8	34.8
Paper and allied products	42.7	42.7	42.5	43.0	42.4	42.0	41.8	41.3	42.3	41.8	42.1	41.8	41.7
Printing and publishing	37.4	37.3	37.3	37.1	37.1	37.1	37.1	36.9	37.4	37.1	37.1	36.9	37.1
Chemicals and allied products	41.7	41.7	41.7	42.2	41.5	41.2	41.3	41.0	41.2	40.7	40.7	41.0	40.9
Petroleum and coal products	43.4	43.1	42.9	43.1	42.2	42.5	42.7	44.3	43.5	43.5	44.0	44.0	44.5
Rubber and miscellaneous plastics products	40.9	40.5	40.5	39.7	39.9	39.6	39.4	37.9	40.0	39.6	39.8	39.9	40.0
Leather and leather products	37.1	36.4	36.7	36.2	36.7	36.5	36.1	34.1	35.6	35.8	35.6	35.9	35.7
WHOLESALE AND RETAIL TRADE	32.1	35.2	32.2	32.1	32.0	32.1	32.0	31.7	32.0	31.9	31.8	32.0	31.9
WHOLESALE TRADE	38.5	38.6	38.6	38.5	38.4	38.5	38.4	38.1	38.5	38.4	38.3	38.5	38.7
RETAIL TRADE	30.0	30.1	30.1	30.1	29.9	30.0	29.9	29.7	29.9	29.8	29.8	30.0	29.8
SERVICES	32.5	32.6	32.5	32.5	32.6	32.6	32.6	32.5	32.6	32.6	32.7	32.6	32.6

NOTE: The industry divisions of mining; construction; tobacco manufactures (a major manufacturing group, nondurable goods); transportation and public utilities; and finance, insurance, and real estate are no longer shown. This is because the seasonal component in these is small relative to the trend-cycle, or irregular components, or both, and consequently cannot be precisely separated.

15. Hourly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981							1982					
	1980	1981	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May [p]	June [p]
TOTAL PRIVATE	$6.66	$7.25	$7.20	$7.24	$7.30	$7.40	$7.42	$7.47	$7.45	$7.55	$7.54	$7.55	$7.58	$7.63	$7.62
MINING	9.17	10.05	9.93	10.09	10.12	10.27	10.25	10.39	10.41	10.65	10.62	10.62	10.65	10.68	10.74
CONSTRUCTION	9.94	10.80	10.64	10.79	10.92	11.07	11.65	11.18	11.26	11.59	11.32	11.33	11.32	11.44	11.42
MANUFACTURING	7.27	7.99	7.97	8.02	8.03	8.16	8.16	8.20	8.27	8.42	8.34	8.37	8.42	8.45	8.51
Durable goods	7.75	8.53	8.54	8.57	8.59	8.70	8.73	8.77	8.83	8.92	8.89	8.91	8.94	9.02	9.07
Lumber and wood products	6.55	7.00	7.09	7.15	7.13	7.16	7.10	7.16	7.16	7.38	7.27	7.28	7.24	7.40	7.50
Furniture and fixtures	5.49	5.91	5.90	5.92	5.98	6.01	6.06	6.05	6.12	6.28	6.19	6.21	6.21	6.26	6.30
Stone, clay, and glass products	7.50	8.27	8.31	8.40	8.41	8.53	8.50	8.54	8.56	8.70	8.62	8.65	8.72	8.80	8.88
Primary metal industries	9.77	10.81	10.75	10.78	10.98	11.22	10.97	11.10	11.08	11.23	11.20	11.15	11.24	11.23	11.34
Fabricated metal products	7.45	8.20	8.23	8.21	8.26	8.33	8.39	8.42	8.53	8.55	8.57	8.64	8.69	8.79	8.82
Machinery, except electrical	8.00	8.81	8.79	8.83	8.84	8.96	9.04	9.08	9.18	9.19	9.20	9.18	9.24	9.28	9.34
Electric and electronic equipment	6.94	7.62	7.56	7.65	7.73	7.75	7.80	7.83	7.90	7.98	7.96	8.01	8.03	8.06	8.09
Transportation equipment	9.35	10.39	10.45	10.44	10.37	10.49	10.74	10.74	10.76	10.79	10.82	10.89	10.89	11.09	11.19
Instruments and related products	6.80	7.43	7.33	7.43	7.55	7.59	7.60	7.68	7.81	7.93	7.94	8.00	8.07	8.19	8.18
Miscellaneous manufacturing	5.46	5.96	5.92	5.97	5.96	6.05	6.05	6.11	6.19	6.27	6.29	6.32	6.35	6.38	6.42
Nondurable goods	6.55	7.18	7.13	7.22	7.23	7.36	7.33	7.38	7.44	7.67	7.54	7.57	7.65	7.64	7.70
Food and kindred products	6.85	7.43	7.41	7.45	7.48	7.56	7.51	7.61	7.67	7.82	7.74	7.79	7.90	7.90	7.89
Tobacco manufactures	7.74	8.88	9.35	9.48	8.70	8.76	8.67	9.04	8.96	9.21	9.56	9.72	10.05	9.90	10.47
Textile mill products	5.07	5.52	5.41	5.50	5.65	5.69	5.72	5.73	5.72	5.76	5.76	5.76	5.79	5.79	5.79
Apparel and other textile products	4.56	4.96	4.97	4.92	4.96	5.04	5.05	5.04	5.04	5.18	5.13	5.15	5.18	5.15	5.16
Paper and allied products	7.84	8.60	8.54	8.73	8.67	8.95	8.82	8.89	8.96	9.06	8.99	9.03	9.11	9.14	9.23
Printing and publishing	7.53	8.18	8.11	8.20	8.25	8.37	8.40	8.42	8.48	8.58	8.56	8.59	8.59	8.60	8.67
Chemicals and allied products	8.30	9.12	9.07	9.16	9.19	9.38	9.37	9.42	9.53	9.68	9.68	9.71	9.81	9.82	9.95
Petroleum and coal products	10.10	11.38	11.31	11.43	11.32	11.55	11.47	11.58	11.59	11.91	12.29	12.32	12.50	12.44	12.49
Rubber and miscellaneous plastics products	6.52	7.16	7.14	7.18	7.23	7.29	7.30	7.31	7.38	7.51	7.49	7.45	7.52	7.53	7.63
Leather and leather products	4.58	4.99	4.98	4.97	4.97	5.09	5.00	5.11	5.15	5.19	5.22	5.24	5.32	5.28	5.31
TRANSPORTATION AND PUBLIC UTILITIES	8.87	9.70	9.61	9.67	9.87	9.95	9.94	10.05	10.06	10.10	10.13	10.07	10.14	10.18	10.21
WHOLESALE AND RETAIL TRADE	5.48	5.93	5.88	5.91	5.94	6.04	6.01	6.04	6.02	6.17	6.16	6.16	6.18	6.20	6.19
WHOLESALE TRADE	6.96	7.57	7.49	7.58	7.65	7.70	7.73	7.79	7.81	7.94	7.94	7.93	7.97	8.03	7.99
RETAIL TRADE	4.88	5.25	5.22	5.24	5.25	5.37	5.29	5.32	5.31	5.43	5.42	5.43	5.44	5.47	5.47
FINANCE, INSURANCE, AND REAL ESTATE	5.79	6.31	6.25	6.28	6.38	6.39	6.43	6.52	6.47	6.56	6.62	6.59	6.64	6.76	6.68
SERVICES	5.85	6.41	6.33	6.34	6.41	6.52	6.58	6.67	6.66	6.79	6.79	6.77	6.81	6.84	6.80

16. Hourly Earnings Index for production or nonsupervisory workers on private nonagricultural payrolls, by industry division

[Seasonally adjusted data: 1977=100]

Industry	1981								1982					May 1982 to June 1982	June 1981 to June 1982 [1]
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May [p]	June [p]		
TOTAL PRIVATE (in current dollars)	138.4	139.1	140.5	141.4	142.0	143.0	143.5	144.9	145.0	145.4	146.3	147.6	147.9	.2	6.9
Mining [2]	147.4	149.0	149.5	151.7	151.4	153.4	153.4	156.2	156.0	156.0	156.5	157.0	158.2	.8	7.3
Construction	130.9	132.2	132.8	133.5	134.7	135.7	136.6	139.9	137.9	138.1	138.7	139.7	139.9	.1	6.9
Manufacturing	141.5	142.4	143.5	144.7	145.4	146.4	146.9	148.9	149.1	149.9	150.8	151.8	152.5	.4	7.8
Transportation and public utilities	139.6	139.0	141.6	141.5	142.3	143.5	144.3	145.5	146.0	146.3	146.9	148.1	149.1	.7	6.8
Wholesale and retail trade	137.6	138.4	139.7	141.0	140.5	141.3	141.7	142.1	142.5	142.8	143.7	145.2	145.2	(3)	5.5
Finance, insurance, and real estate	137.1	137.8	140.1	140.4	141.4	142.6	142.0	143.1	143.3	143.8	144.9	147.9	146.6	-.9	6.9
Services	136.7	137.4	139.2	139.7	140.9	142.2	142.6	143.4	143.7	143.9	145.1	146.4	146.5	.1	7.2
TOTAL PRIVATE (in constant dollars)	92.9	92.2	92.5	92.1	92.1	92.3	92.3	92.9	92.8	93.3	93.7	93.7	(4)	(4)	(4)

[1] Over-the-year percent change before seasonal adjustment.

[2] This series is not seasonally adjusted because the seasonal component is small relative to the trend-cycle, irregular components, or both, and consequently cannot be separated with sufficient precision.

[3] Less than 0.05 percent.

[4] Not available.

17. Weekly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981							1982					
	1980	1981	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May ^{p}	June ^{p}
TOTAL PRIVATE:															
Current dollars	$235.10	$255.20	$254.86	$257.74	$259.86	$259.74	$261.18	$262.20	$262.24	$255.95	$262.39	$261.99	$262.27	$265.52	$266.70
Constant (1977) dollars	172.74	170.13	170.49	170.35	170.64	168.88	169.49	169.71	169.30	164.70	168.31	168.37	167.80	168.16	(1)
MINING	397.06	439.19	420.04	439.92	447.30	450.85	456.13	461.32	466.37	456.89	463.03	465.16	454.76	453.90	$451.08
CONSTRUCTION	367.78	398.52	395.81	407.96	408.41	396.31	419.62	414.78	417.75	385.95	406.39	419.21	415.44	429.00	427.11
MANUFACTURING															
Current dollars	288.62	318.00	320.39	317.59	320.40	322.32	323.95	325.54	329.97	312.38	326.93	327.27	325.85	329.55	333.59
Constant (1977) dollars	212.06	212.00	214.31	209.91	210.37	209.57	210.22	210.71	213.02	201.02	209.70	210.33	208.48	208.71	(1)
Durable goods	310.78	342.91	346.72	342.80	345.32	346.26	350.07	351.66	356.73	336.28	352.93	352.84	350.45	355.39	$359.17
Lumber and wood products	252.18	270.90	280.06	276.71	278.07	271.36	271.22	269.93	272.80	248.71	272.63	273.73	270.05	284.16	286.50
Furniture and fixtures	209.17	226.94	229.51	223.78	231.21	226.58	233.92	230.51	238.07	204.10	231.51	233.50	230.39	232.87	236.88
Stone, clay, and glass products	306.00	335.76	342.37	342.72	344.81	346.32	344.25	345.87	343.26	325.38	337.90	344.27	347.93	355.52	361.42
Primary metal industries	391.78	437.81	439.68	434.43	442.90	457.78	435.51	440.67	438.77	431.23	443.52	434.85	434.99	430.11	443.39
Fabricated metal products	300.98	330.46	335.78	327.58	332.88	330.70	337.28	337.64	345.47	323.19	337.66	342.14	338.91	346.33	349.27
Machinery except electrical	328.00	360.33	361.27	357.62	359.79	361.98	367.93	372.28	381.89	360.25	374.44	370.87	367.75	367.49	369.86
Electric and electronic equipment	276.21	304.04	303.91	303.71	309.20	307.68	311.22	311.63	319.16	304.04	316.81	316.40	313.17	315.95	318.75
Transportation equipment	379.61	424.95	432.63	425.95	421.02	418.55	440.34	438.19	445.46	414.34	437.13	439.96	441.05	454.69	464.39
Instruments and related products	275.40	300.17	296.13	296.46	305.02	306.64	307.04	313.34	317.87	306.10	317.60	320.80	318.77	327.60	325.56
Miscellaneous manufacturing	211.30	231.25	230.86	229.85	231.84	234.14	237.77	241.35	242.03	229.48	241.54	244.58	242.57	245.63	247.81
Nondurable goods	255.45	280.74	281.64	282.30	284.86	287.78	286.60	288.56	291.05	277.65	291.04	289.93	291.47	293.38	297.22
Food and kindred products	271.95	294.97	294.18	295.02	298.45	300.89	296.65	302.88	309.87	302.63	307.28	303.81	306.52	310.47	312.44
Tobacco manufactures	294.89	344.54	359.98	365.16	354.09	352.15	341.60	350.75	341.38	332.48	366.15	362.56	367.83	365.31	393.67
Textile mill products	203.31	218.59	218.56	217.80	225.44	221.34	225.37	224.62	220.79	179.71	219.46	217.15	215.39	219.44	220.60
Apparel and other textile products	161.42	177.07	180.41	177.12	180.05	177.41	180.79	180.43	178.92	155.40	180.58	180.77	178.19	179.74	181.63
Paper and allied products	330.85	365.50	364.86	370.15	367.61	386.64	373.97	376.05	382.59	374.18	377.58	378.55	380.80	379.31	384.89
Printing and publishing	279.36	305.11	301.69	305.04	309.38	313.04	312.48	314.07	321.39	312.31	317.58	318.69	316.11	316.48	319.92
Chemicals and allied products	344.45	379.39	377.31	380.14	380.47	395.84	388.86	391.87	398.35	394.94	397.85	395.20	399.27	400.86	405.96
Petroleum and coal products	422.18	491.62	491.90	499.49	486.76	512.82	494.36	499.10	493.73	514.51	518.64	522.37	550.00	544.87	557.05
Rubber and miscellaneous plastics products	280.80	288.55	292.03	286.48	292.09	289.41	293.46	291.67	295.94	283.88	298.85	295.77	297.04	298.94	305.20
Leather and leather products	166.09	183.63	189.74	181.41	183.39	183.24	186.80	187.03	187.46	172.83	184.27	186.54	187.26	191.86	194.88
TRANSPORTATION AND PUBLIC UTILITIES	351.25	382.18	381.52	383.90	389.87	390.04	388.65	393.96	395.36	388.85	397.10	392.73	393.43	396.00	398.19
WHOLESALE AND RETAIL TRADE	176.46	190.95	190.51	193.85	194.83	194.49	192.32	192.68	194.45	191.89	194.86	194.66	195.91	197.78	199.32
WHOLESALE TRADE	267.96	292.20	289.11	294.10	296.06	296.45	298.38	300.69	302.25	300.13	303.31	303.72	304.45	306.35	309.21
RETAIL TRADE	147.38	158.03	158.17	161.92	162.23	162.17	157.64	158.54	160.89	157.47	159.35	159.64	161.02	163.01	164.65
FINANCE, INSURANCE, AND REAL ESTATE	209.60	229.05	225.63	227.96	232.23	230.04	232.77	236.02	234.21	237.47	239.64	239.22	240.37	245.39	241.15
SERVICES	190.71	208.97	206.99	209.85	210.89	211.25	213.85	216.78	217.12	219.32	220.68	220.03	221.33	221.62	222.36

[1] Not available.

UNEMPLOYMENT INSURANCE DATA

NATIONAL UNEMPLOYMENT INSURANCE DATA are compiled monthly by the Employment and Training Administration of the U.S. Department of Labor from monthly reports of unemployment insurance activity prepared by State agencies. Railroad unemployment insurance data are prepared by the U.S. Railroad Retirement Board.

Definitions

Data for **all programs** represent an unduplicated count of insured unemployment under State programs, Unemployment Compensation for Ex-Servicemen, and Unemployment Compensation for Federal Employees, and the Railroad Insurance Act.

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

An **application** for benefits is filed by a railroad worker at the beginning of his first period of unemployment in a benefit year; no application is required for subsequent periods in the same year. **Number of payments** are payments made in 14-day registration periods. The **average amount of benefit payment** is an average for all compensable periods, not adjusted for recovery of overpayments or settlement of underpayments. However, **total benefits** paid have been adjusted.

18. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1981								1982				
	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May[p]
All programs:													
Insured unemployment	3,111	2,949	3,012	2,874	2,680	2,753	3,228	3,935	4,681	4,723	4,892	4,760	4,388
State unemployment insurance program:[1]													
Initial claims[2]	1,417	1,741	2,114	1,610	1,681	1,996	2,286	3,272	3,328	2,272	2,418	2,347	1,895
Insured unemployment (average weekly volume)	2,691	2,596	2,743	2,656	2,488	2,592	3,061	3,778	4,470	4,376	4,282	4,067	3,729
Rate of insured unemployment	3.1	3.0	3.1	3.0	2.9	3.0	3.5	4.3	5.1	5.0	4.9	4.6	4.3
Weeks of unemployment compensated	9,790	9,928	10,486	9,594	9,565	9,424	10,052	14,592	15,962	15, 631	18,144	16,158	13,680
Average weekly benefit amount for total unemployment	$105.49	$99.02	$103.47	$105.94	$107.39	$108.92	$110.52	$112.83	$114.83	$116.95	$117.10	$117.51	$116.09
Total benefits paid	$1,006,341	$1,012,764	$1,061,899	$1,004,864	$1,001,020	$997,757	$1,080,810	$1,592,546	$1,764,206	$1,781,830	$2,072,642	$1,848,253	$1,573,771
Unemployment compensation for ex-servicemen:[3]													
Initial claims[1]	15	19	22	19	15	11	9	11	8	8	10	9	8
Insured unemployment (average weekly volume)	43	42	44	44	34	26	22	19	16	13	11	10	9
Weeks of unemployment compensated	183	192	203	190	153	116	91	93	65	49	48	37	31
Total benefits paid	$19,965	$21,145	$22,785	$21,425	$17,144	$12,952	$10,043	$10,155	$7,098	r$5,304	$5,141	$4,029	$3,431
Unemployment compensation for Federal civilian employees:[4]													
Initial claims	11	13	15	17	18	20	16	17	17	12	13	13	11
Insured unemployment (average weekly volume)	27	25	25	25	29	32	36	39	40	40	38	33	29
Weeks of unemployment compensated	107	105	105	102	100	112	127	174	162	154	172	147	121
Total benefits paid	$11,023	$10,705	$10,805	$9,543	$10,495	$11,719	$13,491	$18,891	$18,040	$17,517	$19,677	$16,820	$13,748
Railroad unemployment insurance:													
Applications	6	26	41	13	15	21	13	19	22	11	9	5	5
Insured unemployment (average weekly volume)	35	30	28	29	34	40	44	54	75	67	65	57	44
Number of payments	79	86	32	63	74	86	83	117	153	140	154	130	95
Average amount of benefit payment	$199.43	$201.06	$199.63	$202.53	$207.98	$197.26	$207.08	$212.33	$213.39	$214.07	$215.71	$209.48	$200.75
Total benefits paid	$15,428	$16,206	$11,541	$7,071	15,046	15,994	$16,377	$25,292	$30,544	$28,011	$33,853	$26,262	$19,110
Employment service:[5]													
New applications and renewals	....	12,868	....	....	16,502	....	....	4,081	....	....	7,439	....	....
Nonfarm placements	....	2,446	....	....	3,509	....	....	731	....	....	1,232	....	....

[1] Initial claims and State insured unemployment include data under the program for Puerto Rican sugarcane workers.

[2] Excludes transition claims under State programs.

[3] Excludes data on claims and payments made jointly with other programs.

[4] Excludes data on claims and payments made jointly with State programs.

[5] Cumulative total for fiscal year (October 1-September 30). Data computed quarterly.

NOTE: Data for Puerto Rico and the Virgin Islands included. Dashes indicate data not available.

r = revised.

PRICE DATA

PRICE DATA are gathered by the Bureau of Labor Statistics from retail and primary markets in the United States. Price indexes are given in relation to a base period (1967 = 100, unless otherwise noted).

Definitions

The **Consumer Price Index** is a monthly statistical measure of the average change in prices in a fixed market basket of goods and services. Effective with the January 1978 index, the Bureau of Labor Statistics began publishing CPI's for two groups of the population. One index, a new CPI for All Urban Consumers, covers 80 percent of the total noninstitutional population; and the other index, a revised CPI for Urban Wage Earners and Clerical Workers, covers about half the new index population. The All Urban Consumers index includes, in addition to wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctor's and dentist's fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items is kept essentially unchanged between major revisions so that only price changes will be measured. Prices are collected from over 18,000 tenants, 24,000 retail establishments, and 18,000 housing units for property taxes in 85 urban areas across the country. All taxes directly associated with the purchase and use of items are included in the index. Because the CPI's are based on the expenditures of two population groups in 1972–73, they may not accurately reflect the experience of individual families and single persons with different buying habits.

Though the CPI is often called the "Cost-of-Living Index," it measures only price change, which is just one of several important factors affecting living costs. Area indexes do not measure differences in the level of prices among cities. They only measure the average change in prices for each area since the base period.

Producer Price Indexes measure average changes in prices received in primary markets of the United States by producers of commodities in all stages of processing. The sample used for calculating these indexes contains about 2,800 commodities and about 10,000 quotations per month selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The universe includes all commodities produced or imported for sale in commercial transactions in primary markets in the United States.

Producer Price Indexes can be organized by stage of processing or by commodity. The stage of processing structure organizes products by degree of fabrication (that is, finished goods, intermediate or semifinished goods, and crude materials). The commodity structure organizes products by similarity of end-use or material composition.

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States, from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire. Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

In calculating Producer Price Indexes, price changes for the various commodities are averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1972. The detailed data are aggregated to obtain indexes for stage of processing groupings, commodity groupings, durability of product groupings, and a number of special composite groupings.

Price indexes for the output of selected SIC industries measure average price changes in commodities produced by particular industries, as defined in the *Standard Industrial Classification Manual 1972* (Washington, U.S. Office of Management and Budget, 1972). These indexes are derived from several price series, combined to match the economic activity of the specified industry and weighted by the value of shipments in the industry. They use data from comprehensive industrial censuses conducted by the U.S. Bureau of the Census and the U.S. Department of Agriculture.

Notes on the data

Beginning with the May 1978 issue of the *Review*, regional CPI's cross classified by population size, were introduced. These indexes will enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes will be published bimonthly. (See table 21.)

For further details about the new and the revised indexes and a comparison of various aspects of these indexes with the old unrevised CPI, see *Facts About the Revised Consumer Price Index*, a pamphlet in the Consumer Price Index Revision 1978 series. See also *The Consumer Price Index: Concepts and Content Over the Years*, Report 517, revised edition (Bureau of Labor Statistics, May 1978).

For interarea comparisons of living costs at three hypothetical standards of living, see the family budget data published in the *Handbook of Labor Statistics, 1977*, Bulletin 1966 (Bureau of Labor Statistics, 1977), tables 122–133. Additional data and analysis on price changes are provided in the *CPI Detailed Report* and *Producer Prices and Price Indexes*, both monthly publications of the Bureau.

As of January 1976, the Wholesale Price Index (as it was then called) incorporated a revised weighting structure reflecting 1972 values of shipments. From January 1967 through December 1975, 1963 values of shipments were used as weights.

For a discussion of the general method of computing consumer, producer, and industry price indexes, see *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976), chapters 13–15. See also John F. Early, "Improving the measurement of producer price change," *Monthly Labor Review*, April 1978, pp. 7–15. For industry prices, see also Bennett R. Moss, "Industry and Sector Price Indexes," *Monthly Labor Review*, August 1965, pp. 974–82.

19. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967–81

[1967 = 100]

Year	All items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	116.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.2	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	6.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	267.2	11.3	203.7	8.5	213.6	8.8
1981	272.3	10.2	267.8	7.7	293.2	11.4	186.6	5.2	281.3	12.3	295.1	10.4	219.0	7.5	233.3	9.2

20. Consumer Price Index for All Urban Consumers and revised CPI for Urban Wage Earners and Clerical Workers, U.S. city average—general summary and groups, subgroups, and selected items

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981		1982					1981		1982				
	May	Dec.	Jan.	Feb.	Mar.	Apr.	May	May	Dec.	Jan.	Feb.	Mar.	Apr.	May
All items	269.0	281.5	282.5	283.4	283.1	284.3	287.1	269.1	281.1	282.1	282.9	282.5	283.7	286.5
Food and beverages	265.4	270.5	273.6	275.8	275.6	276.5	278.1	265.9	270.8	273.9	276.0	275.9	276.8	278.4
Housing	288.5	305.2	306.1	307.3	306.7	309.4	313.8	288.1	304.7	305.6	306.7	306.2	309.2	313.7
Apparel and upkeep	186.4	190.5	187.3	188.0	191.1	191.9	191.5	186.2	189.4	186.5	187.3	190.5	191.2	190.6
Transportation	277.8	289.8	289.9	288.0	285.1	282.9	285.6	278.9	291.5	291.6	289.6	286.6	284.3	287.1
Medical care	289.0	310.2	313.4	316.2	318.8	321.7	323.8	290.8	309.1	312.0	314.9	317.4	320.2	322.3
Entertainment	220.3	227.3	229.2	231.2	232.8	233.9	234.4	217.7	224.4	226.1	228.1	229.5	230.5	231.1
Other goods and services	232.2	246.7	248.4	250.3	252.2	253.8	255.0	230.4	243.5	245.0	247.1	249.3	250.9	252.4
Commodities	251.9	258.4	258.8	259.5	258.8	258.9	261.5	252.4	258.8	259.3	259.9	259.1	259.2	261.7
Commodities less food and beverages	241.7	248.7	248.0	248.1	247.1	247.0	249.8	242.3	249.3	248.7	248.6	247.5	247.2	250.1
Nondurables less food and beverages	263.8	266.7	265.6	265.3	263.4	259.7	261.0	266.6	268.9	267.8	267.5	265.3	261.3	262.6
Durables	223.9	233.7	233.4	233.7	233.5	235.8	239.8	222.4	232.7	232.4	232.5	232.4	234.8	238.9
Services	299.6	321.8	323.9	325.3	325.5	328.4	331.8	300.0	322.4	324.3	325.5	325.8	329.1	332.4
Rent, residential	205.9	216.5	217.8	218.6	219.6	220.1	221.8	205.5	216.0	217.4	218.1	219.1	219.6	221.3
Household services less rent	360.4	390.4	392.4	393.7	392.5	397.3	403.0	363.5	394.8	396.5	397.7	396.6	402.3	408.2
Transportation services	266.6	284.2	286.6	287.6	288.8	290.3	291.3	265.5	283.6	285.9	286.7	287.9	289.2	290.0
Medical care services	311.7	335.7	339.4	342.4	345.1	348.0	350.2	313.6	334.0	337.5	340.6	343.0	345.8	348.0
Other services	235.3	249.5	251.7	253.0	254.0	255.3	255.9	234.5	248.0	250.0	251.3	252.4	253.8	254.4
Special indexes:														
All items less food	267.0	280.8	281.4	282.1	281.7	282.9	286.0	267.2	280.7	281.3	281.7	281.3	282.5	285.6
All items less mortgage interest costs	255.2	264.9	266.1	267.1	267.2	267.9	270.3	255.8	265.2	266.4	267.2	267.3	267.9	270.3
Commodities less food	239.6	246.5	245.9	246.0	245.2	245.0	247.8	240.3	247.2	246.6	246.6	245.6	245.3	248.1
Nondurables less food	258.2	261.1	260.2	260.1	258.4	255.0	256.2	260.9	263.3	262.4	262.2	260.2	256.6	257.8
Nondurables less food and apparel	298.0	300.7	301.0	300.5	296.6	291.4	293.4	300.1	302.5	302.6	302.0	297.8	292.3	294.4
Nondurables	265.8	269.8	270.8	271.7	270.7	269.3	270.7	267.2	270.9	271.9	272.8	271.6	270.1	271.5
Services less rent	317.4	342.0	344.2	345.7	345.7	349.1	352.8	318.2	342.9	345.0	346.3	346.4	350.2	353.8
Services less medical care	296.2	318.1	320.0	321.1	321.1	324.0	327.5	296.4	318.7	320.5	321.6	321.6	324.9	328.3
Domestically produced farm foods	254.7	259.1	262.4	265.1	263.8	264.5	267.1	254.2	258.2	261.4	264.0	262.7	263.5	266.0
Selected beef cuts	270.9	270.7	269.6	271.7	272.0	275.1	281.6	273.8	271.9	271.1	273.1	273.3	276.4	283.1
Energy	411.3	414.6	416.4	413.0	406.1	395.7	402.1	414.9	417.6	419.0	415.4	407.9	396.9	403.1
All items less energy	257.9	271.1	272.1	273.4	273.6	275.7	278.3	257.0	269.9	270.9	272.1	272.3	274.5	277.0
All items less food and energy	253.0	267.9	268.5	269.5	269.8	272.2	274.9	251.9	266.6	267.1	268.0	268.3	270.9	273.6
Commodities less food and energy	215.7	224.2	223.7	224.5	225.3	227.2	229.9	214.6	223.3	222.8	223.6	224.5	226.4	229.1
Energy commodities	455.4	448.0	446.4	440.1	424.5	406.6	410.2	456.0	448.7	447.0	440.7	425.0	406.9	410.5
Services less energy	296.5	318.9	320.5	321.9	321.5	324.5	327.2	297.0	319.5	321.0	322.2	321.8	325.2	327.9
Purchasing power of the consumer dollar, 1967 = $1	$0.372	$0.355	$0.354	$0.353	$0.353	$0.352	$0.348	$0.372	$0.356	$0.354	$0.353	$0.354	$0.352	$0.349

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981		1982					1981		1982				
	May	Dec.	Jan.	Feb.	Mar.	Apr.	May	May	Dec.	Jan.	Feb.	Mar.	Apr.	May
FOOD AND BEVERAGES	265.4	270.5	273.6	275.8	275.6	276.5	278.1	265.9	270.8	273.0	276.0	275.9	276.8	278.4
Food	272.5	277.8	281.0	283.3	283.0	283.9	285.5	272.9	277.9	281.1	283.4	283.1	284.1	285.7
Food at home	267.7	271.7	275.3	278.0	277.1	277.9	279.8	267.2	270.8	274.4	277.0	276.2	277.0	278.8
Cereals and bakery products	270.0	277.7	279.8	280.9	281.3	281.7	283.3	269.4	276.6	278.6	279.8	280.0	280.4	282.0
Cereals and cereal products (12/77 = 100)	146.8	151.5	153.0	154.0	153.9	153.6	154.5	148.4	152.5	153.9	155.0	154.8	154.6	155.4
Flour and prepared flour mixes (12/77 = 100)	138.8	137.8	139.1	139.1	139.2	139.7	141.8	140.3	138.4	139.6	139.6	139.6	140.1	142.1
Cereal (12/77 = 100)	149.8	160.2	163.1	164.8	165.2	165.4	165.7	151.3	162.1	165.1	166.8	167.2	167.4	167.8
Rice, pasta, and cornmeal (12/77 = 100)	149.8	151.7	151.1	152.4	151.2	149.6	150.2	152.0	152.9	152.4	153.6	152.4	150.8	151.5
Bakery products (12/77 = 100)	141.5	145.4	146.4	146.8	147.1	147.5	148.3	140.6	144.3	145.3	145.7	146.0	146.3	147.2
White bread	235.1	241.5	243.3	243.8	242.3	242.8	243.8	233.2	237.4	239.4	240.0	238.3	238.8	240.0
Other breads (12/77 = 100)	139.3	143.4	143.9	143.7	145.1	145.2	146.3	141.7	145.3	145.7	145.5	147.0	147.1	148.2
Fresh biscuits, rolls, and muffins (12/77 = 100)	141.5	145.9	146.5	146.4	148.4	147.6	149.7	139.6	141.9	142.5	142.8	144.6	143.8	146.0
Fresh cakes and cupcakes (12/77 = 100)	142.3	144.9	147.2	147.0	148.0	148.4	149.0	141.2	143.7	145.8	145.8	146.4	146.8	147.4
Cookies (12/77 = 100)	141.8	147.6	148.1	149.2	149.4	150.2	150.5	142.1	148.4	148.9	150.1	150.2	151.2	151.4
Crackers, bread, and cracker products (12/77 = 100)	128.2	134.2	133.4	135.4	135.3	137.3	139.6	128.9	135.6	134.7	136.8	136.5	138.7	141.0
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	142.8	145.4	146.2	147.0	146.3	146.8	147.3	142.5	147.8	148.9	149.3	148.7	149.3	149.9
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	147.0	149.3	151.2	151.5	153.5	153.4	153.6	140.1	143.0	144.7	144.8	146.8	146.5	146.7
Meats, poultry, fish, and eggs	247.0	253.7	253.7	256.8	256.9	258.3	261.0	246.3	253.1	253.3	256.4	256.4	257.8	260.7
Meats, poultry, and fish	253.2	258.4	259.1	261.2	262.1	264.2	268.2	252.4	257.7	258.6	260.7	261.5	263.6	267.7
Meats	252.3	258.7	257.8	260.2	261.2	263.6	269.7	251.7	257.9	257.3	259.7	260.6	262.8	269.0
Beef and veal	270.3	270.5	269.4	271.5	271.7	274.8	281.1	272.5	270.9	270.1	272.2	272.3	275.3	281.9
Ground beef other than canned	264.1	264.5	262.2	265.0	265.8	266.9	269.4	267.8	265.8	263.7	266.3	266.9	267.9	270.7
Chuck roast	280.3	282.2	279.6	285.8	284.3	285.4	287.2	290.9	291.5	288.5	295.0	293.1	294.1	296.2
Round roast	246.8	242.6	241.6	245.3	243.0	244.9	252.4	249.4	245.9	244.7	248.9	245.9	247.9	255.9
Round steak	256.0	254.6	257.5	256.1	258.8	262.8	269.2	253.7	252.2	256.1	254.4	256.4	260.8	267.8
Sirloin steak	271.4	260.1	258.2	257.1	260.6	271.1	282.3	275.3	260.7	258.9	257.8	262.2	272.4	283.8
Other beef and veal (12/77 = 100)	159.2	161.0	160.9	161.4	161.5	163.7	169.0	158.5	159.1	159.3	159.7	159.8	162.1	167.5
Pork	217.3	234.3	234.7	238.9	239.5	241.6	249.9	216.3	233.8	234.4	238.5	238.9	241.0	249.2
Bacon	212.7	237.2	235.5	245.6	249.6	255.9	267.7	215.2	240.5	239.3	249.3	253.3	259.7	271.9
Chops	203.7	212.4	219.2	222.1	216.3	223.4	230.0	201.5	211.0	217.6	220.2	214.7	221.7	228.2
Ham other than canned (12/77 = 100)	97.2	109.1	107.3	107.0	109.2	105.4	111.1	93.8	106.3	104.8	104.7	106.5	102.8	108.3
Sausage	277.7	299.1	297.6	300.0	305.8	305.7	313.3	278.5	300.0	298.8	301.0	306.6	306.3	314.2
Canned ham	230.5	244.3	245.4	246.1	247.6	245.6	249.9	231.4	247.7	249.0	249.9	251.2	248.9	253.2
Other pork (12/77 = 100)	122.7	130.0	129.5	133.8	132.6	135.2	138.9	122.4	129.2	128.8	133.1	131.7	134.5	138.2
Other meats	253.9	260.6	258.1	258.1	262.4	262.8	264.0	250.6	259.7	257.3	257.4	261.7	261.8	263.2
Frankfurters	247.6	261.0	256.7	258.0	260.5	259.5	262.7	247.0	260.0	256.1	257.1	260.0	258.4	261.8
Bologna, liverwurst, and salami (12/77 = 100)	143.0	146.4	145.4	146.1	149.2	150.2	150.7	140.6	146.3	145.4	146.2	149.4	150.3	150.7
Other lunchmeats (12/77 = 100)	126.9	132.6	132.2	131.7	133.7	133.2	134.3	124.8	130.6	130.2	129.7	131.7	131.2	132.3
Lamb and organ meats (12/77 = 100)	145.3	140.7	138.6	137.7	141.0	142.6	141.2	145.9	143.9	141.4	141.0	144.2	145.6	144.4
Poultry	194.7	191.7	194.2	195.7	194.7	193.3	196.0	192.5	189.5	192.4	193.8	192.8	191.5	194.1
Fresh whole chicken	190.3	190.1	193.1	196.3	195.1	194.1	196.8	187.0	187.8	190.9	194.4	192.8	192.0	194.7
Fresh and frozen chicken parts (12/77 = 100)	127.5	128.1	128.5	128.9	127.5	127.6	128.3	126.6	126.3	126.9	127.1	125.9	125.9	126.5
Other poultry (12/77 = 100)	128.3	120.7	123.2	123.2	123.9	121.3	124.3	127.5	119.8	123.0	122.6	123.3	120.8	123.9
Fish and seafood	353.2	359.6	373.3	373.8	376.3	382.0	366.3	349.9	358.6	372.4	373.2	375.5	381.4	365.0
Canned fish and seafood (12/77 = 100)	139.2	140.7	140.6	140.9	141.0	141.5	139.8	137.8	140.2	140.0	140.4	140.5	140.8	139.2
Fresh and frozen fish and seafood (12/77 = 100)	131.8	134.7	143.2	143.2	144.7	147.9	139.4	130.5	134.4	143.0	143.2	144.6	148.0	138.9
Eggs	170.5	198.0	189.4	205.1	195.2	186.9	172.3	171.5	198.8	190.6	206.1	196.3	187.9	173.4
Dairy products	243.8	245.5	245.8	246.5	246.5	247.5	247.0	243.9	244.9	245.2	245.8	245.9	246.8	246.3
Fresh milk and cream (12/77 = 100)	134.9	135.2	135.1	135.5	135.3	135.9	135.7	134.7	134.6	134.6	134.9	134.8	135.3	135.1
Fresh whole milk	220.8	221.2	221.2	221.5	221.7	222.2	222.0	220.4	220.2	220.2	220.5	220.8	221.3	221.1
Other fresh milk and cream (12/77 = 100)	134.7	135.3	135.1	135.8	135.1	136.2	135.7	134.8	134.9	134.7	135.5	134.6	135.7	135.2
Processed dairy products (12/77 = 100)	141.9	143.9	144.4	144.8	144.9	145.6	145.2	142.6	144.2	144.7	145.1	145.3	145.9	145.5
Butter	245.2	248.7	249.3	248.9	250.1	250.1	251.1	247.6	251.3	252.0	251.4	252.7	252.7	253.7
Cheese (12/77 = 100)	140.5	141.0	142.0	142.8	143.3	143.7	144.0	140.6	141.3	142.3	143.1	143.6	144.0	144.3
Ice cream and related products (12/77 = 100)	146.2	150.3	150.8	150.0	149.5	150.9	148.7	147.8	149.4	149.9	149.1	148.9	150.2	147.9
Other dairy products (12/77 = 100)	136.1	139.7	138.4	140.0	139.5	139.9	139.7	136.4	140.5	139.1	140.8	140.3	140.8	140.4
Fruits and vegetables	276.8	276.4	294.7	301.5	293.1	294.0	297.9	274.3	272.6	291.3	297.4	289.1	290.3	293.6
Fresh fruits and vegetables	284.4	274.9	308.0	319.6	302.1	304.1	311.7	281.8	269.4	303.1	313.4	296.1	298.9	305.1
Fresh fruits	276.6	269.6	276.7	291.2	297.8	306.7	318.8	271.5	260.5	267.0	280.1	287.3	295.5	306.9
Apples	235.4	261.2	273.0	279.5	288.7	287.5	298.8	232.7	261.2	272.6	279.9	288.5	287.8	300.1
Bananas	266.3	254.9	253.5	251.0	263.0	268.5	261.6	264.2	252.8	251.1	247.9	261.1	266.1	259.3
Oranges	274.1	280.6	283.1	313.1	316.3	330.8	362.1	261.1	252.8	255.1	281.1	285.9	300.2	328.3
Other fresh fruits (12/77 = 100)	154.9	141.0	145.9	154.5	157.2	163.4	168.2	153.3	136.7	141.0	149.0	151.8	157.6	162.4
Fresh vegetables	291.7	279.8	337.3	346.2	306.1	301.8	305.1	291.1	277.6	335.8	343.5	304.2	302.0	303.7
Potatoes	384.4	286.8	288.8	297.4	301.0	306.1	320.3	378.1	280.0	282.7	291.5	294.8	300.8	313.6
Lettuce	252.5	343.1	514.4	408.9	270.9	355.2	291.6	255.6	342.7	515.8	408.0	271.3	358.6	293.5
Tomatoes	200.2	204.6	245.6	288.5	258.1	220.5	226.5	193.8	207.8	248.8	293.2	261.8	224.9	230.6
Other fresh vegetables (12/77 = 100)	158.6	150.4	174.8	199.1	185.0	166.3	179.3	160.1	149.1	173.9	197.2	184.0	166.7	178.6
Processed fruits and vegetables	270.9	280.6	282.7	284.2	285.8	285.5	285.4	268.4	278.4	280.6	282.0	283.7	283.3	283.3
Processed fruits (12/77 = 100)	142.1	145.0	146.4	147.9	149.0	148.2	148.3	141.6	144.5	146.0	147.4	148.6	147.7	147.9
Frozen fruit and fruit juices (12/77 = 100)	144.2	142.3	143.5	147.8	149.2	147.1	145.7	142.0	141.2	142.8	146.6	148.2	146.1	144.6
Fruit juices other than frozen (12/77 = 100)	145.3	149.5	151.4	151.5	152.4	151.5	152.2	145.1	148.3	150.1	150.3	151.4	150.4	151.0
Canned and dried fruits (12/77 = 100)	136.7	142.6	143.6	144.3	145.3	145.6	146.4	137.4	143.0	144.0	144.8	145.9	146.2	147.0
Processed vegetables (12/77 = 100)	130.2	136.9	137.6	137.7	138.2	138.6	138.5	128.9	135.7	136.5	136.6	137.2	137.5	137.4
Frozen vegetables (12/77 = 100)	129.8	139.1	140.7	141.7	142.0	144.0	143.9	129.6	140.2	141.8	143.1	143.4	145.3	145.2

20. Continued — Consumer Price Index — U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981		1982					1981		1982				
	May	Dec.	Jan.	Feb.	Mar.	Apr.	May	May	Dec.	Jan.	Feb.	Mar.	Apr.	May
FOOD AND BEVERAGES — Continued														
Food — Continued														
Food at home — Continued														
Fruits and vegetables — Continued														
Cut corn and canned beans except lima (12/77 = 100)	131.5	138.9	139.9	140.7	141.2	140.5	140.7	130.1	136.5	137.5	138.3	138.8	137.9	138.5
Other canned and dried vegetables (12/77 = 100)	129.8	134.8	135.0	134.1	134.8	135.0	134.6	128.0	133.2	133.5	132.6	133.3	133.5	133.2
Other foods at home	323.7	325.6	328.7	330.7	331.7	331.6	332.6	324.8	326.4	329.6	331.5	332.6	332.6	333.5
Sugar and sweets	367.1	358.3	361.6	364.2	365.5	365.3	365.7	368.1	358.3	361.6	364.1	365.4	365.2	365.6
Candy and chewing gum (12/77 = 100)	145.1	149.9	150.1	150.0	150.3	150.9	150.0	145.8	149.9	150.0	149.8	150.1	150.8	149.9
Sugar and artificial sweeteners (12/77 = 100)	178.4	153.4	155.6	160.0	161.0	159.9	160.5	179.2	154.6	157.0	161.3	162.4	161.1	161.8
Other sweets (12/77 = 100)	141.4	146.1	147.1	146.9	147.4	147.2	148.9	139.7	144.2	145.2	145.1	145.5	145.3	147.0
Fats and oils (12/77 = 100)	270.7	261.1	261.6	260.5	259.6	260.4	260.6	270.9	261.0	261.5	260.6	259.7	260.4	260.6
Margarine	256.1	255.7	257.8	256.7	258.7	259.6	259.7	256.7	254.9	257.2	256.1	256.1	259.1	259.3
Nondairy substitutes and peanut butter (12/77 = 100)	182.7	160.1	157.7	157.8	158.1	157.3	156.0	181.6	158.5	158.0	156.3	154.4	155.6	154.2
Other fats, oils, and salad dressings (12/77 = 100)	130.4	129.7	130.5	129.8	129.5	129.0	129.6	130.4	130.1	131.0	130.2	130.0	129.5	130.2
Nonalcoholic beverages	412.3	412.5	418.7	423.4	424.8	424.1	425.6	414.6	414.2	420.5	425.0	426.6	426.0	427.3
Cola drinks, excluding diet cola	295.7	298.1	302.4	304.6	306.6	304.9	306.1	293.7	295.7	300.0	302.0	303.8	302.4	303.6
Carbonated drinks, including diet cola (12/77 = 100)	140.6	139.3	141.9	143.8	143.4	143.4	144.3	139.4	137.2	139.7	141.7	141.4	141.5	142.3
Roasted coffee	354.4	344.4	353.3	364.4	366.6	369.6	369.3	350.5	340.1	348.8	359.9	362.2	365.0	364.3
Freeze dried and instant coffee	339.1	332.0	336.9	342.8	343.6	343.4	344.3	340.2	331.6	336.5	342.5	343.4	343.0	343.9
Other noncarbonated drinks (12/77 = 100)	134.0	137.0	138.0	138.4	138.9	138.7	138.9	133.9	137.1	138.2	138.6	139.1	138.9	139.1
Other prepared foods	252.9	262.8	264.6	265.3	266.5	266.6	267.5	254.7	264.4	266.3	266.9	268.1	269.3	269.3
Canned and packaged soup (12/77 = 100)	131.5	133.7	134.3	135.9	135.6	135.7	135.7	132.1	135.7	136.4	137.9	137.8	137.8	137.7
Frozen prepared foods (12/77 = 100)	141.6	145.9	147.8	146.2	147.0	147.2	147.8	139.6	145.3	147.4	145.6	146.5	146.7	147.3
Snacks (12/77 = 100)	145.9	152.2	152.6	153.4	153.4	152.9	153.5	149.1	154.2	154.6	155.2	155.4	156.0	156.6
Seasonings, olives, pickles, and relish (12/77 = 100)	140.0	148.8	149.7	151.3	153.2	153.6	152.8	139.3	147.7	148.6	150.3	152.2	152.7	151.9
Other condiments (12/77 = 100)	141.1	144.6	146.4	146.9	148.2	148.7	150.2	143.6	146.2	148.0	148.4	149.9	150.4	151.9
Miscellaneous prepared foods (12/77 = 100)	138.6	145.8	146.9	147.0	147.7	147.6	148.5	139.6	145.8	147.0	147.1	147.9	147.7	148.7
Other canned and packaged prepared foods (12/77 = 100)	136.6	142.5	142.5	143.0	143.2	143.3	143.5	137.2	143.9	143.9	144.5	144.5	144.6	144.9
Food away from home	289.3	297.7	298.8	301.2	302.4	303.6	304.8	291.9	300.7	302.8	304.2	305.4	306.7	307.8
Lunch (12/77 = 100)	141.0	144.6	146.1	146.6	147.0	147.5	148.2	141.8	146.3	147.7	148.2	148.6	149.1	149.8
Dinner (12/77 = 100)	139.9	144.0	144.8	145.2	145.7	146.3	147.1	141.7	145.6	146.4	146.8	147.3	147.9	148.8
Other meals and snacks (12/77 = 100)	139.9	144.7	145.4	146.9	147.9	148.6	148.5	141.1	145.4	146.2	147.6	148.7	149.3	149.2
Alcoholic beverages	199.1	202.7	204.0	205.6	206.6	207.4	208.0	201.2	204.9	206.0	207.6	208.8	209.5	210.1
Alcoholic beverages at home (12/77 = 100)	129.3	131.4	132.2	133.3	134.0	134.6	135.0	131.1	132.8	133.4	134.6	135.4	136.0	136.2
Beer and ale	201.4	204.1	205.0	207.4	209.2	210.5	210.3	201.8	203.5	204.3	206.5	208.3	209.6	209.4
Whiskey	142.5	145.0	145.9	146.8	147.0	147.2	148.2	143.2	145.9	146.8	147.7	147.8	148.0	149.0
Wine	223.9	230.0	232.2	234.2	235.3	236.4	236.9	234.3	238.0	239.8	241.6	243.3	244.4	244.9
Other alcoholic beverages (12/77 = 100)	115.5	117.3	117.5	117.8	118.1	118.2	119.0	114.6	117.4	117.5	117.8	118.0	118.0	118.9
Alcoholic beverages away from home (12/77 = 100)	132.6	135.8	137.0	137.6	138.2	138.4	139.1	132.0	137.3	138.6	139.1	139.7	139.9	140.6
HOUSING	288.5	305.2	306.1	307.3	306.7	309.4	313.8	289.1	304.7	305.6	306.7	306.2	309.2	313.7
Shelter	308.4	328.0	328.3	329.5	327.6	331.4	336.7	300.4	329.3	329.4	330.3	328.5	332.8	338.3
Rent, residential	205.9	216.5	217.8	218.6	219.6	220.1	221.8	205.5	216.0	217.4	218.1	219.1	219.6	221.3
Other rental costs	286.4	306.3	313.6	316.9	320.1	323.7	323.6	286.1	305.3	312.3	315.6	318.9	322.8	322.6
Lodging while out of town	307.2	319.9	331.1	335.9	340.9	346.6	346.6	305.5	318.0	328.4	333.0	337.9	343.9	344.0
Tenants' insurance (12/77 = 100)	131.9	140.7	141.8	143.5	144.1	144.9	144.4	132.3	140.6	142.0	143.6	144.3	144.7	143.8
Homeownership	345.0	367.8	367.5	368.7	365.7	370.6	377.4	347.1	370.4	369.9	370.8	367.9	373.6	380.5
Home purchase	263.0	270.5	269.3	270.4	269.2	272.3	279.3	262.2	268.7	267.4	268.3	267.1	270.5	278.1
Financing, taxes, and insurance	458.3	506.3	506.0	507.2	500.9	508.4	516.2	464.3	512.9	512.2	513.2	507.0	516.0	523.8
Property insurance	383.7	384.1	383.0	383.7	384.1	383.6	386.7	387.1	396.5	395.6	396.0	395.5	396.0	399.2
Property taxes	199.8	210.7	212.9	215.1	216.6	217.2	218.3	201.7	212.5	214.5	217.2	218.5	219.1	220.2
Contracted mortgage interest cost	596.9	666.6	665.2	666.1	655.5	667.1	678.5	598.6	668.1	666.3	668.6	656.4	670.2	681.4
Mortgage interest rates	224.0	243.9	244.4	243.9	240.7	242.1	240.2	224.9	245.3	245.7	245.4	242.3	244.4	242.1
Maintenance and repairs	312.9	324.1	326.7	328.2	327.2	331.6	334.5	307.3	321.0	323.3	324.6	323.7	328.3	330.9
Maintenance and repair services	341.2	355.4	358.2	359.4	357.8	363.6	367.0	337.6	356.5	359.2	360.1	358.6	365.0	368.0
Maintenance and repair commodities	246.3	250.3	252.5	254.6	255.0	256.2	257.8	241.1	244.9	246.4	248.2	248.6	249.7	251.3
Paint and wallpaper, supplies, tools, and equipment (12/77 = 100)	143.9	147.3	149.4	150.9	151.8	153.1	154.2	137.7	140.5	142.3	143.7	144.7	145.8	147.0
Lumber, awnings, glass, and masonry (12/77 = 100)	125.1	124.3	124.6	124.6	123.9	124.5	124.5	123.7	121.6	121.9	121.7	121.2	121.9	121.9
Plumbing, electrical, heating, and cooling supplies (12/77 = 100)	130.7	131.5	131.9	133.8	133.4	133.4	135.1	128.1	131.6	131.8	133.4	133.1	133.1	134.9
Miscellaneous supplies and equipment (12/77 = 100)	127.6	132.5	133.6	134.8	135.1	135.6	136.3	130.8	134.7	135.7	136.9	137.1	137.4	138.2
Fuel and other utilities	314.9	331.8	336.2	337.1	339.3	339.2	345.4	315.7	332.7	337.0	337.9	340.2	340.3	346.5
Fuels	403.3	420.0	426.9	427.6	430.5	429.2	438.0	402.5	419.6	426.2	426.8	429.9	427.8	437.4
Fuel oil, coal, and bottled gas	685.8	682.5	686.0	683.1	664.0	641.3	644.6	688.6	685.5	688.9	686.0	666.7	644.0	647.7
Fuel oil	720.6	713.5	716.8	713.8	692.3	668.2	670.6	723.1	716.0	719.3	716.3	694.4	669.4	673.3
Other fuels (6/78 = 100)	163.6	169.4	170.9	170.0	169.0	166.4	165.7	164.7	170.8	172.1	171.4	169.5	167.9	167.1
Gas (piped) and electricity	339.6	359.9	367.4	368.7	375.9	377.8	388.6	338.1	358.8	366.0	367.3	374.8	376.0	387.4
Electricity	281.9	300.3	306.6	306.8	313.3	312.8	314.9	281.2	299.3	305.3	305.5	312.3	311.8	314.4
Utility (piped) gas	416.5	438.2	447.2	450.8	458.6	465.3	493.4	413.0	436.4	445.2	448.7	456.6	463.6	489.7

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981		1982					1981		1982				
	May	Dec.	Jan.	Feb.	Mar.	Apr.	May	May	Dec.	Jan.	Feb.	Mar.	Apr.	May
HOUSING—Continued														
Fuel and other utilities—Continued														
Other utilities and public services	178.2	191.9	192.7	193.9	195.0	197.7	198.9	178.6	192.2	193.1	194.3	195.4	198.2	199.5
Telephone services	144.0	156.8	157.2	157.9	158.5	160.8	161.6	144.1	156.9	157.3	158.0	158.6	161.0	161.9
Local charges (12/77 = 100)	115.5	124.4	124.0	125.3	125.6	127.9	128.9	115.7	124.6	124.2	125.4	125.7	128.1	129.2
Interstate toll calls (12/77 = 100)	101.8	116.7	116.8	116.6	117.7	119.9	120.0	101.9	116.8	116.9	116.7	117.8	120.2	120.4
Intrastate toll calls (12/77 = 100)	101.7	107.1	108.2	108.1	109.0	108.9	109.3	101.5	106.9	109.0	108.8	108.7	108.7	109.0
Water and sewerage maintenance	282.3	307.4	309.8	313.3	316.9	320.7	323.5	284.7	309.4	312.2	315.7	319.7	323.6	326.7
Household furnishings and operations	220.1	227.7	228.4	230.2	231.6	232.6	233.4	216.8	224.2	224.9	226.7	228.0	229.1	230.0
Housefurnishings	184.2	189.2	189.8	191.4	192.7	193.8	194.7	182.1	187.1	187.7	189.3	190.4	191.7	192.5
Textile housefurnishings	198.3	211.2	210.1	216.0	217.7	218.7	220.9	202.3	213.9	212.5	218.5	219.9	221.4	223.9
Household linens (12/77 = 100)	122.3	128.8	127.3	131.0	134.7	135.8	135.4	124.7	129.9	128.6	132.1	135.6	137.0	136.8
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	125.0	134.7	134.8	138.5	136.7	136.9	140.1	127.7	137.4	137.0	141.0	138.7	138.1	142.8
Furniture and bedding	204.2	209.7	208.5	208.4	212.1	214.7	215.1	200.6	206.0	205.9	205.5	208.2	211.0	211.3
Bedroom furniture (12/77 = 100)	133.4	138.6	130.7	140.5	140.8	142.3	144.5	129.2	135.2	136.5	137.1	137.2	138.9	140.7
Sofas (12/77 = 100)	117.0	119.4	117.3	116.4	118.0	119.3	119.1	115.8	119.5	117.6	116.5	118.2	119.6	119.4
Living room chairs and tables (12/77 = 100)	117.5	119.0	118.9	118.6	121.6	123.2	122.8	118.1	119.1	119.0	118.8	121.8	123.3	122.9
Other furniture (12/77 = 100)	134.7	138.4	138.5	138.1	140.5	142.3	141.6	131.2	134.0	133.9	133.4	135.8	137.9	137.0
Appliances including TV and sound equipment	145.5	147.9	148.8	149.9	150.1	150.6	151.4	144.4	147.5	148.5	149.6	149.7	150.3	151.1
Television and sound equipment (12/77 = 100)	108.3	108.9	108.8	109.2	109.1	108.7	108.8	106.9	108.0	107.9	108.4	108.2	107.7	107.9
Television	105.4	104.7	104.4	104.5	104.7	104.2	104.3	104.4	103.3	103.1	103.3	103.5	103.0	103.0
Sound equipment (12/77 = 100)	112.1	113.7	113.8	114.5	114.0	113.7	113.9	110.1	112.9	113.0	113.8	113.2	112.8	113.0
Household appliances	171.3	175.9	178.0	179.7	180.3	182.1	183.6	170.6	176.0	178.1	179.9	180.4	182.3	183.8
Refrigerators and home freezers	170.9	179.9	180.8	182.6	183.7	184.8	186.2	175.8	185.3	186.1	187.9	189.3	190.6	191.8
Laundry equipment (12/77 = 100)	126.2	130.5	132.2	133.5	133.3	136.4	136.6	125.3	130.3	132.4	133.8	133.5	136.6	136.8
Other household appliances (12/77 = 100)	117.6	118.7	120.6	121.6	122.2	122.9	124.3	115.2	116.8	118.5	119.7	120.0	120.7	122.3
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	117.2	117.9	119.4	121.0	121.9	122.3	123.7	115.1	116.2	117.4	118.9	119.3	119.7	121.4
Office machines, small electric appliances, and air conditioners (12/77 = 100)	118.0	119.6	121.9	122.4	122.5	123.5	124.9	115.3	117.3	119.7	120.5	120.7	121.8	123.3
Other household equipment (12/77 = 100)	130.7	134.0	134.9	136.7	137.3	137.8	138.3	129.0	131.9	132.9	134.7	135.3	135.6	136.0
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	132.2	135.9	136.3	139.1	140.9	140.3	141.4	125.1	128.3	128.6	131.0	133.3	132.9	133.9
Clocks, lamps, and decor items (12/77 = 100)	124.4	128.4	128.6	129.8	129.0	130.2	131.4	120.9	124.7	124.8	126.0	125.4	126.5	127.4
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	138.8	141.0	142.3	143.3	143.1	145.0	144.4	136.0	137.1	138.2	139.5	139.0	140.6	139.8
Lawn equipment, power tools, and other hardware (12/77 = 100)	122.5	126.3	127.8	130.3	132.1	130.8	132.1	127.0	131.5	133.2	135.5	137.3	136.0	137.4
Housekeeping supplies	269.0	277.4	279.1	282.4	284.2	284.9	285.5	266.5	274.1	275.7	278.8	280.4	281.2	281.8
Soaps and detergents	262.6	271.6	275.5	278.0	279.5	280.0	278.8	260.2	268.0	272.0	274.4	275.7	276.3	275.2
Other laundry and cleaning products (12/77 = 100)	132.8	138.8	139.6	141.0	142.1	142.7	143.3	131.5	137.5	138.4	139.8	140.9	141.6	142.3
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	137.8	144.5	145.1	145.7	145.7	146.4	146.0	137.9	144.4	145.1	145.6	145.4	146.2	145.6
Stationery, stationery supplies, and gift wrap (12/77 = 100)	125.1	128.8	128.8	130.4	130.7	131.4	132.0	126.8	131.6	131.7	133.4	133.8	134.6	135.3
Miscellaneous household products (12/77 = 100)	138.4	145.4	146.2	146.9	147.5	147.5	149.3	135.0	140.4	141.2	141.8	142.4	142.4	144.1
Lawn and garden supplies (12/77 = 100)	140.6	136.7	137.1	141.8	144.7	144.7	144.8	132.4	129.4	129.2	134.1	136.7	136.8	136.6
Housekeeping services	291.6	306.9	307.4	308.1	309.9	310.4	311.3	289.9	305.4	305.9	306.8	308.2	309.2	310.2
Postage	308.0	337.5	337.5	337.5	337.5	337.5	337.5	308.1	337.5	337.5	337.5	337.5	337.5	337.5
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	141.6	147.8	148.4	149.4	150.8	152.1	153.1	140.7	147.6	148.0	149.1	150.6	152.2	153.3
Appliance and furniture repair (12/77 = 100)	125.9	133.0	133.6	134.2	135.0	135.6	136.6	124.6	131.6	132.2	132.8	133.5	134.1	135.1
APPAREL AND UPKEEP	186.4	190.5	187.3	188.0	191.1	191.9	191.5	186.2	189.4	186.5	187.3	190.5	191.2	190.6
Apparel commodities	177.2	180.7	177.0	177.6	180.8	181.4	180.9	177.6	180.1	176.7	177.4	180.8	181.3	180.5
Apparel commodities less footwear	173.3	176.6	172.8	173.4	176.8	177.4	176.7	173.8	175.6	172.2	173.0	176.6	177.1	176.0
Men's and boys'	176.8	181.6	178.7	179.3	181.7	183.1	183.8	177.3	181.7	178.6	179.4	181.6	182.9	183.7
Men's (12/77 = 100)	111.2	114.5	112.9	113.0	114.5	115.5	115.9	111.8	115.0	113.3	113.5	114.7	115.7	116.2
Suits, sport coats, and jackets (12/77 = 100)	104.7	106.4	104.3	104.8	107.2	107.6	108.1	99.3	99.5	97.8	98.2	100.4	101.1	101.4
Coats and jackets (12/77 = 100)	97.9	101.4	96.4	95.8	98.1	99.1	99.9	100.5	104.1	97.6	97.2	99.7	100.7	101.5
Furnishings and special clothing (12/77 = 100)	129.2	134.2	133.6	134.7	136.8	138.2	138.7	123.9	130.6	129.8	131.1	133.1	134.5	135.3
Shirts (12/77 = 100)	118.3	122.7	120.7	119.3	119.9	121.3	121.2	120.3	125.3	123.3	121.8	122.3	123.4	123.1
Dungarees, jeans, and trousers (12/77 = 100)	105.5	108.5	108.2	108.6	108.6	108.7	110.3	112.2	114.1	113.6	114.1	114.2	115.1	115.6
Boys' (12/77 = 100)	115.1	117.2	114.6	116.0	117.8	118.3	118.8	114.2	115.4	112.9	114.3	116.1	116.5	117.1
Coats, jackets, sweaters, and shirts (12/77 = 100)	108.8	109.9	104.7	105.9	109.4	111.2	111.5	111.8	110.9	105.3	106.3	109.7	111.5	112.0
Furnishings (12/77 = 100)	121.4	127.5	127.3	128.2	128.7	130.3	131.2	117.4	123.5	123.3	124.2	124.7	126.0	127.2
Suits, trousers, sport coats, and jackets (12/77 = 100)	117.5	118.8	117.2	119.1	120.1	119.0	119.6	114.8	115.9	114.7	116.7	117.8	116.8	117.3
Women's and girls'	157.2	158.6	154.3	154.7	160.3	160.9	158.1	160.0	160.7	156.4	157.1	163.0	163.4	160.8
Women's (12/77 = 100;	103.9	105.8	102.3	102.9	106.8	107.1	105.7	106.2	107.1	103.9	104.8	109.0	109.1	107.1
Coats and jackets	152.8	151.8	158.4	156.4	162.0	163.4	158.3	155.8	167.3	161.6	163.1	173.1	172.9	165.7
Dresses	164.8	164.0	153.1	152.8	163.1	166.6	162.0	150.7	149.5	140.7	140.9	148.1	151.1	147.1
Separates and sportswear (12/77 = 100)	98.0	100.7	96.7	96.3	100.3	100.1	101.2	101.5	101.3	97.3	96.8	101.2	101.0	101.9
Underwear, nightwear, and hosiery (12/77 = 100)	119.7	124.8	124.0	126.2	127.1	127.4	128.1	119.5	124.5	123.7	126.0	126.9	127.3	127.9
Suits (12/77 = 100)	90.7	87.7	84.2	87.0	92.7	89.4	83.4	106.9	106.0	104.0	105.6	114.1	111.0	100.6
Girls' (12/77 = 100)	107.9	107.7	104.4	102.7	105.6	[c]106.7	106.3	107.1	106.0	104.2	103.1	106.0	106.9	106.2
Coats, jackets, dresses, and suits (12/77 = 100)	104.1	98.4	93.4	92.6	98.2	98.8	96.9	98.8	98.1	91.2	91.5	97.2	97.6	95.0
Separates and sportswear (12/77 = 100)	106.9	108.9	106.3	103.4	104.6	105.4	105.9	108.6	107.5	108.2	106.0	106.9	107.6	108.0
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	116.1	120.7	119.2	118.0	119.6	122.0	122.4	115.9	118.5	118.2	117.0	118.7	121.0	121.5

20. Continued — Consumer Price Index — U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981		1982					1981		1982				
	May	Dec.	Jan.	Feb.	Mar.	Apr.	May	May	Dec.	Jan.	Feb.	Mar.	Apr.	May
APPAREL AND UPKEEP — Continued														
Apparel commodities — Continued														
Apparel commodities less footwear — Continued														
Infants' and toddlers'	256.9	259.4	258.6	262.2	264.7	267.0	269.0	268.9	270.6	270.1	271.4	275.4	278.2	279.3
Other apparel commodities	212.1	214.5	212.9	214.3	212.7	210.8	209.7	204.1	203.2	201.4	202.8	201.6	199.5	198.8
Sewing materials and notions (12/77 = 100)	114.3	118.3	116.2	117.6	118.1	118.5	119.3	113.4	116.2	114.3	115.9	116.5	116.9	117.7
Jewelry and luggage (12/77 = 100)	146.8	147.4	146.7	147.4	145.7	143.8	142.5	140.5	138.4	137.5	138.1	136.7	134.5	133.5
Footwear	201.0	205.7	202.8	202.8	204.9	205.6	206.5	200.0	205.9	203.1	203.3	205.2	206.1	206.9
Men's (12/77 = 100)	127.8	130.7	130.3	130.7	132.5	132.3	132.4	128.7	132.5	132.2	132.6	134.5	134.4	134.5
Boys' and girls' (12/77 = 100)	129.3	132.1	130.1	129.5	129.2	130.4	131.5	127.7	134.8	132.5	132.3	132.1	133.6	134.6
Women's (12/77 = 100)	122.4	125.4	122.6	122.7	124.7	125.1	125.8	120.5	121.6	118.9	119.0	120.8	121.1	121.6
Apparel services	256.4	266.4	267.6	269.4	271.3	273.4	274.7	254.2	264.4	265.5	267.2	269.0	271.0	272.3
Laundry and drycleaning other than coin operated (12/77 = 100)	152.2	159.2	160.0	161.4	162.4	163.5	164.4	151.5	157.8	158.5	158.9	160.9	162.0	162.8
Other apparel services (12/77 = 100)	135.6	138.1	139.4	139.8	141.1	142.5	142.9	134.5	138.6	139.9	140.3	141.5	142.7	143.1
TRANSPORTATION	277.8	289.8	289.9	288.0	285.1	282.9	285.6	278.9	291.5	291.6	289.6	286.6	284.3	287.1
Private	276.0	286.5	286.6	284.5	281.3	278.8	281.5	277.7	289.0	289.0	286.9	283.7	281.2	284.0
New cars	190.9	197.0	197.4	195.5	194.4	196.0	197.5	191.2	196.9	197.3	195.3	194.2	195.9	197.3
Used cars	245.2	281.9	280.5	279.7	280.9	285.1	291.4	245.2	281.9	280.5	279.7	280.9	285.2	291.4
Gasoline	416.5	408.4	406.0	399.1	383.9	366.7	370.4	417.7	409.8	407.5	400.6	385.4	c367.9	371.7
Automobile maintenance and repair	290.8	304.1	305.5	307.7	310.2	311.9	313.6	291.3	304.8	306.2	308.4	311.1	312.8	314.4
Body work (12/77 = 100)	141.5	150.6	151.5	153.7	154.5	155.0	155.7	141.3	148.9	149.8	152.1	152.7	153.3	154.0
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	139.7	144.7	145.7	146.5	148.7	149.5	150.8	141.2	148.5	149.5	150.2	152.8	153.7	154.9
Maintenance and servicing (12/77 = 100)	136.5	141.5	142.0	142.7	143.9	144.5	145.0	136.4	141.0	141.5	142.3	143.4	144.0	144.4
Power plant repair (12/77 = 100)	138.6	145.6	146.2	147.3	148.0	149.1	150.1	137.7	145.1	145.7	146.8	147.5	148.6	149.6
Other private transportation	238.9	250.6	253.3	253.4	254.5	255.1	255.7	241.9	254.2	256.9	256.8	257.8	258.2	258.8
Other private transportation commodities	208.6	214.5	215.5	214.8	215.6	214.9	216.9	211.7	216.9	218.0	217.3	218.2	c217.3	219.4
Motor oil, coolant, and other products (12/77 = 100)	143.1	148.7	148.2	149.3	150.2	150.7	149.9	141.4	147.2	146.9	147.8	148.7	149.2	148.4
Automobile parts and equipment (12/77 = 100)	133.6	137.2	138.1	137.4	137.9	137.2	138.8	136.1	139.2	140.0	139.4	139.9	139.2	140.9
Tires	186.4	191.5	192.8	191.3	191.7	190.1	192.3	191.1	195.2	196.5	195.1	195.5	193.7	196.0
Other parts and equipment (12/77 = 100)	130.4	133.9	134.3	134.6	135.7	136.2	138.0	130.7	133.9	134.5	134.9	135.9	136.6	138.4
Other private transportation services	249.2	262.6	265.8	266.1	267.2	268.2	268.4	252.4	266.6	269.7	269.8	270.8	271.6	271.8
Automobile insurance	256.8	266.0	266.8	268.1	269.8	270.4	271.6	256.3	265.6	266.6	268.0	269.6	270.2	271.3
Automobile finance charges (12/77 = 100)	172.9	190.5	190.9	188.9	188.9	187.2	186.3	172.5	189.9	190.3	188.3	188.2	186.7	185.9
Automobile rental, registration, and other fees (12/77 = 100)	117.7	120.8	127.6	128.9	129.7	133.3	133.3	118.1	121.4	128.4	129.5	130.1	133.7	133.7
State registration	147.5	149.0	166.9	167.1	168.5	174.2	174.2	147.7	149.0	166.2	166.5	167.8	173.8	173.8
Drivers' licenses (12/77 = 100)	105.5	111.9	117.3	121.7	122.9	123.0	127.7	105.2	111.9	117.1	121.7	123.0	123.0	127.9
Vehicle inspection (12/77 = 100)	125.8	128.3	129.2	129.3	129.3	129.0	126.7	126.5	129.0	130.5	130.6	130.6	130.4	128.3
Other vehicle-related fees (12/77 = 100)	136.3	141.6	142.5	144.8	145.3	149.5	149.2	142.8	149.2	150.4	152.4	152.5	156.4	156.2
Public	297.7	333.8	334.9	336.8	336.7	339.3	342.1	298.2	328.6	329.4	331.0	331.0	333.3	335.1
Airline fare	348.8	374.7	375.5	379.3	379.0	382.7	388.9	346.7	372.8	372.7	376.3	376.3	379.8	385.2
Intercity bus fare	333.4	365.2	367.3	365.7	365.6	367.0	366.0	333.0	366.1	368.9	367.4	367.0	368.7	367.5
Intracity mass transit	251.9	304.6	305.9	306.7	306.6	308.1	308.3	249.9	303.9	305.1	305.8	305.7	307.2	307.1
Taxi fare	280.4	294.7	296.3	296.7	297.2	297.6	297.6	287.9	304.1	305.6	306.1	306.6	307.3	307.2
Intercity train fare	296.7	319.2	318.1	314.0	314.1	332.1	337.9	298.5	318.9	317.9	314.5	314.5	332.1	337.9
MEDICAL CARE	289.0	310.2	313.4	316.2	318.8	321.7	323.8	290.8	309.1	312.0	314.9	317.4	320.2	322.3
Medical care commodities	184.7	194.9	195.9	197.7	200.0	202.4	204.1	185.9	195.4	196.4	198.3	200.6	203.0	204.8
Prescription drugs	170.4	181.0	181.9	183.7	186.1	188.8	190.4	171.6	181.9	182.8	184.7	187.0	189.7	191.4
Anti-infective drugs (12/77 = 100)	130.3	137.8	138.2	138.4	139.3	140.9	142.5	132.7	139.7	140.1	140.4	141.1	142.5	144.1
Tranquilizers and sedatives (12/77 = 100)	136.0	144.8	145.4	146.8	148.6	152.0	153.8	135.2	144.4	144.9	146.5	148.3	151.8	153.8
Circulatories and diuretics (12/77 = 100)	124.9	131.9	132.2	134.0	135.7	136.7	137.0	126.1	131.8	132.1	134.0	135.6	136.6	136.8
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	154.6	164.6	165.6	168.4	170.8	173.3	175.4	154.5	165.9	166.9	169.7	172.0	174.6	176.9
Pain and symptom control drugs (12/77 = 100)	136.5	145.9	147.3	148.8	150.8	153.1	153.7	138.2	147.3	148.7	150.3	152.3	154.6	155.2
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	130.2	138.1	138.8	139.9	142.7	144.7	145.9	131.2	138.0	138.8	139.9	142.7	144.8	146.0
Nonprescription drugs and medical supplies (12/77 = 100)	132.6	139.2	139.9	141.1	142.5	143.9	145.1	133.6	139.7	140.4	141.6	143.2	144.6	145.9
Eyeglasses (12/77 = 100)	125.3	128.4	128.3	128.9	129.5	130.1	130.9	124.1	127.1	127.1	127.6	128.1	128.7	129.7
Internal and respiratory over-the-counter drugs	209.1	221.6	222.8	225.1	228.1	231.1	233.4	211.0	222.8	223.9	226.4	229.6	232.5	235.0
Nonprescription medical equipment and supplies (12/77 = 100)	129.6	134.6	135.9	137.1	138.1	138.9	139.5	130.5	135.2	136.6	137.7	138.8	139.7	140.4
Medical care services	311.7	335.7	339.4	342.4	345.1	348.0	350.2	313.6	334.0	337.5	340.6	343.0	345.8	348.0
Professional services	273.8	290.0	292.0	294.2	295.8	297.8	299.2	278.0	290.3	292.2	294.3	295.9	c297.9	299.3
Physicians' services	295.5	313.0	315.5	318.8	320.3	322.2	324.0	300.3	316.0	318.6	321.7	323.2	325.2	327.0
Dental services	257.7	273.9	275.8	276.8	278.6	281.1	282.1	263.3	272.3	274.1	274.9	276.6	279.2	280.3
Other professional services (12/77 = 100)	133.7	140.3	140.3	141.5	142.4	142.5	143.4	132.1	137.2	137.2	138.5	139.4	139.4	140.2
Other medical care services	357.6	380.9	386.8	400.8	404.7	408.7	411.9	357.1	388.1	393.8	398.0	401.6	405.4	408.5
Hospital and other medical services (12/77 = 100)	148.3	162.7	165.6	167.1	168.5	169.8	170.6	147.3	161.1	164.0	165.7	166.9	168.3	169.1
Hospital room	465.1	519.3	529.4	533.8	538.5	542.2	543.8	461.3	512.6	522.0	527.0	531.0	535.2	536.7
Other hospital and medical care services (12/77 = 100)	147.6	158.6	162.2	163.8	165.2	166.4	167.6	146.8	158.4	161.2	163.0	164.2	165.5	166.6

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981		1982					1981		1982				
	May	Dec.	Jan.	Feb.	Mar.	Apr.	May.	May	Dec.	Jan.	Feb.	Mar.	Apr.	May
ENTERTAINMENT	220.3	227.3	229.2	231.2	232.8	233.9	234.4	217.7	224.4	226.1	228.1	229.5	230.5	231.1
Entertainment commodities	225.0	230.6	232.0	234.3	236.6	238.0	238.8	220.4	225.4	226.7	228.9	230.8	232.0	232.8
Reading materials (12/77 = 100)	135.6	139.6	142.9	144.1	146.1	146.8	148.5	135.6	139.1	142.1	143.3	145.3	146.1	147.7
Newspapers	264.1	267.7	270.5	273.1	276.4	280.1	281.6	264.0	267.6	270.1	272.8	276.0	279.7	281.2
Magazines, periodicals, and books (12/77 = 100)	137.1	143.5	149.0	149.9	152.4	151.6	154.4	137.3	143.4	148.8	149.7	152.2	151.4	154.2
Sporting goods and equipment (12/77 = 100)	127.2	130.0	129.5	131.5	132.3	132.9	132.8	120.8	122.4	122.4	123.9	124.3	124.7	124.9
Sport vehicles (12/77 = 100)	129.5	132.1	c(1)	133.9	135.4	136.1	135.4	119.3	120.2	(1)	121.9	122.5	122.8	122.6
Indoor and warm weather sport equipment (12/77 = 100)	117.4	119.9	120.1	119.6	119.9	120.4	121.0	116.4	117.9	118.2	117.7	118.1	118.6	119.2
Bicycles	190.4	193.9	194.8	197.3	197.6	198.9	199.4	191.6	195.2	196.2	198.9	198.9	200.2	200.7
Other sporting goods and equipment (12/77 = 100)	122.4	126.2	125.3	127.0	125.6	126.3	127.6	121.5	126.3	125.2	127.4	126.0	126.5	127.9
Toys, hobbies, and other entertainment (12/77 = 100)	128.8	132.0	132.2	133.2	134.5	135.4	135.5	127.7	130.9	131.2	132.3	133.5	134.3	134.4
Toys, hobbies, and music equipment (12/77 = 100)	127.6	130.1	130.8	131.7	133.4	134.1	134.8	125.0	126.9	127.7	128.6	130.2	130.7	131.4
Photographic supplies and equipment (12/77 = 100)	125.8	125.2	125.2	126.9	128.3	129.8	130.0	126.1	126.3	126.3	127.9	129.5	131.0	131.2
Pet supplies and expenses (12/77 = 100)	133.3	140.2	139.7	140.6	140.8	141.9	141.0	133.6	140.9	140.5	141.6	141.7	142.7	141.8
Entertainment services	214.0	223.0	225.5	227.1	227.8	229.5	228.7	214.2	223.9	226.1	227.8	228.4	229.2	229.2
Fees for participant sports (12/77 = 100)	130.7	137.6	139.6	140.9	141.9	142.0	141.6	130.5	139.3	141.2	142.5	143.5	143.7	142.8
Admissions (12/77 = 100)	125.1	129.7	131.2	131.6	131.2	132.2	133.0	125.0	128.7	130.1	130.6	130.3	131.2	132.1
Other entertainment services (12/77 = 100)	121.7	123.7	124.2	125.0	125.1	125.2	125.7	122.5	124.3	124.7	125.8	125.9	125.9	126.4
OTHER GOODS AND SERVICES	232.2	246.7	248.4	250.3	252.2	253.8	255.0	230.4	243.5	245.0	247.1	249.3	250.9	252.4
Tobacco products	218.2	226.8	227.1	230.7	234.1	236.1	237.4	217.8	225.9	226.2	229.8	233.2	234.0	236.6
Cigarettes	220.8	229.7	230.0	233.6	237.3	238.0	240.4	220.3	228.7	229.1	232.7	236.3	236.9	239.6
Other tobacco products and smoking accessories (12/77 = 100)	130.4	134.4	134.7	136.8	138.1	139.9	141.0	131.3	134.7	135.0	136.9	138.2	140.1	141.1
Personal care	230.5	239.1	240.9	242.3	243.7	245.9	246.5	228.4	237.1	238.8	240.4	241.8	244.1	244.7
Toilet goods and personal care appliances	226.6	234.7	236.4	238.5	240.6	243.8	244.5	225.5	235.4	236.9	239.2	241.5	244.7	245.4
Products for the hair, hairpieces, and wigs (12/77 = 100)	132.4	136.5	137.2	138.4	140.8	142.9	142.1	130.1	135.8	136.4	137.8	140.0	142.3	141.7
Dental and shaving products (12/77 = 100)	138.6	141.2	144.0	145.6	148.0	149.0	150.1	136.1	139.8	142.6	144.2	146.6	147.6	148.6
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	127.8	133.2	134.1	135.0	136.1	136.5	137.6	126.2	133.7	134.5	135.8	136.1	137.5	138.5
Other toilet goods and small personal care appliances (12/77 = 100)	129.8	136.0	135.9	137.0	137.4	140.3	140.5	134.0	139.1	138.9	140.2	140.7	143.5	144.0
Personal care services	234.7	243.9	245.7	246.5	247.3	248.7	249.2	231.5	239.2	241.0	241.8	242.8	244.0	244.4
Beauty parlor services for women	236.4	245.2	246.9	247.7	248.9	250.7	251.3	232.0	238.8	240.5	241.3	242.5	244.3	245.0
Haircuts and other barber shop services for men (12/77 = 100)	131.1	136.8	138.0	138.4	138.4	138.8	138.9	130.5	135.7	136.8	137.2	137.2	137.6	137.7
Personal and educational expenses	256.8	285.1	288.1	289.2	290.4	291.9	292.8	257.7	285.9	288.9	290.2	291.7	293.5	294.6
Schoolbooks and supplies	230.8	254.5	260.7	262.9	263.3	263.8	264.2	234.7	258.5	264.8	267.1	267.5	268.0	268.4
Personal and educational services	263.0	292.3	294.8	295.8	297.1	298.7	299.8	263.6	292.8	295.2	296.3	298.0	300.0	301.4
Tuition and other school fees	132.8	149.1	150.5	150.6	151.1	151.4	151.4	133.0	149.4	150.7	150.9	151.7	152.0	152.0
College tuition (12/77 = 100)	132.3	148.3	149.9	150.1	150.7	151.0	151.0	132.3	148.1	149.6	149.8	150.9	151.3	151.3
Elementary and high school tuition (12/77 = 100)	134.4	152.0	152.1	152.2	152.2	152.2	152.2	134.4	152.7	152.8	152.9	152.9	152.9	152.9
Personal expenses (12/77 = 100)	143.6	153.4	154.3	156.1	157.4	160.9	163.6	142.8	152.7	153.7	155.3	156.7	160.5	163.6
Special indexes:														
Gasoline, motor oil, coolant, and other products	410.4	402.8	400.5	383.9	379.3	362.6	366.1	411.5	404.0	401.8	385.3	380.6	363.7	367.2
Insurance and finance	386.6	423.1	423.9	424.8	420.9	426.3	431.5	386.1	422.1	422.8	423.5	419.9	425.9	430.9
Utilities and public transportation	272.4	293.9	297.7	299.1	302.7	305.1	310.8	270.6	292.6	296.4	297.7	301.5	304.0	309.6
Housekeeping and home maintenance services	326.2	341.3	343.0	344.0	344.0	347.5	349.8	323.8	341.5	343.3	344.2	344.0	348.2	350.4

[1] Not available.

c = corrected

21. Consumer Price Index for All Urban Consumers: Cross classification of region and population size class by expenditure category and commodity and service group

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000-1.250 million)			Size class C (75,000-385,000)			Size class D (75,000 or less)		
	1981	1982		1981	1982		1981	1982		1981	1982	
	Dec.	Feb.	Apr.	Dec.	Feb.	Apr.	Dec.	Feb.	Apr.	Dec.	Feb.	Apr.
	Northeast											
EXPENDITURE CATEGORY												
All items	144.2	144.2	143.6	152.9	150.7	150.0	159.2	158.1	158.6	150.7	151.4	151.9
Food and beverages	139.6	143.3	143.7	139.6	142.7	142.2	142.8	145.7	147.4	137.0	140.4	140.4
Housing	148.0	148.0	144.5	161.9	155.7	155.3	176.3	172.5	173.3	158.3	158.5	160.5
Apparel and upkeep	117.5	117.0	118.1	123.1	120.5	122.5	125.9	123.1	127.4	125.4	119.9	125.1
Transportation	157.9	158.5	153.7	165.4	164.2	160.0	162.7	161.6	158.6	161.8	161.7	158.1
Medical care	142.0	145.1	146.4	146.6	147.0	148.9	146.3	148.7	150.4	143.0	144.8	151.5
Entertainment	131.9	133.3	135.5	131.0	132.4	136.2	133.7	136.1	135.8	134.3	137.6	139.0
Other goods and services	135.4	136.9	139.0	138.7	140.6	141.1	142.0	142.9	145.3	138.5	140.6	142.9
COMMODITY AND SERVICE GROUP												
Commodities	141.8	142.1	140.8	149.6	147.9	146.6	151.1	150.1	149.6	147.2	147.6	146.5
Commodities less food and beverages	143.2	141.4	139.0	154.5	150.5	148.7	154.9	152.2	150.6	152.1	151.0	149.4
Services	147.3	148.9	147.4	158.0	155.1	155.4	172.5	171.0	173.4	156.1	157.3	160.4
	North Central region											
EXPENDITURE CATEGORY												
All items	152.6	152.6	155.2	149.2	151.9	155.1	147.4	149.1	151.2	147.6	151.0	153.3
Food and beverages	139.8	141.6	141.9	139.3	140.8	141.7	140.7	143.1	143.1	143.4	144.7	146.2
Housing	163.3	164.9	168.8	153.8	159.9	167.2	150.0	152.7	157.2	149.1	155.5	160.7
Apparel and upkeep	113.7	112.7	114.8	128.0	121.1	122.7	122.4	121.8	125.8	123.6	119.5	123.5
Transportation	162.7	161.1	158.7	160.8	159.7	156.9	162.3	161.0	158.4	160.1	150.3	157.2
Medical care	144.6	148.4	150.9	146.8	150.8	152.8	147.7	150.3	153.8	151.2	154.5	157.0
Entertainment	134.1	137.1	137.0	124.4	126.4	130.3	132.6	136.1	138.1	129.2	132.5	130.9
Other goods and services	137.0	138.8	140.3	142.9	145.1	146.5	135.6	137.3	139.0	141.7	144.6	146.4
COMMODITY AND SERVICE GROUP												
Commodities	145.1	145.2	145.4	142.9	145.4	146.4	142.2	143.5	144.3	140.7	142.1	143.7
Commodities less food and beverages	147.8	148.9	147.0	144.4	147.3	148.3	142.8	143.6	144.8	139.5	141.0	142.6
Services	163.7	166.1	169.8	159.5	162.6	169.3	156.1	158.4	162.4	158.7	165.0	168.7
	South											
EXPENDITURE CATEGORY												
All items	152.0	152.6	152.9	155.9	157.2	155.7	152.3	154.0	152.3	150.8	152.3	153.5
Food and beverages	141.4	144.2	145.0	141.3	144.8	144.9	141.9	144.1	144.0	143.4	148.1	145.9
Housing	160.3	160.2	161.1	166.7	168.3	165.2	159.7	162.7	159.1	156.2	158.8	161.5
Apparel and upkeep	123.5	122.6	125.6	123.7	121.1	124.3	118.2	117.0	120.2	110.4	105.7	111.1
Transportation	161.9	161.5	157.5	164.1	162.8	159.7	162.3	160.7	157.1	161.6	159.9	155.8
Medical care	143.2	145.9	149.5	147.6	150.5	152.3	153.0	155.4	160.1	160.1	162.5	165.1
Entertainment	127.4	129.3	130.1	137.1	140.0	141.2	136.4	140.4	141.1	138.4	140.4	145.7
Other goods and services	139.7	141.2	142.8	139.5	140.7	142.4	139.9	142.0	143.7	140.5	147.9	150.2
COMMODITY AND SERVICE GROUP												
Commodities	145.9	146.8	146.3	147.5	148.4	147.6	145.3	146.0	144.3	145.1	145.0	146.0
Commodities less food and beverages	147.9	149.0	146.9	150.1	149.9	148.8	146.7	146.8	144.5	145.8	144.6	146.0
Services	160.5	160.7	162.1	168.6	170.4	167.8	163.1	166.3	164.5	159.5	163.3	164.8
	West											
EXPENDITURE CATEGORY												
All items	156.1	157.9	158.5	155.1	157.1	157.0	149.4	150.2	151.1	149.1	153.3	157.9
Food and beverages	140.8	143.9	144.5	145.4	147.9	147.6	140.1	143.4	143.5	145.8	148.1	148.5
Housing	165.5	167.2	168.1	161.6	164.9	164.8	153.8	154.4	158.3	146.1	153.9	163.5
Apparel and upkeep	121.9	121.7	120.6	127.1	126.4	126.6	117.1	118.8	119.7	135.6	131.9	140.4
Transportation	162.9	164.2	162.9	165.0	163.6	161.7	162.8	160.9	158.3	164.6	164.5	160.5
Medical care	155.7	157.8	160.7	151.3	153.7	156.0	151.1	154.8	157.3	152.8	157.9	162.4
Entertainment	133.6	135.1	137.7	133.9	135.5	136.8	129.4	130.4	133.9	145.6	147.8	148.9
Other goods and services	141.0	144.5	147.5	142.8	145.3	148.9	136.8	137.1	139.5	148.0	147.6	149.8
COMMODITY AND SERVICE GROUP												
Commodities	144.9	146.0	145.5	147.2	148.4	148.1	143.7	145.2	146.4	145.5	147.5	148.9
Commodities less food and beverages	146.6	146.9	145.9	148.0	148.6	148.3	145.1	145.9	147.5	145.4	147.3	149.1
Services	170.9	173.7	175.9	166.0	169.1	169.3	157.5	157.3	157.9	154.6	161.8	171.2

22. Consumer Price Index—U.S. city average, and selected areas

[1967 = 100 unless otherwise specified]

Area[1]	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981		1982					1981		1982				
	May	Dec.	Jan.	Feb.	Mar.	Apr.	May	May	Dec.	Jan.	Feb.	Mar.	Apr.	May
U.S. city average[2]	269.0	281.5	282.5	283.4	283.1	284.3	287.1	269.1	281.1	282.1	282.9	282.5	283.7	286.5
Anchorage, Alaska (10/67 = 100)	244.6	...	253.0	...	260.0	...	263.8	240.1	...	248.6	...	254.5	...	258.0
Atlanta, Ga.	...	282.2	...	279.8	...	280.2	...	...	284.1	...	282.7	...	282.9	...
Baltimore, Md.	269.3	...	282.1	...	281.9	...	283.6	268.6	...	282.3	...	282.2	...	283.7
Boston, Mass.	263.6	...	274.0	...	269.8	...	272.5	263.6	...	273.4	...	269.8	...	272.0
Buffalo, N.Y.	...	264.3	...	259.9	...	258.3	...	...	262.7	...	258.0	...	256.4	...
Chicago, Ill.-Northwestern Ind.	264.5	273.9	275.4	274.9	278.4	280.2	287.7	263.9	274.4	275.9	275.4	276.5	280.0	287.0
Cincinnati, Ohio-Ky.-Ind.	271.7	...	285.7	...	284.9	...	288.7	273.3	...	288.4	...	287.2	...	291.2
Cleveland, Ohio	...	281.6	...	285.9	...	286.5	...	...	281.2	...	285.0	...	285.7	...
Dallas-Ft. Worth, Tex.	...	295.1	...	293.6	...	297.2	...	...	291.0	...	289.8	...	292.7	...
Denver-Boulder, Colo.	288.2	...	305.4	...	309.2	...	313.4	293.4	...	310.5	...	315.0	...	319.5
Detroit, Mich.	275.2	278.3	280.8	277.8	278.2	283.7	285.9	271.3	275.1	277.8	274.8	275.1	280.3	282.7
Honolulu, Hawaii	...	258.3	...	262.2	...	263.8	...	...	259.3	...	263.2	...	264.7	...
Houston, Tex.	...	302.7	...	304.1	...	304.9	...	...	298.8	...	300.3	...	302.1	...
Kansas City, Mo.-Kansas	...	273.5	...	276.0	...	274.0	...	...	272.0	...	274.1	...	272.1	...
Los Angeles-Long Beach, Anaheim, Calif.	267.3	282.3	285.8	285.6	286.6	286.8	287.1	270.7	286.1	289.8	289.4	290.4	290.5	290.6
Miami, Fla. (11/77 = 100)	143.2	...	155.2	...	155.1	...	155.7	144.8	...	156.4	...	156.4	...	157.0
Milwaukee, Wis.	278.5	...	291.3	...	289.3	...	292.9	283.5	...	295.3	...	292.5	...	296.0
Minneapolis-St. Paul, Minn.-Wis.	...	298.7	...	306.0	...	301.7	...	...	298.3	...	305.3	...	301.2	...
New York, N.Y.-Northeastern N.J.	258.7	267.9	268.5	269.0	267.4	268.2	270.9	255.9	266.9	267.5	267.8	265.9	266.5	269.4
Northeast, Pa. (Scranton)	259.9	...	272.5	...	267.2	...	270.2	263.3	...	274.5	...	268.4	...	272.1
Philadelphia, Pa.-N.J.	261.9	274.9	275.7	275.5	274.7	275.1	275.1	262.9	274.1	275.1	275.1	274.3	274.5	274.7
Pittsburgh, Pa.	...	281.8	...	278.6	...	275.3	...	...	282.6	...	280.0	...	276.7	...
Portland, Oreg.-Wash.	278.5	...	288.4	...	286.7	...	282.1	276.1	...	285.5	...	283.9	...	279.7
St. Louis, Mo.-Ill.	268.0	...	278.4	...	280.7	...	285.7	268.4	...	277.1	...	279.3	...	284.5
San Diego, Calif.	297.5	...	323.1	...	319.0	...	329.2	292.5	...	317.4	...	313.9	...	323.3
San Francisco-Oakland, Calif.	...	294.0	...	295.8	...	298.8	...	...	292.7	...	294.9	...	297.8	...
Seattle-Everett, Wash.	274.7	...	295.9	...	293.4	...	301.2	271.5	...	291.9	...	289.6	...	297.1
Washington, D.C.-Md.-Va.	264.7	...	278.0	...	278.8	...	278.4	267.7	...	281.8	...	283.8	...	283.3

[1] The areas listed include not only the central city but the entire portion of the Standard Metropolitan Statistical Area, as defined for the 1970 Census of Population, except that the Standard Consolidated Area is used for New York and Chicago.

[2] Average of 85 cities.

23. Producer Price Indexes, by stage of processing

[1967 = 100]

Commodity grouping	Annual average 1981	1981							1982					
		June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.[1]	Mar.	Apr.	May	June
FINISHED GOODS														
Finished goods	269.8	270.5	271.8	271.5	271.5	274.3	274.7	275.4	277.9	r277.9	276.9	276.9	277.7	279.9
Finished consumer goods	271.2	272.3	273.5	273.0	273.1	275.1	275.2	275.8	278.3	r278.6	277.2	276.9	277.6	280.0
Finished consumer foods	253.5	253.8	257.6	256.3	256.2	254.0	252.7	252.9	256.4	258.2	257.1	259.8	262.3	263.4
Crude	263.6	258.9	262.7	256.9	253.5	253.8	260.0	273.9	280.6	r282.5	262.9	266.1	259.4	254.3
Processed	250.6	251.3	255.0	254.2	254.4	252.0	249.9	249.0	252.1	r254.0	254.4	257.1	260.4	262.0
Nondurable goods less foods	319.4	322.0	322.5	322.1	324.2	324.3	325.4	326.3	329.3	r330.3	328.0	324.9	324.1	328.1
Durable goods	218.5	218.2	218.1	218.3	215.8	224.5	224.7	225.4	226.2	r224.0	223.5	223.8	224.7	226.2
Consumer nondurable goods less food and energy	208.6	208.4	209.5	210.4	211.8	212.6	213.6	213.9	217.4	r219.6	219.6	221.4	222.9	222.9
Capital equipment	264.3	263.8	265.4	265.8	265.3	271.5	273.0	274.1	276.2	r275.0	275.7	277.1	278.3	279.6
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	306.0	307.2	308.5	310.1	309.7	309.4	309.0	309.4	311.0	r311.1	310.9	310.1	309.8	310.0
Materials and components for manufacturing	286.2	285.8	287.9	289.8	290.2	290.2	289.5	289.3	290.4	r290.9	290.8	290.9	291.5	290.0
Materials for food manufacturing	260.9	262.4	260.5	261.0	254.6	250.9	246.8	245.6	250.7	r252.8	252.0	254.3	260.0	260.9
Materials for nondurable manufacturing	285.9	287.7	289.2	291.0	291.2	290.9	289.4	288.8	289.0	r289.3	289.5	288.1	288.1	285.8
Materials for durable manufacturing	312.2	310.7	314.4	316.0	317.1	316.7	314.9	314.0	313.6	r313.1	311.2	311.2	310.6	307.3
Components for manufacturing	259.2	257.3	259.5	261.8	263.8	265.1	266.9	267.8	269.8	r270.9	272.0	272.9	273.8	273.9
Materials and components for construction	287.5	289.6	290.4	290.7	290.0	290.1	290.2	291.1	292.0	r293.0	293.3	293.8	293.4	294.2
Processed fuels and lubricants	595.0	605.7	622.0	607.8	601.4	596.9	595.1	598.1	604.4	r596.8	593.5	579.8	569.9	581.2
Manufacturing industries	498.2	505.4	500.3	508.3	500.5	497.5	496.4	499.0	505.9	r497.8	497.1	487.6	482.3	492.0
Nonmanufacturing industries	680.5	694.3	692.0	695.6	690.5	684.7	682.2	685.6	691.3	r684.2	678.4	660.9	646.7	659.3
Containers	276.2	277.2	278.8	280.3	280.6	280.9	280.6	280.2	282.5	r285.5	286.5	287.4	287.1	286.7
Supplies	263.9	264.6	266.0	266.1	266.1	266.6	267.2	268.3	269.8	r270.4	270.9	272.3	273.6	273.6
Manufacturing industries	253.2	253.4	255.0	256.0	256.8	258.2	259.2	261.0	262.6	r263.3	264.8	265.6	267.2	267.3
Nonmanufacturing industries	269.6	270.5	272.0	271.6	271.1	271.2	271.6	272.4	273.8	r274.4	274.4	276.0	277.2	277.1
Feeds	230.4	235.4	232.8	229.1	221.3	215.9	212.0	214.6	214.8	r212.0	208.8	212.9	214.2	213.1
Other supplies	276.4	276.3	278.7	279.3	280.7	282.3	283.7	284.1	285.7	r287.3	288.1	289.1	290.2	290.4
CRUDE MATERIALS														
Crude materials for further processing	329.1	335.4	337.3	333.0	327.4	319.9	313.9	311.5	318.4	r321.6	319.9	322.8	328.1	325.7
Foodstuffs and feedstuffs	257.4	264.3	267.2	261.8	253.4	245.7	238.3	233.7	242.6	248.3	247.9	254.3	262.3	259.8
Nonfood materials	481.6	487.4	487.2	485.3	486.0	479.2	476.3	478.6	481.5	479.3	475.0	470.4	470.4	467.9
Nonfood materials except fuel	413.9	418.1	413.1	413.9	410.2	404.1	397.8	396.2	399.5	r394.6	387.4	379.0	376.6	370.0
Manufacturing industries	429.6	434.2	428.7	429.6	425.4	418.6	411.7	409.8	413.2	r407.5	398.5	389.0	386.4	378.9
Construction	262.4	262.6	262.6	263.1	263.6	264.7	264.8	265.2	267.6	r270.5	275.1	275.3	274.0	273.7
Crude fuel	676.5	759.2	781.2	766.7	788.7	779.0	792.5	813.0	812.9	r824.5	837.7	853.7	866.1	885.2
Manufacturing industries	865.4	877.2	902.6	883.0	911.4	898.4	915.8	942.5	940.3	r954.4	972.8	992.4	1,008.2	1,033.6
Nonmanufacturing industries	674.3	678.5	698.1	687.8	704.8	697.8	708.2	724.0	725.6	r735.4	744.5	757.6	767.4	781.7
SPECIAL GROUPINGS														
Finished goods excluding foods	273.2	274.1	274.7	274.6	274.7	279.1	280.0	280.9	283.0	r282.4	281.5	280.6	280.9	283.4
Finished consumer goods excluding foods	276.3	277.7	277.9	277.7	277.9	281.6	282.4	283.2	285.2	r284.9	283.3	281.7	281.6	284.6
Finished consumer goods less energy	233.9	233.4	235.0	235.0	234.9	237.2	237.2	237.6	240.5	r241.3	240.7	242.4	244.1	244.9
Intermediate materials less foods and feeds	310.1	311.2	312.7	314.5	314.6	314.6	314.5	314.9	316.4	r316.4	316.3	315.3	314.6	314.8
Intermediate materials less energy	285.2	285.5	287.2	288.5	288.7	288.8	288.5	288.7	289.9	r290.7	290.7	291.2	291.7	290.9
Intermediate foods and feeds	250.7	253.2	251.1	250.2	243.5	239.3	235.2	235.2	238.8	r239.4	237.8	240.7	245.0	245.3
Crude materials less agricultural products	545.8	551.3	550.6	549.1	551.4	543.4	540.7	543.5	546.1	543.9	538.2	532.2	531.7	529.4
Crude materials less energy	254.0	259.7	261.8	258.0	250.4	243.2	235.8	231.6	239.1	243.4	242.8	247.3	252.5	248.6

[1] Data for February 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

24. Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981							1982					
			June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.[1]	Mar.	Apr.	May	June
	All commodities	293.4	294.8	296.2	296.4	295.7	296.1	295.5	295.8	298.3	r298.6	297.9	297.9	298.6	299.4
	All commodities (1957-59 = 100)	311.3	312.8	314.3	314.5	313.7	314.2	313.5	313.8	316.5	r316.8	316.1	316.1	316.8	317.7
	Farm products and processed foods and feeds	251.5	254.3	256.8	254.2	250.3	246.0	242.5	241.0	246.0	r248.4	247.5	251.4	255.6	255.3
	Industrial commodities	304.1	305.1	306.2	307.2	307.4	309.0	309.3	310.0	311.8	r311.6	311.0	309.9	309.5	310.7
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	254.9	260.7	263.3	257.9	251.1	243.1	237.4	234.6	242.2	247.1	244.6	250.6	256.1	252.7
01-1	Fresh and dried fruits and vegetables	267.0	263.3	265.6	258.1	252.8	248.8	254.0	280.5	289.2	r290.1	256.4	266.7	270.7	263.8
01-2	Grains	248.4	257.1	257.4	242.7	227.0	227.6	228.5	213.6	225.2	223.2	220.9	226.0	228.2	225.7
01-3	Livestock	248.0	263.0	266.5	262.0	257.3	244.5	231.1	225.0	236.8	251.2	255.6	267.6	282.9	277.5
01-4	Live poultry	201.2	210.0	215.3	210.3	196.7	185.7	175.0	171.4	186.8	197.3	197.7	186.2	192.7	207.2
01-5	Plant and animal fibers	242.0	259.6	251.3	232.5	206.5	211.7	198.5	188.4	198.2	r193.5	199.7	207.4	214.1	203.1
01-6	Fluid milk	287.4	285.0	284.3	285.0	287.3	294.3	298.2	296.7	287.6	285.8	282.5	280.3	278.8	278.9
01-7	Eggs	187.1	174.6	185.1	180.7	193.2	193.8	209.7	195.5	187.0	200.6	204.0	192.1	164.3	159.3
01-8	Hay, hayseeds, and oilseeds	274.1	285.3	290.0	284.3	267.2	230.4	221.1	218.8	218.4	217.6	213.7	222.8	224.3	219.3
01-9	Other farm products	274.3	242.7	250.2	263.9	268.9	263.3	273.1	280.2	280.1	273.7	273.0	274.2	273.9	271.8
02	Processed foods and feeds	248.7	249.9	252.2	251.2	248.9	246.6	244.3	243.6	247.1	r248.1	248.1	250.8	254.4	255.8
02-1	Cereal and bakery products	255.5	256.4	258.3	257.7	258.5	256.9	256.5	255.1	256.6	r253.3	254.2	253.8	253.9	253.3
02-2	Meats, poultry, and fish	246.2	248.6	257.1	[illegible]	253.3	246.6	240.0	236.1	243.7	r247.9	249.7	257.1	267.1	271.1
02-3	Dairy products	245.7	245.2	245.1	245.3	245.5	246.8	246.9	247.2	247.7	248.0	248.0	248.4	248.5	248.7
02-4	Processed fruits and vegetables	261.1	262.5	265.9	267.3	270.0	271.7	270.5	271.8	273.2	r276.3	275.7	274.5	273.4	275.4
02-5	Sugar and confectionery	276.8	274.8	266.0	267.3	246.8	246.7	244.1	247.6	256.8	r257.2	255.0	256.4	265.8	269.5
02-6	Beverages and beverage materials	247.5	248.1	249.0	249.4	249.1	250.0	251.4	251.9	253.9	r255.1	255.7	256.6	256.7	256.5
02-7	Fats and oils	227.5	227.3	234.8	229.5	224.3	223.4	221.5	219.1	216.6	r216.8	214.1	218.6	222.2	222.0
02-8	Miscellaneous processed foods	250.1	251.5	252.2	252.1	253.0	249.9	250.1	250.1	251.0	250.9	249.6	249.5	248.0	248.6
02-9	Prepared animal feeds	230.3	234.3	232.2	228.9	222.9	218.1	214.7	217.2	217.4	r214.9	212.0	216.1	217.4	216.4
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	199.6	200.1	201.3	202.4	202.9	204.0	203.6	203.4	205.0	r205.6	205.0	204.7	205.1	204.5
03-1	Synthetic fibers (12/75 = 100)	156.7	157.9	159.7	161.2	161.0	162.7	161.6	161.5	162.9	r163.2	163.8	162.1	164.3	163.8
03-2	Processed yarns and threads (12/75 = 100)	137.8	139.3	140.3	142.0	142.3	144.4	140.3	139.6	139.2	r140.7	140.8	140.4	141.0	139.4
03-3	Gray fabrics (12/75 = 100)	146.7	147.4	148.2	149.0	149.1	148.0	147.4	147.2	148.2	r147.3	147.1	145.8	145.5	145.8
03-4	Finished fabrics (12/75 = 100)	125.2	125.6	126.0	126.8	126.8	126.7	126.5	125.6	126.8	r127.1	125.7	125.5	125.4	124.0
03-81	Apparel	185.5	186.2	187.2	187.8	188.0	189.9	190.8	191.0	192.7	r193.2	191.7	192.2	192.7	193.0
03-82	Textile housefurnishings	228.2	223.9	227.1	228.8	232.2	233.0	233.4	233.6	237.6	r240.8	246.2	246.5	246.4	244.4
04	Hides, skins, leather, and related products	261.5	261.6	261.1	261.3	261.7	260.0	259.8	260.7	261.8	r261.6	262.7	264.4	263.4	262.7
04-2	Leather	319.5	321.0	319.0	313.7	313.2	313.7	311.3	312.3	319.0	r317.7	315.5	313.2	309.5	306.7
04-3	Footwear	241.2	241.5	242.4	242.5	242.9	239.6	239.8	240.1	238.9	r238.6	240.6	243.7	242.5	243.8
04-4	Other leather and related products	243.5	244.3	242.9	245.1	245.0	245.0	245.4	245.4	247.5	r248.1	253.3	253.2	253.2	250.5
05	Fuels and related products and power	694.4	707.6	704.9	704.3	703.5	698.1	698.1	702.5	705.1	r697.8	690.1	671.2	661.9	677.4
05-1	Coal	497.3	491.7	505.5	507.0	510.2	510.8	512.7	515.2	525.3	r529.9	527.0	532.5	534.4	534.1
05-2	Coke	456.5	469.7	469.7	469.7	469.7	469.7	469.7	469.7	469.7	r469.7	468.1	468.1	468.2	462.7
05-3	Gas fuels[2]	939.8	954.6	969.4	949.3	976.6	965.6	983.0	1,003.7	987.9	r987.6	993.8	996.6	1,003.4	1,029.7
05-4	Electric power	366.8	366.6	374.6	385.8	383.8	378.4	378.3	384.2	382.8	r392.9	404.1	406.7	405.5	406.6
05-61	Crude petroleum[3]	803.6	815.9	798.9	796.8	796.8	788.2	785.9	787.2	787.2	r770.3	745.0	718.0	718.2	718.5
05-7	Petroleum products, refined[4]	805.8	828.1	816.3	813.4	806.1	802.3	798.3	798.6	801.9	r789.7	770.5	733.4	712.7	738.5
06	Chemicals and allied products	287.8	290.5	291.3	293.3	293.3	292.4	292.0	291.8	292.9	r293.6	294.6	294.5	296.2	293.5
06-1	Industrial chemicals[5]	363.8	369.7	370.4	371.5	371.8	367.9	363.7	362.8	362.9	r362.2	362.6	359.6	358.1	352.9
06-21	Prepared paint	249.9	250.0	250.7	250.7	250.7	250.7	254.5	256.4	258.9	r258.9	259.3	259.3	265.1	265.1
06-22	Paint materials	300.2	300.8	304.5	308.5	308.0	308.1	308.3	305.8	306.6	r306.4	306.8	306.8	306.2	304.2
06-3	Drugs and pharmaceuticals	193.4	193.2	195.5	195.0	197.8	198.5	198.2	198.9	202.2	r204.4	204.8	208.6	209.4	209.6
06-4	Fats and oils, inedible	295.6	303.1	290.9	305.6	285.6	277.7	282.5	280.4	272.8	274.2	290.1	282.6	288.4	287.5
06-5	Agricultural chemicals and chemical products	284.8	288.9	288.9	293.4	292.6	293.1	295.7	294.9	296.8	r298.0	297.0	296.3	294.9	294.0
06-6	Plastic resins and materials	289.2	290.0	295.9	297.5	296.8	299.5	293.2	294.2	286.1	r287.3	286.8	286.1	285.4	281.9
06-7	Other chemicals and allied products	254.4	256.3	254.8	257.3	257.4	256.9	259.9	260.0	263.8	r264.9	267.7	269.0	275.9	273.0
07	Rubber and plastic products	232.8	233.4	232.1	234.1	235.7	237.3	238.0	238.3	237.3	r239.3	241.8	241.9	242.9	243.3
07-1	Rubber and rubber products	256.7	256.8	254.7	256.9	260.3	262.9	264.4	264.6	262.5	r266.0	269.3	268.7	271.2	271.5
07-11	Crude rubber	281.7	285.2	284.2	284.7	283.1	279.8	279.0	280.8	281.8	282.1	282.8	283.2	283.6	282.4
07-12	Tires and tubes	250.9	251.2	246.8	249.9	256.5	257.1	255.9	255.4	253.6	r256.7	256.3	254.4	255.0	255.3
07-13	Miscellaneous rubber products	252.4	250.9	251.4	253.1	253.9	261.1	266.7	267.2	263.8	r268.8	278.1	278.8	284.6	285.4
07-2	Plastic products (6/78 = 100)	128.4	129.1	128.7	129.8	129.9	130.3	130.3	130.6	130.5	r131.0	132.0	132.4	132.3	132.6
08	Lumber and wood products	292.8	298.1	296.5	294.5	289.3	284.3	282.1	285.4	285.5	r285.2	285.4	286.1	283.9	288.7
08-1	Lumber	325.2	335.8	332.4	329.9	320.2	311.7	306.6	309.9	310.0	r308.1	308.1	311.5	309.2	315.2
08-2	Millwork	273.4	272.2	273.6	272.3	271.4	271.3	271.8	273.7	277.1	r278.6	276.4	276.4	275.8	280.1
08-3	Plywood	245.7	251.5	247.8	245.6	240.8	234.3	233.5	239.7	237.4	r235.1	237.1	234.1	230.6	238.9
08-4	Other wood products	239.2	239.8	240.7	239.8	240.5	239.9	239.3	239.4	238.2	r238.7	239.6	237.7	237.3	237.1

See footnotes at end of table.

24. Continued—Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1980	1981							1982					
			June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.[1]	Mar.	Apr.	May	June
	INDUSTRIAL COMMODITIES—Continued														
09	Pulp, paper, and allied products	273.7	272.9	274.9	275.9	277.8	279.2	280.4	281.0	285.5	r286.3	286.3	287.9	289.1	289.3
09-1	Pulp, paper, and products, excluding building paper and board	271.0	271.2	272.3	273.7	274.8	275.7	275.8	275.6	276.1	r276.8	277.3	276.4	275.4	274.6
09-11	Woodpulp	388.1	394.2	394.2	394.2	394.2	402.3	413.7	413.7	410.3	r410.3	414.1	392.3	388.2	380.3
09-12	Wastepaper	175.7	182.9	182.1	182.1	178.5	165.1	144.5	143.4	135.2	128.8	129.2	128.1	121.5	115.2
09-13	Paper	280.0	278.5	279.7	282.1	285.9	287.8	287.4	287.2	289.2	r289.8	289.5	291.7	288.8	288.2
09-14	Paperboard	258.2	259.2	259.4	260.6	261.6	261.7	261.6	260.0	258.7	261.4	261.1	261.2	258.8	255.9
09-15	Converted paper and paperboard products	250.0	258.9	261.2	262.4	262.8	263.2	263.1	263.2	263.9	r264.7	265.5	265.0	264.7	265.0
09-2	Building paper and board	231.3	237.4	235.5	234.2	234.2	233.3	232.1	230.3	233.8	r231.4	237.5	235.5	238.5	238.4
10	Metals and metal products	300.4	298.4	302.0	304.1	304.9	305.3	304.2	303.3	304.7	r304.2	303.6	303.8	303.4	300.1
10-1	Iron and steel	333.8	330.1	338.8	339.9	339.8	341.3	340.0	339.9	343.1	r342.9	342.4	342.6	341.2	338.3
10-13	Steel mill products	337.6	332.2	344.9	344.9	345.3	348.7	348.6	348.9	350.6	r350.3	350.5	352.2	352.1	349.9
10-2	Nonferrous metals	286.0	284.5	282.8	287.3	289.4	285.4	281.1	277.1	274.4	r273.6	287.6	286.1	283.5	253.7
10-3	Metal containers	315.9	314.1	315.2	318.7	318.8	318.2	318.1	316.8	324.3	r326.2	326.1	329.7	330.1	330.2
10-4	Hardware	262.4	259.7	263.8	265.3	267.8	269.5	271.5	272.0	274.1	r274.8	275.7	276.2	276.7	277.9
10-5	Plumbing fixtures and brass fittings	267.4	268.9	270.9	271.2	271.6	272.9	273.1	274.0	274.6	r276.4	278.9	280.3	281.0	282.5
10-6	Heating equipment	223.9	223.5	226.4	227.9	228.5	229.0	228.8	229.9	233.4	r233.1	233.5	235.8	237.3	238.6
10-7	Fabricated structural metal products	295.4	295.0	297.9	299.3	300.0	302.6	303.2	303.0	303.4	r304.0	304.5	305.0	304.8	305.2
10-8	Miscellaneous metal products	270.8	269.4	272.0	272.9	273.7	276.1	278.0	278.3	281.2	r278.7	284.6	285.3	290.0	289.5
11	Machinery and equipment	263.1	262.1	264.8	266.2	268.1	269.3	270.4	272.0	274.1	r275.4	275.7	277.3	278.1	278.4
11-1	Agricultural machinery and equipment	287.7	286.8	288.1	290.3	292.8	295.5	300.8	302.8	303.1	r304.6	304.6	306.1	307.0	308.8
11-2	Construction machinery and equipment	320.8	320.1	323.8	325.0	326.5	328.3	329.6	332.0	337.0	r337.9	337.4	341.4	343.4	343.7
11-3	Metalworking machinery and equipment	301.2	301.3	302.9	303.5	305.3	306.6	307.9	312.9	315.9	r317.2	317.0	318.7	320.3	320.8
11-4	General purpose machinery and equipment	288.5	287.0	290.6	292.3	293.9	295.1	296.2	297.9	300.0	r301.3	301.5	302.9	303.3	303.1
11-6	Special industry machinery and equipment	308.0	308.8	311.0	310.3	312.8	314.6	315.0	316.4	320.4	r320.7	320.6	323.1	324.1	324.7
11-7	Electrical machinery and equipment	220.1	219.2	221.1	222.8	224.2	225.3	226.0	227.0	228.7	r229.5	230.5	231.6	231.7	231.9
11-9	Miscellaneous machinery	252.3	250.1	254.0	256.0	258.5	259.0	259.8	260.4	261.4	r264.0	264.1	265.4	267.2	268.0
12	Furniture and household durables	198.4	197.3	199.5	199.6	201.0	201.3	202.1	202.9	203.5	r204.6	204.7	205.6	206.1	206.6
12-1	Household furniture	219.4	218.6	220.0	220.7	222.2	222.8	225.1	226.6	227.5	r227.4	228.5	230.6	230.9	231.1
12-2	Commercial furniture	257.6	257.9	258.7	259.1	261.6	262.1	263.3	263.9	266.7	r271.2	273.9	274.5	275.5	276.2
12-3	Floor coverings	178.6	180.7	182.8	181.9	181.7	180.9	182.3	181.4	180.3	r180.6	179.8	180.3	180.5	180.7
12-4	Household appliances	186.9	186.1	188.8	189.1	190.1	190.8	190.9	191.3	193.4	r195.3	195.9	196.3	197.8	198.5
12-5	Home electronic equipment	89.1	86.7	87.4	87.6	87.8	88.1	88.0	89.6	89.3	r89.6	88.8	88.2	88.1	88.2
12-6	Other household durable goods	280.8	276.4	282.1	280.9	285.8	285.8	285.3	286.2	283.4	r283.7	284.3	283.5	283.1	284.6
13	Nonmetallic mineral products	309.5	313.6	314.3	314.1	313.2	313.3	313.7	313.5	315.6	r319.0	319.7	320.0	319.1	318.7
13-11	Flat glass	212.9	210.3	218.3	218.3	218.3	218.5	218.5	216.1	216.2	r216.2	216.2	216.2	216.2	216.2
13-2	Concrete ingredients	296.3	297.5	297.7	298.0	298.5	298.4	298.5	298.7	306.2	r308.4	309.5	309.2	310.7	310.9
13-3	Concrete products	291.2	293.5	293.4	293.4	292.9	293.3	293.4	293.6	295.5	r295.9	296.0	297.3	297.1	297.9
13-4	Structural clay products, excluding refractories	249.7	250.7	250.9	250.9	255.3	256.2	256.5	257.5	257.5	r257.7	257.4	260.7	258.1	258.4
13-5	Refractories	302.5	307.1	307.1	307.1	307.1	307.8	308.9	311.3	316.8	r335.1	338.4	339.7	340.4	340.9
13-6	Asphalt roofing	407.0	428.5	421.9	420.9	401.6	402.9	410.2	405.6	401.3	r400.4	392.8	385.2	384.0	388.8
13-7	Gypsum products	256.2	260.7	258.7	255.3	252.9	252.4	251.3	249.7	250.4	255.0	260.7	262.8	259.4	256.4
13-8	Glass containers	328.5	335.3	335.5	335.5	335.5	335.5	335.5	335.5	335.4	r352.2	355.2	357.4	357.4	357.4
13-9	Other nonmetallic minerals	463.9	476.8	476.2	475.3	474.3	473.3	473.5	474.7	474.7	r478.7	480.1	478.8	472.1	465.2
14	Transportation equipment (12/68 = 100)	235.4	234.3	235.0	235.9	231.8	244.5	246.3	246.8	248.6	r245.2	244.9	245.6	247.2	249.6
14-1	Motor vehicles and equipment	237.5	236.7	237.4	238.4	232.8	247.8	248.9	249.5	250.8	r246.8	246.4	246.6	248.7	251.5
14-4	Railroad equipment	338.2	331.4	338.1	338.7	338.7	338.7	341.3	340.1	345.8	r345.8	352.8	353.9	349.6	349.6
15	Miscellaneous products	265.6	266.3	263.2	262.6	267.0	268.5	269.5	267.6	268.3	r273.5	272.9	273.3	272.3	271.6
15-1	Toys, sporting goods, small arms, ammunition	212.2	211.2	213.2	212.7	213.6	213.0	212.7	213.3	218.4	r220.1	221.6	221.9	222.7	222.9
15-2	Tobacco products	268.3	268.7	268.8	268.8	274.5	278.2	278.2	278.2	278.2	r306.6	306.4	306.5	306.7	306.7
15-3	Notions	259.6	268.0	267.5	267.7	267.8	269.7	269.7	269.7	270.3	r270.4	271.8	271.8	280.3	280.3
15-4	Photographic equipment and supplies	210.1	212.5	211.4	207.1	208.7	208.9	209.0	209.1	209.9	r210.5	212.5	214.6	210.9	210.8
15-5	Mobile homes (12/74 = 100)	([6])	([6])	158.1	158.3	158.7	159.1	159.3	159.3	159.5	159.6	161.6	162.0	162.1	162.5
15-9	Other miscellaneous products	346.9	346.9	333.1	334.6	345.5	348.5	344.8	344.6	342.2	r341.1	334.3	333.5	330.8	328.0

[1] Data for February 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Prices for natural gas are lagged 1 month.

[3] Includes only domestic production.

[4] Most prices for refined petroleum products are lagged 1 month.

[5] Some prices for industrial chemicals are lagged 1 month.

[6] Not available.

r = revised.

25. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1981	1981							1982					
		June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. [1]	Mar.	Apr.	May	June
All commodities — less farm products	295.7	296.7	298.0	298.7	298.5	299.5	299.4	300.0	302.0	r301.9	301.4	300.9	301.1	302.3
All foods	251.9	252.2	255.2	253.7	251.7	249.1	247.4	247.6	251.6	r253.2	251.5	254.4	257.9	259.0
Processed foods	252.2	253.1	256.0	255.0	252.8	250.0	247.6	246.5	250.5	r251.9	252.1	254.9	259.0	260.9
Industrial commodities less fuels	....	263.5	265.0	266.1	266.4	268.7	269.0	269.4	271.1	r271.5	271.6	272.2	272.8	272.5
Selected textile mill products (Dec. 1975 = 100)	135.9	135.9	136.8	137.2	138.1	138.2	138.4	137.9	139.3	r139.7	139.0	138.9	138.9	138.1
Hosiery	134.3	135.7	135.8	135.3	135.5	136.5	136.5	136.7	136.9	r136.9	137.5	138.1	138.5	138.5
Underwear and nightwear	203.5	203.5	204.7	204.7	204.7	204.7	205.7	206.3	213.9	r215.6	216.4	216.4	216.3	217.8
Chemicals and allied products, including synthetic rubber and fibers and yarns	278.6	281.2	282.3	284.0	284.4	283.8	283.2	283.1	284.3	r285.1	285.8	285.7	287.3	284.8
Pharmaceutical preparations	186.8	186.6	189.0	188.4	191.6	192.8	192.5	193.3	195.8	r199.3	200.0	204.4	205.3	205.3
Lumber and wood products, excluding millwork	303.1	312.2	308.7	306.2	298.0	290.1	286.4	290.7	289.9	r287.9	288.6	289.9	287.2	294.0
Special metals and metal products	279.4	277.9	280.2	281.9	280.1	286.7	286.8	286.6	287.9	r286.0	285.5	285.7	286.4	285.8
Fabricated metal products	280.0	279.0	281.7	283.1	283.9	286.0	287.0	287.1	289.4	r289.0	291.5	292.5	294.3	294.6
Copper and copper products	204.0	203.7	202.5	206.2	205.1	201.9	198.9	195.4	194.5	194.1	191.0	190.5	191.6	190.0
Machinery and motive products	256.7	255.6	257.4	258.6	257.7	264.3	265.8	266.9	268.9	r268.1	268.2	269.3	270.5	271.8
Machinery and equipment, except electrical	288.3	287.3	290.4	291.7	293.8	295.0	296.4	298.4	300.7	r302.3	302.2	304.1	305.2	305.7
Agricultural machinery, including tractors	296.2	294.8	295.6	298.2	301.6	305.7	312.5	314.7	315.1	r316.0	315.5	317.7	318.2	319.8
Metalworking machinery	329.4	328.3	330.1	331.4	333.9	336.7	338.3	341.2	343.8	r344.9	346.4	348.8	349.4	350.3
Numerically controlled machine tools (Dec. 1971 = 100)	239.4	241.4	241.7	241.8	241.8	241.8	242.2	242.0	240.1	r239.8	240.3	240.2	240.3	240.3
Total tractors	324.0	322.5	325.5	327.8	330.7	338.3	342.2	342.3	346.9	r346.9	348.4	351.7	352.4	353.2
Agricultural machinery and equipment less parts	289.0	287.9	288.6	291.1	294.0	297.6	303.5	305.8	306.5	r307.4	307.3	309.2	309.6	311.0
Farm and garden tractors less parts	298.9	298.0	298.0	301.4	305.5	313.0	319.6	319.7	319.7	r319.7	318.8	322.3	322.9	324.3
Agricultural machinery, excluding tractors less parts	294.4	292.5	293.9	295.8	298.7	299.9	303.5	310.9	311.6	r313.2	307.3	314.3	314.7	316.5
Industrial valves	314.8	315.3	317.5	319.8	322.7	322.4	323.4	325.3	328.6	r330.2	327.1	327.7	327.9	327.2
Industrial fittings	302.1	303.0	303.0	303.0	304.3	304.1	304.1	304.1	304.1	304.1	304.1	309.1	309.1	309.1
Construction materials	283.0	285.0	285.7	285.5	284.4	284.6	284.1	285.2	286.6	286.9	287.4	288.1	287.9	289.1

[1] Data for February 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

26. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1981	1981							1982					
		June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. [1]	Mar.	Apr.	May	June
Total durable goods	269.8	269.1	270.8	271.9	271.8	275.0	275.4	276.0	277.6	r277.4	277.3	278.1	278.4	278.4
Total nondurable goods	312.4	315.7	316.8	316.2	315.0	312.8	311.4	311.4	314.7	r315.4	314.2	313.5	314.5	316.0
Total manufactures	285.9	286.9	288.0	288.6	288.3	289.8	289.7	289.9	291.9	r292.0	291.9	290.9	291.3	292.4
Durable	269.6	268.9	270.6	271.7	271.7	275.1	275.8	276.5	278.0	r277.8	277.8	278.7	279.1	279.4
Nondurable	303.6	306.4	306.9	306.9	306.3	305.5	304.5	304.3	306.8	307.2	305.8	303.9	304.1	306.2
Total raw or slightly processed goods	330.7	335.4	337.9	335.8	332.7	326.4	323.3	323.6	328.9	330.6	329.9	332.2	334.9	333.6
Durable	271.4	272.4	271.2	275.9	270.4	263.7	253.4	247.8	253.8	r253.7	250.7	245.9	239.4	225.2
Nondurable	334.0	336.9	341.8	339.1	336.3	330.0	327.4	328.2	333.4	r335.2	334.7	337.5	340.8	340.6

[1] Data for February 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

27. Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981							1982					
			June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. [1]	Mar.	Apr.	May	June
	MINING														
1011	Iron ores (12/75 = 100)	167.3	168.1	168.1	168.1	168.1	168.1	171.3	171.3	171.3	171.3	171.3	171.3	177.1	177.1
1092	Mercury ores (12/75 = 100)	346.0	352.0	358.3	365.4	364.5	354.1	354.1	343.7	347.9	313.7	325.0	327.0	308.3	307.5
1211	Bituminous coal and lignite	493.9	488.4	502.1	503.4	506.0	506.2	507.8	510.3	520.9	r525.8	521.9	527.2	529.4	529.8
1311	Crude petroleum and natural gas	898.8	713.7	911.5	900.3	913.6	900.8	907.5	921.7	919.7	r913.9	904.7	894.9	902.0	915.1
1442	Construction sand and gravel	277.3	278.4	278.4	278.2	279.2	279.7	279.8	280.7	287.4	r289.9	292.7	292.2	294.4	295.2
1455	Kaolin and ball clay (6/76 = 100)	138.7	137.1	137.1	137.1	137.1	143.4	143.4	143.4	149.6	149.6	149.6	151.7	151.7	151.7
	MANUFACTURING														
2011	Meatpacking plants	243.1	245.9	252.6	250.9	252.7	244.1	237.0	234.1	237.6	r244.4	247.0	253.3	264.3	265.7
2013	Sausages and other prepared meats	241.3	238.1	246.0	254.0	253.9	252.2	248.9	247.0	245.6	r251.0	248.2	253.4	265.9	273.7
2016	Poultry dressing plants	192.0	198.3	203.6	201.2	188.8	175.5	172.8	166.7	(2)	(2)	(2)	(2)	(2)	(2)
2021	Creamery butter	274.8	273.5	273.8	273.7	275.0	279.2	279.5	275.0	275.0	276.4	276.8	275.3	274.9	274.9

See footnotes at end of table

27. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981 June	1981 July	1981 Aug.	1981 Sept.	1981 Oct.	1981 Nov.	1981 Dec.	1982 Jan.	1982 Feb.[1]	1982 Mar.	1982 Apr.	1982 May	1982 June
	MANUFACTURING — Continued														
2022	Cheese, natural and processed (12/72 = 100)	215.8	216.1	213.8	214.5	215.0	215.4	215.9	218.4	218.6	217.9	216.8	216.6	217.1	217.9
2024	Ice cream and frozen desserts (12/72 = 100)	211.9	212.4	212.7	212.7	212.7	212.5	212.5	212.7	212.8	212.8	210.9	214.2	214.2	214.2
2033	Canned fruits and vegetables	248.5	248.9	251.6	252.9	254.3	257.0	256.4	258.9	260.8	r262.6	262.7	261.5	262.3	264.6
2034	Dehydrated food products (12/73 = 100)	177.6	175.0	180.5	178.7	183.4	182.1	181.4	182.1	184.0	181.8	181.5	181.5	178.5	178.5
2041	Flour mills (12/71 = 100)	195.9	199.3	196.5	191.0	195.3	191.1	191.5	189.2	191.5	r187.5	187.3	192.5	188.4	189.1
2044	Rice milling	277.2	300.3	297.4	284.3	268.2	247.3	235.4	215.1	205.9	192.2	183.5	177.9	183.0	180.3
2048	Prepared foods, n.e.c. (12/75 = 100)	124.6	127.5	125.9	124.8	119.6	117.3	116.4	116.0	116.0	r115.9	114.6	115.4	116.7	115.7
2061	Raw cane sugar	273.5	263.3	272.2	254.6	212.3	219.9	224.3	230.8	247.6	245.1	233.0	242.9	269.2	266.7
2063	Beet sugar	320.6	339.7	274.1	287.5	270.7	250.3	230.4	250.5	266.4	r272.2	272.4	272.6	280.2	280.2
2067	Chewing gum	309.8	303.1	303.1	303.2	303.2	303.2	303.2	303.2	303.3	303.3	303.4	303.4	303.4	303.4
2074	Cottonseed oil mills	199.0	212.3	212.0	206.0	182.3	172.0	167.2	182.4	184.9	r170.5	158.2	164.6	167.9	170.2
2075	Soybean oil mills	245.8	248.4	253.7	245.8	234.2	229.7	221.2	221.9	223.1	r220.4	217.8	225.0	232.0	226.4
2077	Animal and marine fats and oils	288.1	291.3	288.8	294.1	281.2	274.0	272.3	266.6	260.4	262.6	271.8	273.3	271.5	272.3
2083	Malt	282.5	286.1	286.1	286.1	275.4	275.4	275.4	275.4	267.1	267.1	267.1	259.1	259.8	259.8
2085	Distilled liquor, except brandy (12/75 = 100)	134.7	134.6	134.6	135.5	135.5	135.5	137.9	137.9	140.1	137.9	140.2	140.2	139.8	139.8
2091	Canned and cured seafoods (12/73 = 100)	187.8	187.5	187.4	188.4	188.8	188.2	188.3	188.5	187.2	187.0	187.7	188.2	188.0	188.4
2092	Fresh or frozen packaged fish	369.6	375.5	367.6	347.1	353.5	356.9	360.8	369.5	396.8	r399.2	420.7	433.8	427.5	442.8
2095	Roasted coffee (12/72 = 100)	238.0	236.6	236.4	235.7	237.3	238.2	239.2	240.4	245.1	r247.7	248.7	250.7	247.9	247.6
2098	Macaroni and spaghetti	252.0	246.6	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5
2111	Cigarettes	277.7	278.3	278.3	278.3	284.2	288.4	288.4	288.4	288.4	319.7	319.7	319.7	319.8	319.8
2121	Cigars	169.1	168.5	169.7	169.7	174.5	174.5	174.5	174.5	174.5	r178.6	175.6	176.8	176.6	176.6
2131	Chewing and smoking tobacco	320.9	320.8	321.0	321.3	325.3	326.1	326.1	326.1	326.1	349.4	349.4	349.4	353.6	353.6
2211	Weaving mills, cotton (12/72 = 100)	234.1	234.3	234.7	237.4	236.0	233.2	229.8	227.6	227.3	r227.1	226.5	226.1	227.7	226.0
2221	Weaving mills, synthetic (12/77 = 100)	136.6	137.1	138.0	139.3	139.5	139.4	139.8	139.5	139.8	r139.7	139.9	139.2	138.9	138.0
2251	Women's hosiery, except socks (12/75 = 100)	113.5	115.6	115.5	115.0	115.0	115.2	115.1	115.2	115.6	115.6	116.2	116.3	117.0	117.0
2254	Knit underwear mills	210.2	210.0	210.7	210.8	210.9	210.9	212.8	213.0	225.2	r225.2	235.5	235.6	226.0	228.7
2257	Circular knit fabric mills (6/76 = 100)	110.8	110.4	111.0	112.0	111.9	112.0	112.4	111.8	112.4	r113.2	110.6	110.1	109.7	108.2
2261	Finishing plants, cotton (6/76 = 100)	144.9	146.2	146.3	146.2	145.4	144.9	143.5	141.4	140.5	140.3	140.8	141.6	141.4	141.3
2262	Finishing plants, synthetics, silk (6/76 = 100)	126.5	126.6	127.1	127.8	129.0	129.1	129.1	128.6	129.4	r129.9	128.3	128.1	128.2	127.2
2272	Tufted carpets and rugs	154.3	155.6	158.3	157.4	157.3	155.7	157.0	156.7	155.5	r155.7	155.7	156.1	156.4	156.9
2281	Yarn mills, except wool (12/71 = 100)	221.8	225.8	225.1	225.4	223.8	222.4	219.9	217.2	216.3	r215.7	215.6	214.6	214.9	214.0
2282	Throwing and winding mills (6/76 = 100)	138.6	139.3	142.7	146.8	148.0	154.5	145.6	146.0	145.7	r150.3	150.8	150.9	152.6	148.3
2284	Thread mills (6/76 = 100)	151.4	151.1	151.1	151.1	154.8	157.0	157.0	156.8	156.8	156.8	156.8	156.7	156.6	156.5
2298	Cordage and twine (12/77 = 100)	134.8	134.3	134.3	134.3	139.3	139.3	139.3	140.7	141.0	141.0	141.0	141.0	141.0	141.0
2311	Men's and boys' suits and coats	223.9	224.6	225.9	226.2	226.5	227.4	228.4	230.5	233.7	r233.6	233.9	234.3	234.6	235.3
2321	Men's and boys' shirts and nightwear	208.8	207.5	210.5	210.6	211.5	212.4	212.6	213.4	173.4	r215.9	192.7	193.1	173.6	215.7
2322	Men's and boys' underwear	230.6	230.7	230.8	230.8	230.8	230.8	233.0	233.0	246.9	246.9	247.4	247.4	247.4	251.2
2323	Men's and boys' neckwear (12/75 = 100)	114.6	115.4	113.9	113.9	113.9	113.9	113.9	113.9	115.3	117.3	117.3	117.3	117.3	121.3
2327	Men's and boys' separate trousers	186.1	186.1	186.4	186.4	186.4	186.8	186.9	187.1	188.4	r188.4	188.2	193.0	194.9	195.0
2328	Men's and boys' work clothing	248.4	248.3	250.8	251.1	251.2	253.1	253.2	253.3	252.5	r254.2	252.9	253.8	253.7	254.1
2331	Women's and misses' blouses and waists (6/78 = 100)	119.8	118.5	121.0	121.2	121.3	126.4	126.7	126.7	126.5	r126.5	123.9	123.8	123.7	123.7
2335	Women's and misses' dresses (12/77 = 100)	121.1	122.5	123.0	124.3	123.5	123.4	124.1	122.7	123.0	r123.0	123.6	122.9	122.9	123.1
2341	Women's and children's underwear (12/72 = 100)	169.9	170.5	170.6	170.6	170.6	170.6	171.6	171.6	174.7	r174.8	175.7	175.7	177.2	179.4
2342	Brassieres and allied garments (12/75 = 100)	136.8	136.9	138.8	138.8	138.8	138.8	138.9	140.1	145.1	r148.8	149.2	149.2	148.5	148.5
2361	Children's dresses and blouses (12/77 = 100)	120.3	120.5	121.6	121.7	121.7	122.0	122.5	123.2	123.2	r123.2	122.0	121.0	121.0	121.0
2381	Fabric dress and work gloves	289.3	292.1	289.2	289.2	289.2	289.2	289.2	289.2	293.8	297.4	295.5	295.5	295.5	294.5
2394	Canvas and related products (12/77 = 100)	132.1	130.1	130.1	133.1	134.6	137.6	137.6	139.7	144.9	r144.9	147.8	146.3	146.5	143.8
2396	Automotive and apparel trimmings (12/77 = 100)	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
2421	Sawmills and planing mills (12/71 = 100)	228.2	234.8	233.5	231.2	225.2	219.5	216.5	218.6	218.0	r216.9	217.1	218.4	216.8	219.7
2436	Softwood veneer and plywood (12/75 = 100)	142.0	148.1	143.8	139.6	135.4	129.3	129.0	134.5	132.5	r130.5	132.3	129.2	126.0	133.3
2439	Structural wood members, n.e.c. (12/75 = 100)	156.6	158.2	157.6	156.9	156.6	154.8	154.2	153.2	153.9	r153.5	152.3	152.9	151.5	152.9
2448	Wood pallets and skids (12/75 = 100)	152.5	153.0	153.1	152.9	152.8	152.0	150.4	149.9	149.8	r149.0	148.1	145.8	144.6	144.2
2451	Mobile homes (12/74 = 100)	156.8	156.1	158.1	158.3	158.7	159.2	159.3	160.3	160.4	r160.5	162.7	162.9	163.1	163.4
2492	Particleboard (12/75 = 100)	172.8	182.3	179.6	173.6	170.5	168.0	166.9	170.3	172.6	r170.7	173.4	176.8	176.7	176.9
2511	Wood household furniture (12/71 = 100)	197.4	197.5	198.6	199.2	200.1	201.0	202.0	202.8	203.6	r204.3	204.8	207.0	207.3	207.6
2512	Upholstered household furniture (12/71 = 100)	174.9	173.9	175.1	175.1	175.3	175.6	179.5	182.1	184.4	r179.3	182.0	184.6	185.1	185.1
2515	Mattresses and bedsprings	193.7	190.5	191.3	194.6	195.2	195.2	197.5	198.0	204.4	r205.6	210.0	210.1	210.3	210.3
2521	Wood office furniture	254.6	254.6	254.7	254.7	257.1	257.1	257.0	257.6	261.9	r270.7	271.9	271.9	271.9	271.9
2611	Pulp mills (12/73 = 100)	253.2	251.3	251.3	251.3	251.3	255.0	262.5	262.5	258.6	r258.6	262.9	255.8	254.8	248.5
2621	Paper mills, except building (12/74 = 100)	156.3	155.7	157.0	157.4	158.8	159.8	159.7	159.6	162.0	162.0	161.9	161.8	160.5	160.8
2631	Paperboard mills (12/74 = 100)	151.8	152.3	151.7	152.4	153.7	153.6	153.5	152.7	152.5	r153.4	153.2	153.0	151.5	150.0
2647	Sanitary paper products	343.8	344.4	344.2	344.3	344.3	344.0	344.1	344.6	344.6	r344.6	345.6	345.5	344.7	347.3
2654	Sanitary food containers	245.3	242.2	246.0	252.9	253.2	253.4	253.3	253.3	254.0	r256.9	261.4	261.4	261.4	261.4
2655	Fiber cans, drums, and similar products (12/75 = 100)	163.0	160.9	163.2	163.2	163.2	167.6	167.6	170.0	176.4	176.5	176.5	176.5	176.7	176.7
2812	Alkalies and chlorine (12/73 = 100)	305.3	309.3	306.2	310.4	316.0	317.7	317.0	324.8	329.4	r335.2	335.0	322.1	338.2	338.2
2821	Plastics materials and resins (6/76 = 100)	150.8	150.7	155.0	155.6	156.0	156.3	153.7	154.3	150.7	r152.6	151.7	151.2	151.9	150.7
2822	Synthetic rubber	292.9	296.3	297.3	299.4	299.3	301.0	301.4	302.7	303.9	r306.1	305.6	306.6	307.1	303.8
2824	Organic fiber, noncellulosic	155.7	156.8	159.2	160.3	160.6	164.2	162.5	161.9	161.8	r162.9	162.4	161.7	161.7	161.3
2873	Nitrogenous fertilizers (12/75 = 100)	142.7	143.4	143.5	143.9	142.1	142.9	144.2	142.9	142.4	r142.6	142.2	142.7	141.1	139.5
2874	Phosphatic fertilizers	254.1	250.9	249.4	260.0	259.4	259.4	258.5	259.0	261.0	r263.5	261.7	258.5	256.2	257.6
2875	Fertilizers, mixing only	270.2	273.1	275.3	273.0	272.0	273.8	273.7	270.5	274.3	r276.8	278.1	278.4	278.5	278.8
2892	Explosives	312.0	312.6	315.7	319.8	316.5	316.7	316.5	315.6	314.9	r317.6	316.3	322.2	321.4	319.6
2911	Petroleum refining (6/76 = 100)	294.4	302.6	299.1	297.5	295.8	294.6	293.3	293.1	293.0	r289.1	281.9	267.5	259.2	267.7
2951	Paving mixtures and blocks (12/75 = 100)	194.3	198.4	197.1	196.3	196.0	196.3	196.4	196.0	197.0	r198.0	198.8	197.1	196.6	195.1
2952	Asphalt felts and coatings (12/75 = 100)	176.7	185.7	182.8	182.3	174.3	174.9	178.1	176.1	174.2	r173.8	170.5	167.4	167.7	169.8
3011	Tires and inner tubes (12/73 = 100)	215.9	216.2	213.1	215.5	220.6	221.0	220.1	221.2	222.0	r222.4	222.3	220.9	221.2	221.5

27. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981							1982					
			June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.[1]	Mar.	Apr.	May	June
3021	Rubber and plastic footwear (12/71 = 100)	184.4	184.1	185.0	185.4	185.3	185.0	185.0	185.2	186.1	r188.4	189.1	189.0	188.7	187.0
3031	Reclaimed rubber (12/73 = 100)	183.4	187.7	182.9	200.3	200.3	200.3	200.3	200.3	200.3	r200.4	204.9	206.9	207.2	208.4
3079	Miscellaneous plastic products (6/78 = 100)	129.8	129.6	129.2	130.2	130.3	130.8	130.8	131.0	131.1	r131.6	132.5	132.9	132.7	132.8
3111	Leather tanning and finishing (12/77 = 100)	150.6	150.7	151.3	148.5	148.3	148.2	148.8	147.5	150.8	r149.3	148.2	147.5	147.3	148.9
3143	Men's footwear, except athletic (12/75 = 100)	169.1	169.6	170.7	171.4	170.9	170.5	170.6	171.3	173.1	r172.2	173.6	174.9	175.1	175.2
3144	Women's footwear, except athletic	217.8	218.5	218.9	217.8	218.2	212.5	212.7	212.4	208.5	r208.8	211.6	215.6	213.4	215.2
3171	Women's handbags and purses (12/75 = 100)	155.5	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4
3211	Flat glass (12/71 = 100)	175.6	174.6	180.0	180.0	180.0	180.1	180.1	177.4	177.5	r177.5	177.5	177.5	177.5	177.5
3221	Glass containers	328.4	335.2	335.4	335.4	335.4	335.4	335.4	335.4	335.3	r352.1	355.1	357.3	357.3	357.3
3241	Cement, hydraulic	328.5	331.0	331.6	331.6	332.0	330.3	330.3	330.3	339.6	r341.5	338.3	337.9	338.6	338.7
3251	Brick and structural clay tile	298.9	298.5	298.9	298.9	298.9	298.9	300.5	300.5	298.9	r299.4	291.8	295.9	305.8	306.4
3253	Ceramic wall and floor tile (12/75 = 100)	132.5	132.1	132.1	132.1	140.4	140.4	140.4	140.4	140.4	r140.4	136.8	137.1	138.0	138.0
3255	Clay refractories	310.4	312.2	312.3	312.3	312.5	313.9	315.2	319.9	329.6	r354.4	357.5	357.0	357.2	357.1
3259	Structural clay products, n.e.c.	222.7	223.9	223.9	223.9	227.5	231.7	231.7	236.6	225.6	r226.0	196.8	202.4	216.4	216.5
3261	Vitreous plumbing fixtures	254.9	255.8	258.7	258.6	258.0	258.0	258.3	260.1	261.1	260.6	260.7	261.9	265.4	265.5
3262	Vitreous china food utensils	335.0	336.6	336.6	336.6	336.8	336.8	344.7	344.7	347.7	347.7	347.3	336.2	345.2	349.8
3263	Fine earthenware food utensils	308.9	309.6	309.6	309.6	313.8	313.8	315.0	315.0	315.1	r315.1	314.4	312.8	314.1	314.8
3269	Pottery products, n.e.c. (12/75 = 100)	160.1	160.7	160.7	160.7	161.8	161.8	163.7	163.7	164.3	r164.3	164.1	161.4	163.6	164.8
3271	Concrete block and brick	270.4	271.2	271.2	274.0	274.2	274.3	274.2	275.1	274.9	r276.4	276.3	276.4	276.6	277.0
3273	Ready-mixed concrete	298.7	301.7	300.7	300.0	299.2	299.5	299.4	299.6	301.9	r301.9	302.0	303.3	303.9	304.7
3274	Lime (12/75 = 100)	172.5	173.0	173.1	173.9	173.7	173.7	173.5	173.8	178.8	r183.7	186.0	186.6	188.1	188.4
3275	Gypsum products	257.3	260.9	261.8	258.9	252.9	251.5	252.5	250.6	250.9	253.9	260.5	262.2	258.8	256.2
3291	Abrasive products (12/71 = 100)	232.5	234.1	235.0	235.1	237.3	237.6	241.0	241.0	241.3	r248.3	247.8	248.9	251.2	252.1
3297	Nonclay refractories (12/74 = 100)	185.3	189.7	189.7	189.7	189.7	189.7	190.2	190.3	191.2	r198.3	200.5	202.4	203.2	203.9
3312	Blast furnaces and steel mills	342.8	338.2	350.1	350.0	350.3	353.1	353.0	353.3	354.7	r354.4	354.5	356.1	355.9	353.6
3313	Electrometallurgical products (12/75 = 100)	121.8	120.7	121.2	121.5	121.4	125.4	125.4	125.3	125.3	123.4	120.3	120.3	120.3	120.4
3316	Cold finishing of steel shapes	316.2	309.5	325.0	325.7	326.2	326.4	326.4	326.7	327.0	327.0	327.0	327.6	327.8	325.6
3317	Steel pipes and tubes	341.5	336.3	348.2	350.6	350.5	362.0	362.3	363.0	363.7	r364.1	366.0	365.8	365.8	365.7
3321	Gray iron foundries (12/68 = 100)	299.5	298.4	298.8	299.9	302.0	303.3	305.2	306.1	307.9	r310.0	310.6	310.4	311.4	311.6
3333	Primary zinc	326.5	335.1	335.4	353.8	355.9	337.0	337.5	315.7	308.6	r311.2	298.6	273.4	258.9	258.7
3334	Primary aluminum	333.5	332.5	334.2	334.4	333.6	333.5	332.5	332.8	324.1	r320.2	320.7	316.5	313.8	308.4
3351	Copper rolling and drawing	212.4	210.6	209.4	212.9	214.1	212.3	209.2	207.1	204.8	r203.9	199.6	196.6	197.5	189.8
3353	Aluminum sheet, plate, and foil (12/75 = 100)	175.9	176.1	177.3	177.4	178.0	179.9	180.2	180.8	181.8	r181.7	181.4	180.1	178.7	178.0
3354	Aluminum extruded products (12/75 = 100)	180.1	180.8	181.2	181.3	181.2	181.3	181.4	181.1	180.8	180.8	180.5	179.9	180.2	180.1
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	159.1	157.3	157.2	157.2	157.7	163.0	166.2	166.1	166.1	r166.5	165.9	162.9	163.0	165.4
3411	Metal cans	305.3	304.7	305.5	306.7	306.8	307.0	306.0	304.9	310.8	r314.0	315.1	319.6	320.4	319.3
3425	Hand saws and saw blades (12/72 = 100)	201.3	200.2	204.1	204.2	204.6	204.8	205.0	206.0	211.6	r214.8	214.3	214.9	220.8	220.9
3431	Metal sanitary ware	265.0	265.2	269.2	269.7	270.2	270.3	271.6	271.8	271.3	r272.8	273.8	275.8	275.7	276.0
3465	Automotive stampings (12/75 = 100)	146.4	145.2	146.2	146.4	146.9	147.4	149.7	149.1	150.1	r144.7	152.6	152.7	153.0	153.0
3482	Small arms ammunition (12/75 = 100)	160.5	157.8	157.8	159.9	159.9	159.9	159.9	163.9	167.5	r167.5	173.2	171.9	171.9	175.9
3493	Steel springs, except wire	245.1	241.9	243.7	248.9	252.4	253.9	254.1	256.1	255.8	r257.4	256.6	256.0	255.3	255.2
3494	Valves and pipe fittings (12/71 = 100)	248.4	248.5	250.0	251.0	252.7	252.9	253.5	255.7	257.7	r258.9	257.4	258.6	259.2	258.0
3498	Fabricated pipe and fittings	361.4	361.6	364.6	370.0	375.1	377.7	378.6	379.3	378.6	377.7	378.5	385.5	385.4	385.4
3519	Internal combustion engines, n.e.c.	311.0	307.2	312.0	314.2	322.1	323.2	326.4	325.4	329.4	r332.0	330.7	332.6	337.0	337.7
3531	Construction machinery (12/76 = 100)	157.0	156.9	159.0	159.5	160.1	161.0	161.6	159.7	162.5	r162.4	163.2	164.1	165.2	165.3
3532	Mining machinery (12/72 = 100)	282.3	280.8	282.7	285.3	286.9	288.5	290.8	292.9	295.5	r297.8	298.6	301.4	302.7	303.5
3533	Oilfield machinery and equipment	385.4	380.3	401.3	406.5	411.3	415.6	418.2	420.3	427.2	r429.2	433.7	436.2	435.8	437.8
3534	Elevators and moving stairways	253.5	251.2	252.1	252.8	254.6	257.0	260.7	265.6	264.3	r269.8	269.9	270.8	271.6	273.5
3542	Machine tools, metal forming types (12/71 = 100)	306.4	305.7	307.6	308.5	312.0	311.7	312.3	319.3	319.7	r322.8	324.5	325.5	325.6	326.5
3546	Power driven hand tools (12/76 = 100)	147.1	147.1	148.2	148.4	148.6	149.5	149.5	150.0	153.3	r153.2	153.4	154.0	158.1	158.4
3552	Textile machinery (12/69 = 100)	243.4	244.4	246.2	245.4	248.2	248.0	247.9	249.9	252.3	r253.5	253.4	256.2	256.5	258.1
3553	Woodworking machinery (12/72 = 100)	224.5	219.7	224.0	225.4	228.9	228.9	229.1	229.1	233.7	r232.9	229.6	235.0	234.7	234.4
3576	Scales and balances, excluding laboratory	226.2	230.3	226.6	226.6	226.1	226.2	226.3	226.5	228.3	r228.8	229.8	229.6	229.5	230.6
3592	Carburetors, pistons, rings, valves (6/76 = 100)	177.9	176.5	180.8	181.3	182.1	185.4	187.2	187.3	185.3	r189.6	190.2	192.6	195.2	195.7
3612	Transformers	208.7	209.6	210.7	212.8	214.5	217.3	222.0	222.0	220.5	r222.2	222.4	223.2	224.7	224.8
3623	Welding apparatus, electric (12/72 = 100)	227.2	227.2	228.3	229.6	231.6	232.5	233.2	235.8	236.8	r236.9	231.5	232.9	232.9	233.1
3631	Household cooking equipment (12/75 = 100)	141.1	141.0	140.5	141.5	141.6	141.6	141.9	142.6	146.0	r146.8	146.9	146.2	146.8	148.9
3632	Household refrigerators, freezers (6/76 = 100)	132.3	130.8	135.5	135.5	136.4	137.8	137.9	137.9	140.1	r141.1	140.8	142.5	143.2	144.3
3633	Household laundry equipment (12/73 = 100)	174.2	173.6	174.1	174.6	177.2	177.0	178.4	178.8	180.1	r180.5	186.2	186.9	188.6	189.0
3635	Household vacuum cleaners	158.8	158.6	158.6	158.8	158.8	161.3	161.0	160.8	165.6	r165.2	158.8	158.2	158.3	158.4
3636	Sewing machines (12/75 = 100)	146.6	153.8	153.8	153.8	153.8	156.0	156.0	156.0	156.0	r155.8	155.2	153.7	153.7	153.7
3641	Electric lamps	277.5	276.5	275.2	280.0	283.1	285.9	284.8	281.3	282.1	r286.1	283.5	290.7	294.5	283.9
3644	Noncurrent-carrying wiring devices (12/72 = 100)	250.4	251.5	253.3	253.8	258.5	258.7	262.1	262.1	257.9	r258.0	261.5	259.5	263.0	261.1
3646	Commercial lighting fixtures (12/75 = 100)	154.4	156.2	154.4	156.5	157.8	158.9	159.3	159.2	159.2	161.1	163.2	163.6	167.5	167.2
3648	Lighting equipment, n.e.c. (12/75 = 100)	155.7	153.7	153.8	161.3	161.7	162.0	162.4	163.1	162.8	167.8	168.8	170.2	170.4	170.9
3671	Electron tubes receiving type	309.7	312.5	327.4	327.5	327.5	327.5	327.8	342.2	374.1	r374.2	375.1	375.2	375.0	375.1
3674	Semiconductors and related devices	90.4	90.3	89.2	89.2	91.4	91.6	92.0	91.7	90.9	r90.2	91.2	90.1	89.6	89.7
3675	Electronic capacitors (12/75 = 100)	170.3	171.2	171.4	178.8	172.4	171.5	168.1	166.6	167.4	r169.7	168.6	167.8	166.6	166.8
3676	Electronic resistors (12/75 = 100)	141.3	141.2	142.1	142.5	142.7	142.7	143.0	142.8	143.7	r144.0	144.0	144.7	145.2	144.9
3678	Electronic connectors (12/75 = 100)	154.8	154.3	155.0	155.8	156.5	156.8	155.8	155.8	155.9	r156.2	157.1	156.7	158.1	158.3
3692	Primary batteries, dry and wet	182.2	181.0	181.6	182.7	182.7	182.7	182.7	182.7	182.0	r184.3	191.2	195.4	194.9	195.8
3711	Motor vehicles and car bodies (12/75 = 100)	150.2	150.3	150.3	150.1	143.4	158.6	158.7	159.1	150.8	r155.0	154.7	154.5	156.7	159.6
3942	Dolls (12/75 = 100)	131.1	130.9	130.9	130.9	130.9	130.9	130.9	130.9	135.5	r136.6	136.2	136.5	136.5	136.5
3944	Games, toys, and children's vehicles	220.5	221.9	222.0	222.0	222.2	222.2	222.6	223.9	228.4	r232.5	231.4	231.4	231.7	231.7
3955	Carbon paper and inked ribbons (12/75 = 100)	138.6	140.4	140.4	140.6	140.6	140.2	140.2	140.3	140.3	140.3	140.3	140.3	140.5	140.6
3995	Burial caskets (6/76 = 100)	139.5	138.3	138.3	140.6	143.4	143.4	143.4	142.7	142.7	143.8	145.3	145.3	149.3	149.3
3996	Hard surface floor coverings (12/75 = 100)	151.8	151.5	153.3	153.6	153.7	153.7	153.7	153.7	156.1	155.2	156.1	156.1	156.3	154.3

[1] Data for February 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

r = revised.

PRODUCTIVITY DATA

PRODUCTIVITY DATA are compiled by the Bureau of Labor Statistics from establishment data and from estimates of compensation and output supplied by the U.S. Department of Commerce and the Federal Reserve Board.

Definitions

Output is the constant dollar gross domestic product produced in a given period. Indexes of **output per hour of labor input**, or labor productivity, measure the value of goods and services produced per hour of labor. **Compensation per hour** includes wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. The data also include an estimate of wages, salaries, and supplementary payments for the self-employed, except for nonfinancial corporations, in which there are no self-employed. **Real compensation per hour** is compensation per hour adjusted by the Consumer Price Index for All Urban Consumers.

Unit labor cost measures the labor compensation cost required to produce one unit of output and is derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from the current dollar gross domestic product and dividing by output. In these tables, **unit nonlabor costs** contain all the components of unit nonlabor payments except unit profits. **Unit profits** include corporate profits and inventory valuation adjustments per unit of output.

The **implicit price deflator** is derived by dividing the current dollar estimate of gross product by the constant dollar estimate, making the deflator, in effect, a price index for gross product of the sector reported.

The use of the term "man hours" to identify the labor component of productivity and costs, in tables 28 through 31, has been discontinued. **Hours of all persons** is now used to describe the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all-employee hour** is now used to describe labor productivity in nonfinancial corporations where there are no self-employed.

Notes on the data

In the private business sector and the nonfarm business sector, the basis for the output measure employed in the computation of output per hour is Gross Domestic Product rather than Gross National Product. Computation of hours includes estimates of nonfarm and farm proprietor hours.

Output data are supplied by the Bureau of Economic Analysis, U.S. Department of Commerce, and the Federal Reserve Board. Quarterly manufacturing output indexes are adjusted by the Bureau of Labor Statistics to annual estimates of output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are from the Bureau of Economic Analysis and the Bureau of Labor Statistics.

Beginning with the September 1976 issue of the *Review*, the productivity tables were revised to reflect changeover to the new series—private business sector and nonfarm business sector—which differ from the previously published total private economy and nonfarm sector in that output imputed for owner-occupied dwellings and the household and institutions sectors, as well as the statistical discrepancy, are omitted. For a detailed explanation, see J. R. Norsworthy and L. J. Fulco, "New sector definitions for productivity series," *Monthly Labor Review*, October 1976, pages 40–42.

28. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950–81

[1977=100]

Item	1950	1955	1960	1965	1970	1974	1975	1976	1977	1978	1979	1980	1981
Private business sector:													
Output per hour of all persons	50.3	58.2	65.1	78.2	86.1	92.7	94.8	97.9	100.0	99.8	99.5	99.3	100.4
Compensation per hour	20.0	26.3	33.9	41.7	58.2	78.0	85.5	92.9	100.0	108.4	119.3	131.5	144.6
Real compensation per hour	50.4	59.6	69.4	80.0	90.8	95.9	96.3	98.8	100.0	100.7	99.6	96.7	96.3
Unit labor cost	39.8	45.2	52.1	53.3	67.6	84.2	90.2	94.8	100.0	108.6	119.9	132.4	144.0
Unit nonlabor payments	43.5	47.8	50.8	57.8	63.4	78.9	90.7	94.4	100.0	105.1	110.9	118.3	130.6
Implicit price deflator	41.0	46.1	51.7	54.8	66.2	82.4	90.4	94.7	100.0	107.4	116.9	127.6	139.4
Nonfarm business sector:													
Output per hour of all persons	56.2	62.7	68.2	80.4	86.7	93.1	95.0	98.1	100.0	99.8	99.1	98.8	99.7
Compensation per hour	21.8	28.3	35.6	42.8	58.6	78.4	86.0	93.0	100.0	108.5	119.0	130.8	143.9
Real compensation per hour	55.0	63.9	73.0	82.2	91.5	96.4	96.8	99.0	100.0	100.7	99.3	96.2	95.9
Unit labor cost	38.8	45.1	52.3	53.2	67.6	84.3	90.5	94.8	100.0	108.7	120.0	132.4	144.3
Unit nonlabor payments	42.8	47.9	50.5	58.2	64.0	75.1	88.9	94.0	100.0	103.6	108.5	117.6	130.4
Implicit price deflator	40.2	46.0	51.7	54.9	66.4	81.6	89.9	94.5	100.0	107.0	116.2	127.4	139.7
Nonfinancial corporations:													
Output per hour of all employees	(¹)	(¹)	66.3	79.9	85.4	91.3	94.4	97.4	100.0	100.4	100.4	101.0	103.5
Compensation per hour	(¹)	(¹)	36.3	43.0	58.3	77.6	85.5	92.5	100.0	108.2	118.7	130.7	143.9
Real compensation per hour	(¹)	(¹)	74.2	82.6	91.0	96.4	96.3	98.5	100.0	100.5	99.1	96.2	95.9
Unit labor cost	(¹)	(¹)	54.7	53.8	68.3	85.1	90.6	95.0	100.0	107.8	118.2	129.4	130.0
Unit nonlabor payments	(¹)	(¹)	54.6	60.8	63.1	75.7	90.9	95.0	100.0	103.8	108.3	117.3	132.3
Implicit price deflator	(¹)	(¹)	54.7	56.2	66.5	81.8	90.7	95.0	100.0	106.4	114.8	125.2	136.7
Manufacturing:													
Output per hour of all persons	49.5	56.5	60.1	74.6	79.2	90.9	93.5	97.7	100.0	100.9	102.0	101.7	104.0
Compensation per hour	21.5	28.8	36.7	42.9	57.6	76.4	85.5	92.4	100.0	108.2	118.8	131.6	146.2
Real compensation per hour	54.1	65.2	75.1	82.3	89.9	93.9	96.3	98.3	100.0	100.5	99.2	96.8	97.4
Unit labor cost	43.4	51.0	61.1	57.4	72.7	84.1	91.4	94.6	100.0	107.3	116.5	129.4	140.6
Unit nonlabor payments	55.1	59.4	62.0	70.3	66.0	70.4	88.5	95.1	100.0	104.7	105.7	108.7	122.6
Implicit price deflator	46.8	53.4	61.3	61.2	70.7	80.1	90.6	94.7	100.0	106.5	113.4	123.4	135.4

[1] Not available.

29. Annual changes in productivity, hourly compensation, unit costs, and prices, 1971–81

Item	Year											Annual rate of change	
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1950-81	1960-81
Private business sector:													
Output per hour of all persons	3.6	3.5	2.7	–2.3	2.3	3.3	2.1	–0.2	–0.3	–0.2	1.1	2.4	2.1
Compensation per hour	6.6	6.5	8.0	9.4	9.6	8.6	7.7	8.4	10.1	10.2	10.0	6.2	7.2
Real compensation per hour	2.2	3.1	1.7	–1.4	0.4	2.7	1.2	0.7	–1.1	–2.9	–0.3	2.3	1.7
Unit labor cost	2.9	2.9	5.2	11.9	7.2	5.1	5.5	8.6	10.4	10.4	8.8	3.6	5.0
Unit nonlabor payments	7.6	4.5	5.9	4.4	15.0	4.1	5.9	5.1	5.5	6.6	10.4	3.3	4.5
Implicit price deflator	4.4	3.4	5.4	9.4	9.7	4.7	5.6	7.4	8.8	9.2	9.3	3.5	4.9
Nonfarm business sector:													
Output per hour of all persons	3.3	3.7	2.5	–2.4	2.1	3.2	2.0	–0.2	–0.7	–0.3	0.9	2.1	1.8
Compensation per hour	6.6	6.7	7.6	9.4	9.6	8.1	7.6	8.5	9.7	9.9	10.0	5.9	7.0
Real compensation per hour	2.2	3.3	1.3	–1.4	0.4	2.2	1.0	0.7	–1.4	–3.2	–0.3	2.0	1.5
Unit labor cost	3.1	2.8	4.9	12.1	7.4	4.7	5.5	8.7	10.4	10.3	9.0	3.7	5.0
Unit nonlabor payments	7.4	3.2	1.3	5.9	16.7	5.7	6.4	3.6	4.8	8.4	10.9	3.3	4.4
Implicit price deflator	4.5	3.0	3.7	10.1	10.3	5.1	5.8	7.0	8.6	9.7	9.6	3.6	4.8
Nonfinancial corporations:													
Output per hour of all employees	4.8	3.0	2.6	–3.4	3.4	3.2	2.7	0.4	0.0	0.6	2.4	(¹)	2.0
Compensation per hour	6.5	5.8	7.7	9.7	10.1	8.2	8.1	8.2	9.7	10.1	10.0	(¹)	6.8
Real compensation per hour	2.1	2.5	1.4	–1.1	0.9	2.3	1.5	0.5	–1.4	–3.0	–0.3	(¹)	1.4
Unit labor cost	1.6	2.8	4.9	13.6	6.5	4.9	5.3	7.8	9.7	9.5	7.4	(¹)	4.8
Unit nonlabor payments	7.4	2.7	1.5	7.1	20.1	4.6	5.2	3.8	4.4	8.3	12.8	(¹)	4.0
Implicit price deflator	3.5	2.8	3.8	11.4	10.9	4.8	5.2	6.4	7.9	9.1	9.2	(¹)	4.5
Manufacturing:													
Output per hour of all persons	6.1	5.0	5.4	–2.4	2.9	4.4	2.4	0.9	1.1	–0.3	2.2	2.6	2.6
Compensation per hour	6.1	5.4	7.2	10.6	11.9	8.0	8.3	8.2	9.8	10.7	11.1	5.8	6.9
Real compensation per hour	1.8	2.0	0.9	–0.3	2.5	2.1	1.7	0.5	–1.3	–2.5	0.7	2.0	1.4
Unit labor cost	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.3	8.6	11.0	8.7	3.1	4.1
Unit nonlabor payments	11.2	0.8	–3.3	–1.8	25.9	7.4	5.2	4.7	0.9	2.9	12.7	2.3	3.0
Implicit price deflator	3.1	0.5	0.3	9.0	13.1	4.6	5.6	6.5	6.4	8.8	9.7	2.8	3.8

¹ Not available.

30. Quarterly indexes of productivity, hourly compensation, unit costs, and prices, seasonally adjusted

[1977=100]

Item	Annual average		Quarterly indexes										
			1979		1980				1981				1982
	1980	1981	III	IV	I	II	III	IV	I	II	III	IV	I
Private business sector:													
Output per hour of all persons	99.3	100.4	99.4	99.1	99.5	99.1	99.4	99.1	100.3	101.2	100.9	99.2	98.9
Compensation per hour	131.5	144.6	120.7	123.2	126.4	130.1	133.1	135.9	139.8	143.3	146.5	148.5	151.2
Real compensation per hour	96.7	96.3	98.2	98.0	96.7	96.6	96.9	96.0	96.1	96.9	96.3	95.8	96.8
Unit labor cost	132.4	144.0	121.4	124.3	127.0	131.3	133.9	137.1	139.4	141.6	145.2	149.7	152.8
Unit nonlabor payments	118.3	130.6	111.5	112.2	115.2	116.0	119.7	122.7	127.6	129.3	132.4	132.6	129.2
Implicit price deflator	127.6	139.4	118.1	120.2	123.0	126.1	129.1	132.2	135.4	137.5	140.9	143.9	144.9
Nonfarm business sector:													
Output per hour of all persons	98.8	99.7	98.9	98.8	98.9	98.2	99.0	99.0	100.0	100.4	99.9	98.2	98.3
Compensation per hour	130.8	143.9	120.2	123.0	126.0	129.4	132.3	135.4	139.2	142.4	145.7	147.9	150.8
Real compensation per hour	96.2	95.9	98.8	97.8	96.4	96.0	96.3	95.7	95.7	96.3	95.8	95.4	96.5
Unit labor cost	132.4	144.3	121.5	124.4	127.4	131.8	133.6	136.8	139.1	141.9	145.8	150.7	153.3
Unit nonlabor payments	117.6	130.4	109.2	110.1	113.9	115.1	119.2	122.0	127.8	128.7	132.2	132.8	129.7
Implicit price deflator	127.4	139.7	117.4	119.7	122.9	126.3	128.8	131.9	135.3	137.5	141.2	144.7	145.4
Nonfinancial corporations:													
Output per hour of all employees	101.0	103.5	100.5	99.9	100.2	100.1	101.8	101.8	103.4	104.0	103.8	102.4	102.3
Compensation per hour	130.7	143.9	120.1	122.7	125.7	129.3	132.5	135.5	139.3	142.4	145.5	148.0	151.1
Real compensation per hour	96.2	95.9	98.7	97.5	96.2	95.9	96.5	95.7	95.8	96.3	95.7	95.5	96.7
Total unit costs	129.7	140.9	118.2	121.3	124.2	129.2	131.1	134.1	136.0	138.7	142.2	147.0	150.0
Unit labor cost	129.4	139.0	119.5	122.8	125.4	129.1	130.2	133.1	134.7	137.0	140.2	144.6	147.7
Unit nonlabor costs	130.2	146.1	114.6	117.2	120.9	129.3	133.8	136.9	139.5	143.6	147.7	153.8	156.3
Unit profits	90.2	103.6	97.5	92.2	95.5	83.4	89.1	92.4	106.8	102.8	106.7	96.6	80.7
Implicit price deflator	125.2	136.7	115.9	118.1	121.0	124.1	126.4	129.5	132.7	134.7	138.2	141.4	142.2
Manufacturing:													
Output per hour of all persons	101.7	104.0	102.0	102.1	102.1	100.8	100.7	103.1	103.9	104.8	105.0	102.0	100.7
Compensation per hour	131.6	146.2	119.8	122.3	125.4	130.0	133.9	137.3	141.1	144.8	148.0	150.8	154.7
Real compensation per hour	96.8	97.4	98.5	97.2	96.0	96.5	97.5	97.0	97.1	97.9	97.3	97.3	99.0
Unit labor cost	129.4	140.6	117.5	119.8	122.8	129.0	133.0	133.2	135.8	138.2	141.0	147.8	153.5

31. Percent change from preceding quarter and year in productivity, hourly compensation, unit costs, and prices, seasonally adjusted at annual rate

[1977=100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	III 1980 to IV 1980	IV 1980 to I 1981	I 1981 to II 1981	II 1981 to III 1981	III 1981 to IV 1981	IV 1981 to I 1982	IV 1979 to IV 1980	I 1980 to I 1981	II 1980 to II 1981	III 1980 to III 1981	IV 1980 to IV 1981	I 1981 to I 1982
Private business sector:												
Output per hour of all persons	−1.1	4.7	3.5	−1.1	−6.6	−0.9	0.0	0.6	2.1	1.5	0.0	−1.4
Compensation per hour	8.6	11.9	10.4	9.3	5.5	7.6	10.3	10.6	10.1	10.1	9.3	8.2
Real compensation per hour	−3.8	0.5	3.2	−2.3	−2.1	4.2	−2.0	−0.6	0.3	−0.6	−0.2	0.7
Unit labor costs	9.8	6.9	6.6	10.6	13.0	8.6	10.3	9.7	7.8	8.5	9.3	9.7
Unit nonlabor payments	10.2	17.1	5.3	10.1	0.4	−8.7	9.3	10.8	11.5	10.6	8.1	1.3
Implicit price deflator	9.9	10.0	6.2	10.4	8.9	2.6	10.0	10.1	9.0	9.1	8.9	7.0
Nonfarm business sector:												
Output per hour of all persons	−0.2	4.4	1.4	−1.7	−6.9	0.5	0.2	1.2	2.3	0.9	−0.8	−1.7
Compensation per hour	9.8	11.7	9.6	9.5	6.3	7.9	10.1	10.5	10.0	10.2	9.3	8.3
Real compensation per hour	−2.7	0.3	2.5	−2.2	−1.4	4.5	−2.2	−0.7	0.3	−0.8	−0.2	0.8
Unit labor costs	10.1	7.0	8.1	11.5	14.1	7.3	9.9	9.2	7.6	9.2	10.1	10.2
Unit nonlabor payments	9.9	20.2	3.0	11.3	−1.8	−9.0	10.8	12.2	11.8	10.9	8.8	1.5
Implicit price deflator	10.0	11.0	6.5	11.4	10.1	2.1	10.2	10.1	8.9	9.7	9.7	7.5
Nonfinancial corporations:												
Output per hour of all employees	0.0	6.6	2.2	−0.5	−5.5	−0.3	1.9	3.2	3.8	2.0	0.6	−1.1
Compensation per hour	9.4	11.7	9.3	9.1	6.9	8.6	10.4	10.8	10.1	9.9	9.2	8.5
Real compensation per hour	−3.1	0.3	2.1	−2.5	0.8	5.2	−1.9	−0.4	0.4	−0.8	−0.3	0.9
Total unit costs	9.4	5.6	8.4	10.3	14.4	8.3	10.5	9.5	7.4	8.4	9.6	10.3
Unit labor costs	9.4	4.8	7.0	9.7	13.2	8.9	8.4	7.4	6.1	7.7	8.6	9.7
Unit nonlabor costs	9.5	7.9	12.3	11.8	17.6	6.7	16.8	15.4	11.1	10.4	12.3	12.0
Unit profits	15.7	77.9	−13.9	15.7	−32.6	c−51.4	0.3	11.9	23.3	19.7	4.5	−24.4
Implicit price deflator	9.9	10.4	6.2	10.7	9.6	2.4	9.6	9.7	8.6	9.3	9.2	7.2
Manufacturing:												
Output per hour of all persons	9.8	3.1	3.5	c0.9	−11.0	−4.9	1.0	1.8	4.0	4.3	−1.1	−3.0
Compensation per hour	10.5	11.6	10.8	9.3	7.6	10.7	12.3	12.5	11.4	10.5	9.8	9.6
Real compensation per hour	−2.2	c0.2	3.5	−2.4	−0.2	7.2	−0.2	1.1	1.5	−0.2	0.3	2.0
Unit labor costs	0.6	8.2	7.0	8.3	20.9	16.5	11.2	10.6	7.1	6.0	11.0	13.0

c=corrected.

WAGE AND COMPENSATION DATA

Data for the Employment Cost Index are reported to the Bureau of Labor Statistics by a sample of 2,000 private nonfarm establishments and 750 State and local government units selected to represent total employment in those sectors. On average, each reporting unit provides wage and compensation information on five well-specified occupations.

Data on negotiated wage and benefit changes are obtained from contracts on file at the Bureau, direct contact with the parties, and secondary sources.

Definitions

The **Employment Cost Index** (ECI) is a quarterly measure of the average change in the cost of employing labor. The rate of total compensation, which comprises wages, salaries, and employer costs for employee benefits, is collected for workers performing specified tasks. Employment in each occupation is held constant over time for all series produced in the ECI, except those by region, bargaining status, and area. As a consequence, only changes in compensation are measured. Industry and occupational employment data from the 1970 Census of Population are used in deriving constant weights for the ECI. While holding total industry and occupational employment fixed, in the estimation of indexes by region, bargaining status, and area, the employment in those measures is allowed to vary over time in accord with changes in the sample. The rate of change (in percent) is available for wages and salaries, as well as for total compensation. Data are collected for the pay period including the 12th day of the survey months of March, June, September, and December. The statistics are neither annualized nor adjusted for seasonal influence.

Wages and salaries consist of earnings before payroll deductions, excluding premium pay for overtime, work on weekends and holidays, and shift differentials. Production bonuses, incentive earnings, commissions, and cost-of-living adjustments are included; nonproduction bonuses are included with other supplemental pay items in the benefits category; and payments-in-kind, free room and board, and tips are excluded. *Benefits* include supplemental pay, insurance, retirement and savings plans, and hours-related and legally required benefits.

Data on negotiated wage changes apply to private nonfarm industry collective bargaining agreements covering 1,000 workers or more. Data on compensation changes apply only to those agreements covering 5,000 workers or more. *First-year* wage or compensation changes refer to average negotiated changes for workers covered by settlements reached in the period and implemented within the first 12 months after the effective date of the agreement. *Changes over the life of the agreement* refer to all adjustments specified in the contract, expressed as an average annual rate. These measures exclude wage changes that may occur under cost-of-living adjustment clauses, that are triggered by movements in the Consumer Price Index. *Wage-rate changes* are expressed as a percent of straight-time hourly earnings; *compensation changes* are expressed as a percent of total wages and benefits.

Effective wage adjustments reflect all negotiated changes implemented in the reference period, regardless of the settlement date. They include changes from settlements reached during the period, changes deferred from contracts negotiated in an earlier period, and cost-of-living adjustments. The data also reflect contracts providing for no wage adjustment in the period. Effective adjustments and each of their components are prorated over all workers in bargaining units with at least 1,000 workers.

Notes on the data

The Employment Cost Index data series began in the fourth quarter of 1975, with the quarterly percent change in wages and salaries in the private nonfarm sector. Data on employer costs for employee benefits were included in 1980, to produce a measure of the percent change in employers' cost for employees' total compensation. State and local government units were added to the ECI coverage in 1981, providing a measure of total compensation change in the civilian nonfarm economy.

Data for the broad white-collar, blue-collar, and service worker groups, and the manufacturing, nonmanufacturing, and service industry groups are presented in the ECI. Additional occupation and industry detail are provided for the wages and salaries component of total compensation in the private nonfarm sector. For State and local government units, additional industry detail is shown for both total compensation and its wages and salaries component.

Historical indexes (June 1981 = 100) of the quarterly rates of changes presented in the ECI are also available.

For a more detailed discussion of the ECI, see chapter 25, "The Employment Cost Index," of the BLS *Handbook of Methods* (Bulletin 1910), and the *Monthly Labor Review* articles: "Employment Cost Index: a measure of change in the 'price of labor,'" July 1975; "How benefits will be incorporated into the Employment Cost Index," January 1978; and "The Employment Cost Index: recent trends and expansion," May 1982.

Additional data for the ECI and other measures of wage and compensation changes appear in *Current Wage Developments*, a monthly periodical of the Bureau.

32. Employment Cost Index, total compensation

[June 1981 = 100]

Series	1980				1981				1982	Percent change	
										3 months ended	12 months ended
	March	June	Sept.	Dec.	March	June	Sept.	Dec.	March	March 1982	
Civilian nonfarm workers[1]	—	—	—	—	—	100.0	102.6	104.5	106.3	1.7	—
Workers, by occupational group											
White-collar workers	—	—	—	—	—	100.0	102.7	104.9	106.5	1.5	—
Blue-collar workers	—	—	—	—	—	100.0	102.3	104.1	105.7	1.5	—
Service workers	—	—	—	—	—	100.0	102.8	104.2	107.2	2.9	—
Workers, by industry division											
Manufacturing	—	—	—	—	—	100.0	102.1	104.0	106.0	1.9	—
Nonmanufacturing	—	—	—	—	—	100.0	102.8	104.8	106.4	1.5	—
Services	—	—	—	—	—	100.0	104.4	107.1	108.2	1.0	—
Public administration[2]	—	—	—	—	—	100.0	104.3	106.0	108.1	2.0	—
Private nonfarm workers	88.6	90.7	92.8	94.7	98.1	100.0	102.0	104.0	105.8	1.7	7.8
Workers, by occupational group											
White-collar workers	88.7	90.8	92.6	94.5	98.3	100.0	101.8	104.0	105.8	1.7	7.6
Blue-collar workers	88.3	90.5	93.0	94.9	97.8	100.0	102.2	104.0	105.6	1.5	8.0
Service workers	89.9	90.8	92.7	94.3	99.3	100.0	101.9	103.1	106.7	3.5	7.5
Workers, by industry division											
Manufacturing	88.7	90.5	92.6	94.7	98.0	100.0	102.1	104.0	106.0	1.9	8.2
Nonmanufacturing	88.6	90.8	92.9	94.7	98.2	100.0	102.0	103.9	105.7	1.7	7.6
State and local government workers	—	—	—	—	—	100.0	105.3	107.4	108.8	1.3	—
Workers, by occupational group											
White-collar workers	—	—	—	—	—	100.0	105.7	107.8	109.1	1.2	—
Blue-collar workers	—	—	—	—	—	100.0	104.2	105.9	108.2	2.2	—
Workers, by industry division											
Services	—	—	—	—	—	100.0	105.8	107.9	109.0	1.0	—
Schools	—	—	—	—	—	100.0	106.0	107.9	108.9	.9	—
Elementary and secondary	—	—	—	—	—	100.0	106.3	108.3	109.3	.9	—
Hospitals and other services[3]	—	—	—	—	—	100.0	105.0	107.8	109.5	1.6	—
Public administration[2]	—	—	—	—	—	100.0	104.3	106.0	108.1	2.0	—

[1] Excludes private household and Federal workers.

[2] Consists of legislative, judicial, administrative, and regulatory activities.

[3] Includes, for example, library, social, and health services.

NOTE: Dashes indicate data not available.

33. Employment Cost Index, wages and salaries, by occupation and industry group

[June 1981 = 100]

Series	1980				1981				1982	Percent change	
										3 months ended	12 months ended
	March	June	Sept.	Dec.	March	June	Sept.	Dec.	March	March 1982	
Civilian nonfarm workers[1]	—	—	—	—	—	100.0	102.5	104.4	106.3	1.8	—
Workers, by occupational group											
White-collar workers	—	—	—	—	—	100.0	102.6	104.7	106.7	1.9	—
Blue-collar workers	—	—	—	—	—	100.0	102.4	104.0	105.5	1.4	—
Service workers	—	—	—	—	—	100.0	102.5	103.6	106.8	3.1	—
Workers, by industry division											
Manufacturing	—	—	—	—	—	100.0	102.1	104.0	105.9	1.8	—
Nonmanufacturing	—	—	—	—	—	100.0	102.7	104.5	106.5	1.9	—
Services	—	—	—	—	—	100.0	104.4	106.6	108.6	1.9	—
Public administration[2]	—	—	—	—	—	100.0	103.8	105.5	107.5	1.9	—
All private nonfarm workers[3]	88.6	91.5	93.5	95.4	98.0	100.0	102.0	103.8	105.9	2.0	8.1
Workers, by occupational group											
White-collar workers	89.7	91.4	93.3	95.2	98.1	100.0	101.8	103.9	106.2	2.2	8.3
Professional and technical workers	89.2	90.8	93.2	95.3	98.2	100.0	103.3	105.5	108.0	2.4	10.0
Managers and administrators	90.6	92.0	93.5	94.7	98.6	100.0	101.6	102.8	105.8	2.9	7.3
Salesworkers	88.5	90.7	92.2	94.8	96.2	100.0	98.0	101.9	102.2	.3	6.2
Clerical workers	90.3	91.9	93.8	95.7	98.6	100.0	102.7	104.2	107.0	2.7	8.5
Blue-collar workers	89.3	91.6	93.8	95.7	97.7	100.0	102.3	103.9	105.4	1.4	7.9
Craft and kindred workers	89.3	91.4	94.0	96.1	97.8	100.0	102.9	104.3	106.2	1.8	8.6
Operatives, except transport	89.4	91.5	93.6	95.5	97.8	100.0	102.1	104.1	105.4	1.2	7.8
Transport equipment operatives	89.1	92.2	93.5	95.3	96.8	100.0	101.0	102.7	103.2	.5	6.6
Nonfarm laborers	89.6	91.8	93.9	95.7	97.5	100.0	101.5	103.3	104.1	.8	6.8
Service workers	90.8	91.9	93.4	94.8	99.2	100.0	101.8	102.7	106.7	3.9	7.6
Workers, by industry division											
Manufacturing	89.9	91.8	93.6	95.7	97.9	100.0	102.1	104.0	105.9	1.8	8.2
Durables	89.3	91.2	93.5	95.7	97.9	100.0	102.1	104.5	106.3	1.7	8.6
Nondurables	91.0	92.7	93.8	95.7	97.8	100.0	102.0	103.1	105.3	2.1	7.7
Nonmanufacturing	89.5	91.3	93.4	95.2	98.1	100.0	102.0	103.8	105.9	2.0	8.0
Construction	89.3	91.9	94.5	95.9	97.6	100.0	103.0	104.3	105.9	1.5	8.5
Transportation and public utilities	88.2	90.2	93.1	95.6	97.7	100.0	102.0	103.6	105.7	2.0	8.2
Wholesale and retail trade	90.5	92.2	93.6	95.1	98.2	100.0	101.3	102.3	103.9	1.6	5.8
Wholesale trade	88.7	92.1	93.0	95.9	98.5	100.0	102.0	103.4	106.3	2.8	7.9
Retail trade	90.8	92.2	93.8	94.8	98.1	100.0	101.6	101.9	103.0	1.1	5.0
Finance, insurance, and real estate	87.1	88.4	91.2	93.1	95.7	100.0	98.3	102.3	103.7	1.4	8.4
Services	90.5	91.9	94.2	95.7	99.6	100.0	103.6	105.8	108.8	2.8	9.2
State and local governments	—	—	—	—	—	100.0	105.0	107.0	108.2	1.1	—
Workers, by occupational group											
White-collar workers	—	—	—	—	—	100.0	105.4	107.5	108.5	.9	—
Blue-collar workers	—	—	—	—	—	100.0	103.9	105.5	107.5	1.9	—
Workers, by industry division											
Services	—	—	—	—	—	100.0	105.5	107.6	108.4	.7	—
Schools	—	—	—	—	—	100.0	105.7	107.7	108.3	.6	—
Elementary and secondary	—	—	—	—	—	100.0	106.0	107.9	108.7	.7	—
Hospitals and other services[4]	—	—	—	—	—	100.0	104.6	107.3	108.8	1.4	—
Public administration[2]	—	—	—	—	—	100.0	103.3	105.5	107.5	1.9	—

[1] Excludes private household and Federal workers.

[2] Consists of legislative, judicial, administrative, and regulatory activities.

[3] Excludes private household workers.

[4] Includes, for example, library, social, and health services.

NOTE: Dashes indicate data not available.

34. Employment Cost Index, wages and salaries, private nonfarm workers, by bargaining status, region, and area size

[June 1981 = 100]

Series	1980				1981				1982	Percent change	
										3 months ended	12 months ended
	March	June	Sept.	Dec.	March	June	Sept.	Dec.	March	March 1982	
COMPENSATION											
Workers, by bargaining status[1]											
Union	87.4	89.7	92.4	94.7	97.6	100.0	102.5	104.8	106.5	1.6	9.1
Manufacturing	—	—	—	—	—	100.0	102.3	104.6	106.3	1.6	—
Nonmanufacturing	—	—	—	—	—	100.0	102.7	105.0	106.8	1.7	—
Nonunion	89.3	91.1	92.8	94.6	98.4	100.0	101.7	103.5	105.3	1.7	7.0
Manufacturing	—	—	—	—	—	100.0	101.8	103.5	105.7	2.1	—
Nonmanufacturing	—	—	—	—	—	100.0	101.7	103.5	105.2	1.6	—
Workers, by area size[1]											
Metropolitan areas	88.5	90.6	92.8	94.7	98.1	100.0	102.1	104.1	105.7	1.5	7.7
Other areas	88.8	90.3	91.9	94.2	98.1	100.0	101.8	103.2	106.2	2.9	8.3
WAGES AND SALARIES											
Workers, by bargaining status[1]											
Union	88.4	90.8	93.5	95.8	97.4	100.0	102.7	105.0	106.5	1.4	9.3
Manufacturing	88.8	91.3	93.8	96.1	97.7	100.0	102.6	104.7	105.9	1.1	8.4
Nonmanufacturing	88.0	90.4	93.1	95.5	97.1	100.0	102.8	105.2	107.0	1.7	10.2
Nonunion	90.2	91.8	93.4	95.1	98.2	100.0	101.6	103.2	105.6	2.3	7.5
Manufacturing	91.0	92.3	93.4	95.4	97.9	100.0	101.7	103.3	105.9	2.5	8.2
Nonmanufacturing	89.9	91.5	93.4	95.0	98.3	100.0	101.6	103.2	105.5	2.2	7.3
Workers, by region[1]											
Northeast	90.6	92.5	94.2	96.0	98.3	100.0	101.7	104.4	106.1	1.6	7.9
South	89.7	91.4	93.2	94.9	98.0	100.0	101.9	102.8	105.7	2.8	7.9
North Central	89.7	91.6	93.3	95.3	98.1	100.0	101.5	103.3	104.7	1.4	6.7
West	89.2	90.4	93.5	95.3	97.9	100.0	103.2	105.1	107.9	2.7	10.2
Workers, by area size[1]											
Metropolitan areas	89.4	91.4	93.5	95.4	97.9	100.0	102.1	104.0	105.9	1.8	8.2
Other areas	90.1	91.5	92.9	95.1	98.3	100.0	101.8	103.1	106.0	2.8	7.8

[1] The indexes are calculated differently from those for the occupation and industry groups. For a detailed description of the index calculation, see BLS *Handbook of Methods*, Bulletin 1910.

35. Wage and compensation change, major collective bargaining settlements, 1977 to date

[In percent]

Measure	Annual average					Quarterly average								
						1980				1981				1982
	1977	1978	1979	1980	1981	I	II	III	IV	I	II	III	IV	I^p
Total compensation changes covering 5,000 workers or more, all industries:														
First year of contract	9.6	8.3	9.0	10.4	10.2	8.8	10.2	11.4	8.5	7.7	11.6	10.5	11.0	1.8
Annual rate over life of contract	6.2	6.3	6.6	7.1	8.3	6.7	7.4	7.2	6.1	7.2	10.8	8.1	5.8	1.1
Wage rate changes covering at least 1,000 workers, all industries:														
First year of contract	7.8	7.6	7.4	9.5	9.8	8.2	9.1	10.5	8.3	7.1	11.8	10.8	9.0	2.2
Annual rate over life of contract	5.8	6.4	6.0	7.1	7.9	6.5	7.3	7.4	6.5	6.2	9.7	8.7	5.7	2.0
Manufacturing:														
First year of contract	8.4	8.3	6.9	7.4	7.2	7.2	6.7	8.4	7.8	6.4	8.2	9.0	6.6	1.9
Annual rate over life of contract	5.5	6.6	5.4	5.4	6.1	5.7	5.1	5.6	5.8	5.5	6.7	7.5	5.4	1.8
Nonmanufacturing (excluding construction):														
First year of contract	8.0	8.0	7.6	9.5	9.8	9.4	10.3	9.5	8.2	8.0	11.8	8.8	9.6	1.8
Annual rate over life of contract	5.9	6.5	6.2	6.6	7.3	7.6	8.5	5.9	6.8	7.3	9.1	7.2	5.6	1.4
Construction:														
First year of contract	6.3	6.5	8.8	13.6	13.5	10.8	12.2	15.4	14.3	11.4	12.9	16.4	11.4	9.3
Annual rate over life of contract	6.3	6.2	8.3	11.5	11.3	9.1	10.4	13.0	12.0	10.3	11.1	12.4	11.7	8.9

36. Effective wage adjustments in collective bargaining units covering 1,000 workers or more, 1977 to date

Measure	Year					Year and quarter								
						1980				1981				1982^p
	1977	1978	1979	1980	1981	I	II	III	IV	I	II	III	IV	I
Average percent adjustment (including no change):														
All industries	8.0	8.2	9.1	9.9	9.5	1.6	3.3	3.5	1.3	1.7	3.2	3.3	1.5	.9
Manufacturing	8.4	8.6	9.6	10.2	9.4	2.0	3.4	2.9	1.7	2.3	2.4	3.1	1.9	.8
Nonmanufacturing	7.6	7.9	8.8	9.7	9.5	1.3	3.2	4.0	1.1	1.2	3.8	3.4	1.1	1.0
From settlements reached in period	3.0	2.0	3.0	3.6	2.5	.4	1.0	1.7	.5	.4	1.1	.5	.4	.1
Deferred from settlements reached in earlier period	3.2	3.7	3.0	3.5	3.8	.5	1.4	1.2	.3	.5	1.4	1.5	.4	.5
From cost-of-living clauses	1.7	2.4	3.1	2.8	3.2	.7	.8	.7	.6	.7	.7	1.2	.6	.2
Total number of workers receiving wage change (in thousands)[1]	—	—	—	—	8,648	—	—	—	—	3,855	4,701	4,364	3,225	2,713
From settlements reached in period	—	—	—	—	2,270	—	—	—	—	579	909	540	604	153
Deferred from settlements reached in earlier period	—	—	—	—	6,267	—	—	—	—	888	2,055	3,023	882	1,033
From cost-of-living clauses	—	—	—	—	4,593	—	—	—	—	2,639	2,869	2,934	2,179	1,750
Number of workers receiving no adjustments (in thousands)	—	—	—	—	145	—	—	—	—	4,937	4,092	4,429	5,568	6,176

[1] The total number of workers who received adjustments does not equal the sum of workers that received each type of adjustment, because some workers received more than one type of adjustment during the period.

WORK STOPPAGE DATA

Work stoppages include all known strikes or lockouts involving 1,000 workers or more and lasting a full shift or longer. Data are based largely on newspaper accounts and cover all workers idle one shift or more in establishments directly involved in a stoppage. They do not measure the indirect or secondary effect on other establishments whose employees are idle owing to material or service shortages.

Estimates of days idle as a percent of estimated working time measures only the impact of larger strikes (1,000 workers or more). Formerly, these estimates measured the impact of strikes involving 6 workers or more; that is, the impact of virtually *all* strikes. Due to budget stringencies, collection of data on strikes involving 6 workers or more was discontinued with the December 1981 data.

37. Work stoppages involving 1,000 workers or more, 1947 to date

Month and year		Number of stoppages		Workers involved		Days idle	
		Beginning in month or year	In effect during month or year	Beginning in month or year (in thousands)	In effect during month (in thousands)	Number (in thousands)	Percent of estimated working time
1947		270	....	1,629	....	25,720	
1948		245	....	1,435	....	26,127	.22
1949		262	....	2,537	....	43,420	.38
1950		424	....	1,698	....	30,390	.26
1951		415	....	1,462	....	15,070	.12
1952		470	....	2,746	....	48,820	.38
1953		437	....	1,623	....	18,130	.14
1954		265	....	1,075	....	16,630	.13
1955		363	....	2,055	....	21,180	.16
1956		287	....	1,370	....	26,840	.20
1957		279	....	887	....	10,340	.07
1958		332	....	1,587	....	17,900	.13
1959		245	....	1,381	....	60,850	.43
1960		222	....	896	....	13,260	.09
1961		195	....	1,031	....	10,140	.07
1962		211	....	793	....	11,760	.08
1963		181	....	512	....	10,020	.07
1964		246	....	1,183	....	16,220	.11
1965		268	....	999	....	15,140	.10
1966		321	....	1,300	....	16,000	.10
1967		381	....	2,192	....	31,320	.18
1968		392	....	1,855	....	35,567	.20
1969		412	....	1,576	....	29,397	.16
1970		381	....	2,468	....	52,761	.29
1971		298	....	2,516	....	35,538	.19
1972		250	....	975	....	16,764	.09
1973		317	....	1,400	....	16,260	.08
1974		424	....	1,796	....	31,809	.18
1975		235	....	965	....	17,563	.09
1976		231	....	1,519	....	23,962	.12
1977		298	....	1,212	....	21,258	.10
1978		219	....	1,006	....	23,774	.11
1979		235	....	1,021	....	20,409	.09
1980		187	....	795	....	20,844	.09
1981		145	....	729	....	16,908	.07
1981:	January	6	12	12.0	29.6	257.9	.01
	February	7	10	10.7	20.9	118.5	.01
	March	16	20	201.6	207.8	861.8	.04
	April	17	27	48.0	223.5	4,065.2	.20
	May	18	27	85.1	259.0	4,454.0	.24
	June	30	43	200.1	415.1	2,618.3	.13
1982^{p}:	January	2	4	6.1	11.4	199.9	.01
	February	2	6	2.5	13.9	236.9	.01
	March	3	8	8.3	21.3	352.2	.02
	April	8	15	34.7	54.3	478.3	.02
	May	^{r}14	^{r}20	^{r}43.7	^{r}59.3	^{r}618.1	.03
	June	14	22	33.3	56.4	816.9	.04

r = revised.

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SALES PUBLICATIONS

BLS Bulletins

Bargaining Calendar, 1982. Bulletin 2127, 63 pp., $4.50 (GPO Stock No. 029-001-02698-6). Presents information on anticipated union adjustments for 1982. The information—identified by company and union—includes major situations in which contracts expire, deferred wage increases come due, escalator clauses are reviewed, and contracts are reopened.

BLS Economic Growth Model System Used for Projections to 1990. Bulletin 2112, 108 pp., $5.50 (GPO Stock No. 029-001-02705-2). Describes the current Economic Growth model which was used to develop the revised 1990 industry and occupational employment projections. Intended for analysts who desire detailed information on the BLS projection methods, models, and techniques.

Major Collective Bargaining Agreements: Union Security and Dues Checkoff Provisions. Bulletin 1425-21, 75 pp., $4.75 (GPO Stock No. 029-001-02707-9). The 21st and last in a series of BLS studies, this bulletin provides information about two important issues in collective bargaining: The protection of a union's status by some type of union security provision and the collection of union dues by a dues checkoff arrangement.

Occupational Injuries and Illnesses in the United States by Industry, 1980. Bulletin 2130, 48 pp., $3.25 (GPO Stock No. 029-001-02706-1). Contains 1979 and 1980 data by industry on occupational injuries, illnesses, and fatalities in private, nonfarm establishments.

Occupational Outlook Handbook, 1982-83 Edition. Bulletin 2200, 484 pp., $9, softcover edition; $13, hardcover edition (GPO Stock No. 029-001-02651-0). An encyclopedia of careers covering more than 250 occupations. For each of these occupations information is included on what the work is like, job prospects through the 1980's, level and places of employment, educational and training requirements, advancement possibilities, related occupations, and where to find additional information.

Area Wage Survey Bulletins

Washington, D.C.-Maryland-Virginia, Metropolitan Area, March 1982. Bulletin 3015-8.

The annual series of 70 area wage survey bulletins is available by subscription for $90 per year.

Periodicals

CPI Detailed Report, April. Comprehensive report on consumer price movements, including statistical tables and technical notes. 109 pp., $3.50 ($20 per year).

Current Wage Developments, June. Monthly report on employee wage and benefit changes; collective bargaining settlements; and special wage trends. 62 pp., $2.50 ($14 per year).

Employment and Earnings, June. Report on national, State, and area employment; unemployment; hourly and weekly earnings; and hours of work for May. 152 pp., $3.75 ($31 per year). Special feature of this issue: Annual averages for unemployment in States and areas; Establishment data adjusted to new benchmarks.

Occupational Outlook Quarterly, Summer 1982, supplement to the Occupational Outlook Handbook featuring guidance information on selected careers each quarter, 40 pp.,$2.75 ($8 per year).

Articles: The Job Outlook for College Graduates During the 1980's; The Class of '77 One Year After Graduation; Career Information: What's Available in Schools? You're a What? Puppeteer.

Producer Prices and Price Indexes, Data for April 1982. Monthly report on producer price movements. Text, tables, and technical notes. 116 pp., $3.25 ($20 per year).

Microfiche

Gross Flow Data From the Current Population Survey, 1970-80. Provides unpublished data on movements between various labor force classifications. Available only from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Va. 22151. Order No. PB82-174327.

Employment and Unemployment in States and Local Areas, January-June 1981. Provides provisional monthly estimates of the labor force, employment and unemployment for States, labor market areas, counties, and cities of 25,000 or more inhabitants. These estimates are used in the administration of Federal economic assistance programs.

Mailgram Service

Consumer price index data summary by mailgram within 24 hours of the CPI release. Provides unadjusted and seasonally adjusted U.S. City Average data for All Urban Consumers (CPI-U) and for Urban Wage Earners and Clerical Workers (CPI-W). (NTISUB/158). $125 in contiguous United States.

FREE PUBLICATIONS

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Evaluating Your Firm's Injury and Illness Record, 1980: Transportation and Public Utilities Industries. Report 662, 11 pp. Wholesale and Retail Trade Industries. Report 661, 13 pp. These reports provide a means of comparing a firm's safety record with the record of other firms of similar size and with the industry as a whole. They present tabulations of occupational injury and illness incidence rates for the subject industry by employment size and quartile distribution.

U.S. Department of State Indexes of Living Costs Abroad and Quarters Allowances, April 1982. Report 666, 6 pp. Beginning with the next issue, this quarterly publication will be for sale by the Superintendent of Documents. (Subscription—$6.50, single copy—$1.75.)

Employment in Perspective: Minority Workers, First Quarter 1982, Report 667. 3 pp. Focuses on some of the available labor force data for black, and Hispanic workers by family type and family relationship in 1981.

Evaluating Your Firm's Injury and Illness Record, 1980:
Construction Industries, May 1982. Report 659. 9 pp.
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U.S. Department of Labor
Bureau of Labor Statistics
September 1982

In this issue:
Job creation in industry
Automation and the future

L2.6:

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Labor Month In Review

JOBS FOR COLLEGE GRADS. The Bureau of Labor Statistics published a report on the job outlook for college graduates in the 1980's. Here are excerpts from the article by Jon Sargent in the summer issue of *Occupational Outlook Quarterly*.

Supply. The number of bachelor's degrees awarded increased from 502,000 during the 1964-65 school year to 929,000 during the 1979-80 school year, an increase of more than 85 percent. The number of bachelor's degrees awarded annually is expected to increase slowly during the early 1980's, but as the baby-boom cohort passes out of the typical ages of college attendance, the number of degrees granted annually is expected to fall. This decline should be softened, however, by continued increases in college attendance by older workers. By 1990, the number of bachelor's degrees awarded will settle back to about the 1980 level. On the average, however, slightly more bachelor's degrees will be awarded annually during the 1980-90 period than in 1980.

Women college graduates were increasingly likely to be members of the labor force during the 1970's. The proportion of women with college degrees who were either employed or looking for work climbed from 59.6 percent in 1970 to 68.4 percent in 1980, continuing a long-term trend. This increase primarily stemmed from the growing tendency of married women graduates between the ages of 25 and 44 to combine work with family responsibilities. The proportion of this group in the labor force grew from 49 percent in 1970 to 69 percent in 1980; the proportions of other women graduates in the labor force increased only slightly over the period. The growing labor force commitment of women college graduates increased the impact of the baby-boom generation on the labor force. Their numbers were unprecedented, as was the proportion who sought jobs.

During the 1980's, the upward trend in the labor force participation rate of women is expected to continue, offsetting somewhat the impact of fewer people entering their twenties. Labor force growth will nevertheless slow. Women will account for about two-thirds of the labor force growth between 1980 and 1990.

Demand. During the 1970's, employment in professional and technical, managerial, and nonretail sales jobs—occupations generally requiring substantial proportions of workers with a degree—increased 40 percent, compared to about 28-percent growth for all workers. Between 1980 and 1990, employment in these occupations is projected to grow more slowly. They are expected to increase between 18 and 25 percent, depending on varying assumptions about growth in the economy, about as fast as the average for all occupations in the 1980's.

Educational upgrading was projected to occur in professional and technical, managerial and administrative, and nonretail sales occupations, continuing the trend toward greater complexity and skill requirements for many of these jobs, as well as employers' responses to a greater supply. A constant, but small, proportion of the jobs in other occupations was projected to require a college degree.

Outlook. A surplus of between 2 and 3 million college graduates is expected to enter the labor force during the 1980's. If the economy grows as slowly as it did during the 1970's, the surplus would be the higher figure, an average annual surplus of about 300,000 college graduates—about 1 graduate in 5, just as in the 1970's. If the economy grows more rapidly than it did in the 1970's, the average surplus would be about 200,000 college graduates—about 1 in 7—each year.

Even with more rapid growth, however, the job market experienced by college graduates in the 1980's is unlikely to be more favorable than in the 1970's. In 1980, a surplus of college graduates estimated at 3.8 million was already in the labor force, either employed in jobs that did not require their level of education or unemployed. Of course, many of these have since begun satisfying careers in occupations that do not require 4 years of college education. Others, however, can be expected to compete for jobs that more fully utilize their education. The job market will be more competitive to the extent that this pool of underemployed 1970's entrants competes with 1980's entrants for job openings requiring a college degree.

Like college graduates in the 1970's, future college graduates cannot be assured that they will find jobs in the occupations of their choice. Many may experience periods of unemployment, have to relocate to other areas of the country, or job-hop before finding one that satisfies them. As in the 1970's, some may have to compete with nongraduates for the more desirable jobs not previously filled by graduates, but in many cases, their additional education will prove to be an advantage. Even though a college degree may not be required, many employers prefer to hire the best educated candidate who is qualified for a job. In many cases, a college graduate will also have an advantage in gaining promotion in non-college careers over those without degrees. Many graduates who are forced to start work in jobs for which they are overqualified nevertheless may gain useful experience that will be an advantage in competing later for more challenging jobs.

The summer *Occupational Outlook Quarterly* is available from BLS regional offices (see inside front cover) at $2.75 per copy. □

Tracking job growth in private industry

Small, young firms are very important to the process of job generation, according to three recent studies of the behavior of individual employers

RICHARD GREENE

The job generation process has been one of the most heavily debated public policy issues of recent years. Governments at the Federal, State, and local levels have invested heavily in programs designed to create jobs—including urban and general economic development plans, tax credits and incentives, and public sector employment programs—and to improve the ability of individuals to compete effectively in the labor market by providing basic education and training in new and expanding fields. Much current interest centers on the problem of matching unemployed workers from declining industries to opportunities in areas with expanding manpower needs, such as high technology and defense-related activities. An interesting legislative approach, the Small Business Research Innovation Act,[1] is a proposal to set aside Federal research money for small businesses in order to spur technological innovation and create new jobs. The success of efforts to increase employment through economic policy hinges on the ability to understand the job creation process, identify the job creators, and develop policy initiatives that enhance their potential.

Aggregate data on employment levels and changes by industry and geographic area provide meaningful information on overall labor market trends, but are limited for the study of job creation in that they essentially portray net results. The employment changes reported monthly by the Bureau of Labor Statistics are the result of many thousands of production-function decisions made by individual employers, based on the relationship between their particular output and labor requirements. To understand the process of job creation, it is necessary to go beyond the aggregated data, and examine the multitude of business decisions at the establishment level.

This article summarizes the findings and methodology of some of the recent innovative labor market studies of this type in the private sector. Emphasis is placed on the microdata-based study of the job creation process under the direction of David Birch, director of the Massachusetts Institute of Technology (MIT) Program on Neighborhood and Regional Change.[2] Similar studies by the Institute of Urban and Regional Development of the University of California at Berkeley, under the direction of Michael B. Teitz,[3] and by the Brookings Institution[4] will also be summarized. These efforts, with appropriate refinement and extension, have the potential to improve significantly the body of labor market information used to guide the development of economic policy in this country.

The MIT program

David Birch of MIT has developed a theoretically simple approach to the analysis of the job creation process, based on the employment histories of nearly 6 million individual employers. Each firm in the MIT data base is characterized on the basis of location, size of employment, parent company affiliation, industry, and

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Richard Greene, formerly with the Office of Employment Structure and Trends, Bureau of Labor Statistics, is now an economist with the U.S. Department of State.

age. By comparing changes in these characteristics over time, Birch was able to trace in some detail the path of economic transformation of individual firms. By aggregating the changes in these characteristics for all establishments in a given sector or area, he was able to describe the overall labor market changes in that sector or area and, most importantly, how these changes occurred.

Some highlights:

- Overall employment change in a private-sector labor market is the result of:
  - —Births of new firms
  - —Expansions of existing firms
  - —Firms going out of business
  - —Firms reducing their work forces
  - —Firms moving their places of business
- The sum of the flows causing job losses (concerns going out of business or reducing their work forces) is nearly the same in all areas. The job loss rate averages about 8 percent annually.
- The job loss rate is quite high. Every area loses about 50 percent of its jobs every 5 years.
- Differences in net employment growth are largely the result of differences in the rates at which job losses are replaced. This replacement rate varies greatly from area to area.
- There are significant differences in the rates at which net new jobs are generated in various parts of the country.
- The establishments generating new jobs tend to be:
  - —*Small.* About two-thirds of all net new jobs between 1969 and 1976 were created by firms with 20 or fewer employees.
  - —*Young.* About 80 percent of all "replacement" jobs between 1969 and 1976 were generated by establishments in business 4 years or less.
  - —*Volatile.* Job generators tend to move through periods of expansion and retrenchment as they grow.
- Virtually none of the difference in the job generation capability of labor markets is due to firms moving their staffs and physical plants to different areas. Few businesses relocate, and when they do, they move short distances.

The MIT studies are basically a longitudinal analysis of the individual establishment data collected by Dun and Bradstreet (D&B). The D&B files are based on establishment reports of all businesses with commercial credit ratings. The data are used by D&B for its credit rating operation, but are commercially available to other enterprises for market research, mailing list preparation, billing, and associated activities. D&B collects many useful economic observations, including the year the establishment started, location, employment, sales, major industry, and any branch or subsidiary relationships. The information is collected by a full-time staff of 1,700 reporters, assisted by 500 part-time employees.

Files containing all D&B establishments for the years 1969, 1972, 1974, and 1976 were used by the MIT project group to build a data base. A micro history of each employer was developed by matching the firms from year to year by the unique identifying number assigned by D&B. (That number stays the same as long as the establishment is in the file, regardless of any change in location, size, or industry.) This economic history then allows a detailed analysis of changes in employment, location, corporate affiliation, and life cycles. When the data are aggregated on the basis of various characteristics, it is possible to identify the types of firms that created the greatest number of jobs.

Any review of the MIT findings must be tempered by an understanding of both the nature of the D&B files and the techniques used by MIT staff to build the data base. It should be emphasized that the D&B file was not designed as a time series or census of activity in a particular area or industry. As a result, a number of problems arise when the data are used for longitudinal analysis.

A major problem with the MIT model is that births of firms tend to be underreported for the years covered by the study. D&B makes no effort to enter historical data for each newly reported firm in its files. This means, for example, that a firm appearing on the 1975 D&B file for the first time might actually have started operations in 1972. Consequently, the MIT model treats any newly reported firm which is known to have been established before the period being studied as a new listing, rather than a birth. These new listings are excluded from any aggregate analysis of economic change during the current and previous periods. They are, however, incorporated into the base-period employment for the analysis of future periods.

A second problem is attributable to the 2- and 3-year intervals between the observations forming the model's history. A large number of firms, particularly smaller firms, are formed and go out of business within a year or two. Because the MIT studies use data gathered at intervals greater than the life cycles of these firms, any aggregate measure of employment change will understate the actual number of business births and deaths occurring during an interval.

A third problem involves D&B's treatment of branch establishments. Employment in branches is often understated or even unreported because branches do not usually receive separate credit ratings. And, because D&B does not report the year that branch offices are started, the MIT model assumes that all new branch listings are births. However, because a 1976 D&B study of 1,000 firms indicated that nondisaggregated headquarters employed only 16 percent of all employees in headquarters and branch establishments, the MIT team did not consider the nondisaggregation of branch data to be a major problem.

The D&B file also has the same general problems of other large-scale employer data bases regarding geographical and industrial coding, clerical errors, and employer reporting mistakes. Errors of this type are extremely difficult to identify or measure without the use of costly employer validation visits. The MIT team developed an elaborate editing process which attempts to account for most of these deficiencies. However, an evaluation of the results of the MIT studies should take into account the nature of the D&B file and the problems inherent in constructing a history of nearly 6 million employers.

Components of change. The extent to which an area's job pool expands or contracts over time depends on the balance between those changes increasing the job pool —business births, expansions, and inmigration—and those decreasing the job pool—business deaths, contractions, and outmigration. All of these events are occurring simultaneously in every labor market. For employment to increase over time, births, expansions, and inmigration must be greater than those components causing employment decreases.

The following tabulation summarizes the percentage employment changes resulting from the different components of employment change. Data are averaged for all States during three periods. (The MIT project also produced similar data by neighborhood, city, Standard Metropolitan Statistical Area, region, and for individual States.)

	1969–72	*1972–74*	*1974–76*
Births	5.6	5.5	6.7
Deaths	5.2	4.5	5.7
Expansions	4.7	5.3	4.4
Contractions	2.9	2.6	3.4
Inmigration	.1	.1	.1
Outmigration	.03	.05	.01

This tabulation reveals several important characteristics of the employment change process. As noted, relocation is not significant, contrary to popularly held opinions. At the city level, migration of firms becomes more important, but its net effect on total employment remains insignificant when compared to the other factors. When firms move, they usually move short distances, as from an inner city to a suburb. Most of the observed firm outmigrations during 1969–76 were from New York City and Washington, D.C., to the surrounding suburbs.

The rates of job loss from business deaths and contractions are roughly the same from year to year. The business death rates varied about 1 percent with the direction of the business cycle during the period of this study. This trend also holds at the State and city levels. The following tabulation compares the rates of employment loss and gain during the 1972–76 period for 10 metropolitan areas selected to demonstrate a variety of overall growth rates:

Area	*Percent gain*	*Percent loss*	*Overall percent change*
Houston	62.7	35.7	27.0
Charlotte	48.0	40.4	7.5
Dayton	36.4	31.4	5.1
Rochester	33.7	29.3	4.5
Boston	37.4	33.7	3.8
Baltimore	36.5	32.9	3.5
Hartford	36.6	35.5	1.1
Worcester	24.6	25.1	.5
New Haven	27.0	29.5	-2.6
Greenville	26.9	35.1	-8.4

Perhaps even more important than the relatively small range in employment loss rates is the fact that the job loss rates were generally greater in areas with the highest growth rates (that is, Houston and Charlotte). It is also interesting to note that the employment loss rate averages about 8 percent per year in most of the areas. Compounding that employment loss rate means that an area must replace about 50 percent of its jobs every 5 years to maintain its employment base.

Among the 10 metropolitan areas, the range of employment gain rates is almost 2½ times greater than the range of employment loss rates. The employment gain rates were, as might be expected, highest in the fast-growth areas. Generally, differences in employment growth rates are the result of variations in the employment gains from new firms starting up and existing firms expanding operations, rather than differences in employment losses resulting from layoffs, or from firms going out of business or migrating to other areas.

The Birch study indicates that an area must replace an average of 8 percent of its jobs every year to maintain a constant employment level. And, to expand its employment base, an area must obviously generate additional jobs. In Phoenix, for example, nonagricultural employment increased 2.9 percent, or from 613,000 to 631,000, in 1980. To attain that growth rate, the Phoenix economy actually had to generate approximately 66,700 jobs, of which almost 75 percent replaced job losses.

Firm size and location. Two-thirds of all net new jobs were created by firms with 20 employees or fewer, and about four-fifths were created by firms with 100 employees or fewer, according to the MIT model of 5.6 million businesses between 1969 and 1976. The results here are consistent with other research which found that,

Table 1. Percent of net new jobs created and percent of total employment by firm size and region, 1972–76

Region	Firm size: 20 or fewer workers	21 to 50 workers	51 to 100 workers	101 to 500 workers	More than 500 workers
Northeast:					
Percent of net jobs created	177.1	6.5	−17.4	−33.3	−32.9
Percent of total employment	21.7	12.8	10.5	23.4	31.7
North Central:					
Percent of net jobs created	67.2	12.0	5.2	3.1	12.4
Percent of total employment	20.5	12.7	10.2	22.9	33.8
South:					
Percent of net jobs created	53.5	11.2	5.5	9.4	20.4
Percent of total employment	22.0	12.6	10.0	23.1	32.3
West:					
Percent of net jobs created	59.5	11.6	6.3	9.3	13.3
Percent of total employment	23.3	13.6	10.8	22.2	30.0

Source: David Birch, *The Job Generation Process*, mimeo (MIT Program on Neighborhood and Regional Change, February 1979).

over the last 10 years, small businesses created 3 million jobs, while the 1,000 largest firms recorded virtually no net gains in employment.[5]

In 1976, small firms accounted for only about 24 percent of the private-sector employment in the country, while registering 66 percent of the employment growth. Firms with over 500 employees account for about 27 percent of employment but only 13.3 percent of job generation. Firms in the middle range generated the least employment growth. The relatively strong job generating capacity of small firms must be interpreted in relationship to the behavior of larger firms, for growth in their proportion of total employment may indicate either an increase in employment in small firms or a decrease in employment in larger firms.

Table 1 shows that another important pattern of job generation is that the slower growth areas rely more heavily on smaller businesses to generate new jobs; larger firms generate a greater percentage of net jobs in the faster growth areas. Across regional lines, small firms are the major creators of new jobs. Between 1972 and 1976, firms with 50 or fewer employees generated basically all net new jobs in the Northeast, almost 80 percent in the North Central, and about two-thirds of the new jobs in the South and West. The distribution of overall employment by size of firm was roughly the same from region to region, but there were wide disparities in the percentage of jobs generated by size class. In the Northeast, all but the small establishments were actually net job losers during 1972–76.

Age of firm. Another distinguishing characteristic of job generators is their youth. According to the MIT model, about 80 percent of the replacement jobs are created by establishments which have been operating less than 4 years. This proportion is remarkably similar among regions.

Years in business	*Percent of jobs created:* Northwest	North Central	South	West
Less than 4	75.5	80.8	80.4	80.9
5 to 8	10.4	8.4	9.9	8.8
9 to 12	7.5	6.0	5.1	5.5
13 or more	6.6	4.8	4.6	4.8

The correlation between age and employment growth was also found in a California study of additions to employer payroll during the 1976–77 period.[6] This study concluded that small firms less than a year old had much higher rates of payroll accession than other firms, accounting for 4.4 percent of total employment and more than 11 percent of the total payroll accessions.

The use of age of business as a variable to study employment growth patterns is a characteristic unique to the D&B files. No other major employer data base contains the year that a business was started. (The California study compared unemployment insurance employer records over 5 calendar quarters to identify new firms and to track their subsequent movements.)

Industry developments. As would be expected, service-producing industries generated most of the new jobs. In fact, the service sector was responsible for virtually all of the employment growth during the 1972–76 period, increasing its share of total nonfarm employment from 67.9 percent to 70.6 percent. (This employment shift to service industries is also reflected in aggregate BLS data, shown in table 2.) Manufacturing firms in the MIT model actually generated no net new jobs, although certain high-technology industries showed strong employment growth. Service industries kept employment bases rela-

Table 2. Employment of industry divisions characterized by large and by small establishments, and changes, 1974–80

Industry	Employment (in thousands): March 1980	March 1974	Change, 1974–80	Average size of establishment, 1980	Percentage of total growth	Percentage employment change
Total, private sector	73,720	63,089	10,631	17	100.0	16.9
Small-establishment industries:						
Trade	20,068	16,537	3,531	13	...	21.4
Finance, insurance, and real estate	5,090	4,107	983	13	...	23.9
Services	17,636	13,191	4,445	13	...	33.7
Construction	4,087	3,878	209	18	...	5.4
Total	...	...	9,168	12	86.2	...
Large-establishment industries:						
Manufacturing	20,722	20,027	695	62	...	3.3
Mining	990	665	325	32	...	32.8
Transportation and public utilities	5,127	4,684	443	27	...	9.5
Total	...	...	1,463	49	13.8	...

Source: U.S. Bureau of Labor Statistics.

tively stable in many areas where manufacturing industries were incurring severe losses.

Job generation is a cheaper, simpler process in the less capital-intensive service industries. There are few barriers to entry by new firms in most of this sector. Because many of the industries provide "custom designed" products, their production tends to be quite labor-intensive. The demand for business, health, and personal services has risen dramatically and is reflected in the number of new jobs.

Corporate structure. Job creation patterns are strongly affected by the corporate structure of the generating firms. Job creation resulting from the birth of new establishments increasingly reflects the branching activities of existing firms. The share of employment created by branching activity increased from approximately 50 percent to over 70 percent in all regions between 1974 and 1976. However, after having established branches, corporations are less likely to expand them. The majority of expansion growth is accounted for by independent firms, that is, firms having no branches or subsidiaries. The following tabulation shows percentage employment gains by region and type of establishment during 1974–76:

Births

	Independent	*Headquarters*	*Subsidiary*	*Branch*
Northeast	23.6	2.0	1.4	72.0
North Central .	19.9	1.4	1.1	77.6
South	25.2	1.6	1.4	71.7
West	24.0	1.7	1.1	72.2

Expansions

	Independent	*Headquarters*	*Subsidiary*	*Branch*
Northeast	58.2	21.1	6.7	14.0
North Central .	54.5	20.9	5.0	19.6
South	54.2	17.4	5.7	22.7
West	56.9	22.2	4.6	16.3

Independent firms accounted for about 20 to 25 percent of the employment gained by births of new firms and 50 to 60 percent of the employment gained by expansion of existing firms between 1974 and 1976. Overall, independent firms accounted for about one-half of the total jobs created during the 1974–1976 period. These trends in job generation by corporate structure are quite consistent from region to region but do vary by industry. Independents play a more important role in trade and services—the growing sectors of the economy. Branching tends to be more important in manufacturing industries. It is also noteworthy that more than 65 percent of all manufacturing jobs generated in the South were in branches controlled by corporations headquartered in other parts of the country, mainly the Northeast and North Central sections. By 1976, branches accounted for roughly 40 percent of all job replacement activities in the South, and an even greater share in manufacturing.

The Brookings Microdata Project

The Brookings Institution used the United States Establishment and Enterprise Microdata files, developed by the U.S. Small Business Administration, to examine the components of employment change between 1978 and 1980. These files are basically updates of the D&B files used by Birch. The major conclusions from the Brookings project:

- Between 1978 and 1980, 55 percent of the net employment growth was in establishments with fewer than 20 employees. About 78 percent of the net 1978–80 growth was in establishments with under 100 workers.
- Approximately one half of this employment growth represents branching or establishment of subsidiaries by large firms.
- Small independent firms generate new jobs at a rate about equal to their proportion of total employment.
- The proportion of employment growth accounted for by these small firms increases in regions and industries with declining employment, and decreases in regions and industries with expanding employment.

The Brookings analysis of employment growth between 1978 and 1980 both differs from and confirms some of Birch's major hypotheses regarding the behavior of small business. Both studies confirm the turbulent job generating behavior of establishments with fewer than 100 employees. However, it should be noted that the studies differ as to how to classify small branches of larger firms. The Brookings project, for the most part, excludes these establishments from the discussion of small business behavior.

Like the MIT study, the Brookings project also emphasizes the importance of examining small business behavior relative to the performance of larger firms. Finally, the Brookings project introduces a more recent data source for the study of the job generation process—the 1978 and 1980 United States Establishment and Enterprise Microdata files.

The University of California study

The study by the University of California Institute of Urban and Regional Development used individual employer records from the mandatory unemployment insurance system to analyze the job generation process. The study, directed by Michael Teitz, was based on records for a sample of just over 25,000 California employers from the 1975–79 period. The Teitz study differed from the MIT project in terms of sample size, geographic coverage, reference period, and data source. However, the results are remarkably similar to those noted by Birch.

- During 1975–79, establishments with fewer than 20 employees accounted for 56 percent of the net gains in employment. (Birch estimated that such firms contributed about two-thirds of the net job gains.)
- Firms less than 2 years old accounted for a much greater share of the net employment growth than older firms.
- More than 90 percent of the net new jobs in the young, small firms were in the nonmanufacturing sector.
- Job losses resulting from layoffs and from firms going out of business or undergoing ownership changes varied by size class. Teitz found that at least 7 percent of jobs existing in companies with fewer than 10 workers at the beginning of their second year of business had disappeared by the third year. This is in line with Birch's estimated overall job loss rate of about 8 percent per year. In general, Teitz noted an even greater degree of volatility—alternating periods of expansion and retrenchment—in the job generation process than did Birch.

The Teitz study provides some other interesting observations on the job generation process. In particular, Teitz found that, while small new firms dominated the job creating process, most of the new employment growth was concentrated in a small percentage of these firms. He also concluded that, in the California manufacturing sector, larger firms are the major generators of net new jobs.

The Teitz study is important in several respects. First, it introduces another data source—the administrative records of the unemployment insurance system—which may be used to build a history of individual employers. While these data are affected by the same general types of problems faced by users of the D&B file, Teitz's discussion and treatment of these problems should help other analysts of the unemployment insurance micro data. Secondly, the study tends to confirm some of the provocative conclusions of the Birch study regarding the nature of the job generation process. Perhaps just as importantly, Teitz's study provides more documentation on how the quality of labor market information can be improved by examining the individual employer data. Finally, Teitz introduces an interesting concept regarding the concentration of employment growth in a relatively few small firms. Further study of this characterization of the job generation process should be an important part of any effort to develop improved job generation strategies.

The future of micro research

In coming years, at least three major sources of individual establishment data will be available to the policy analyst: the D&B data base; unemployment insurance records; and the U.S. Department of Commerce's Standard Statistical Establishment List. Each source has its respective strengths and limitations for breaking down and analyzing macro labor force movements. Each of these important data bases is the byproduct of an administrative record keeping system which was not designed for time series analysis. The characteristics of the D&B file, the basis for the MIT and Brookings studies, were described above in conjunction with the discussion of the MIT project.

The second major employer micro file is administered at the State level by the State Employment Security Agencies, and at the national level by BLS. The State agencies maintain micro files of all employers covered by unemployment insurance (UI) laws. (The California UI micro file was the basis for the Teitz study.) For the first calendar quarter of the year, each State Employment Security Agency submits to BLS a tape containing the name, account number, address, SIC code, 3 months of employment data, and total quarterly wages of each UI-covered establishment. This information serves as the sampling frame for most of the major BLS surveys. The UI universe file, in contrast to the D&B file, represents an almost complete census of nonagricultural firms and is updated on an annual basis.[7]

As previously indicated, the analytical use of the D&B file currently is limited by its noncomprehensive nature, a weakness in accounting for new births, the quality of the SIC coding, and the irregular updates of employer information. The D&B file has also been subject to irregular changes in file maintenance procedures which makes the development of a longitudinal data base even more difficult. These problems are, for the most part, handled better by the UI universe file. The major weaknesses of the UI file for micro analysis involve the difficulties in maintaining series continuity, determining employer affiliations, and identifying and breaking out the employment of multi-establishment firms.

A third major employer file, the Commerce Department's Standard Statistical Establishment List (SSEL), is currently being developed from various Census Bureau, Internal Revenue Service, and Social Security Administration records. The SSEL, when complete, will include all known multi- and single-establishment employers. Most data will be updated on an annual basis. The SSEL will be particularly strong in the breakout of multi-establishment employment.

Preliminary indications are that improvements in economic analysis could be achieved by coordinating the efforts of the MIT and Brookings project, and from the continued refinement and development of the UI and SSEL files. At the moment, however, most reconciliation work is hindered by the need to maintain confidentiality of employer responses to government surveys. Legislation is currently being developed by the U.S. Department of Labor to permit sharing of statistical information among data bases under procedures which would safeguard the confidentiality of responses, when this sharing is feasible. Each file could then serve, at a minimum, as a quality control check for the other files in terms of employer location, size, and industrial activity. Eventually, the attributes of these files might be combined to build an employer data base that would significantly improve the ability to trace the process of job creation. ☐

FOOTNOTES

ACKNOWLEDGMENT: The author would like to thank Carmen Cruz of the Office of Employment Structure and Trends, Bureau of Labor Statistics, for her assistance in the preparation of this article.

[1] This legislation was passed by Congress on July 12, 1982, and is awaiting Presidential signature. See, "A Battle over R&D Funding," *The Washington Post*, Feb. 18, 1982, p. A22.

[2] Various aspects of the MIT project are discussed in David Birch, *The Job Generation Process*, mimeo (MIT Program on Neighborhood and Regional Change, February 1979); *Choosing a Place to Grow: Business Location Decisions in the 1970's*, mimeo (January 1981); *Corporate Evolution: A Micro-Based Analysis*, mimeo (January 1981); and David Birch, "Who Creates Jobs," *Public Interest*, Fall 1981, pp. 3–14.

[3] Michael B. Teitz, *Small Business and Employment Growth in California*, mimeo (Berkeley, Calif., Institute of Urban and Regional Development, University of California, March 1981).

[4] Catherine Armington and Marjorie Odle, *Sources of Employment Growth 1978–1980*, mimeo (Washington, Business Microdata Project, The Brookings Institution, March 1981).

[5] Stanley Pratt, editor of *Venture Capital Journal*, in "Striking It Rich," *Time*, Feb. 15, 1982, p. 36.

[6] State of California Employment Development Department, *Employment Service Potential, Volume I, The Dimensions of Labor Turnover* (September 1979), p. 111.

[7] BLS is initiating a comprehensive evaluation of the UI name and address files that will yield significant improvements in their utility for economic analysis.

A note on communications

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The future of work: does it belong to us or to the robots?

As the silicon chip helps chip away many factory and office functions, prospects are bright for both robots and microprocessors, but investment and other constraints seem to assure no revolutionary loss of employment

SAR A. LEVITAN AND CLIFFORD M. JOHNSON

Today, futurists are discussing the onset of a sweeping technological revolution, one which would rival or surpass the Industrial Revolution of the 19th century in importance. This envisioned social order has been given many names—"postindustrial," "technetronic," or "information" society. At the center of this flurry of interest in technological change is the microprocessor. While computerized automation has been theoretically feasible for more than a decade, large and expensive computer systems could produce cost savings only in the most massive industrial settings, and automated machinery could not be easily adapted to serve various production functions. Now, with the development of the microprocessor, these obstacles have been overcome and the potential uses of computerized machinery at the workplace have dramatically increased.

Microprocessor technology is best symbolized by the silicon chip, a miniaturized system of integrated circuits which can direct electrical current and, thereby, generate vast computational power. A silicon chip the size of one square centimeter can perform millions of multiplications per second, and has the capacity to store the texts of the Declaration of Independence, the Constitution, and a few chapters of the Federalist Papers. Technological advances are expected to result in at least a fourfold expansion of these capabilities within a decade, so that the microprocessors of the future will be extremely powerful computers on a single silicon chip or combination of chips. The reduction in size is astounding—today's hand-held programmable calculators have more computational power than the first full-scale computers built during World War II, computers which could have been "hand held" only by juggling 18,000 different vacuum tubes.

This miniaturization of computer technology is particularly important because it has been accompanied by dramatic cost reductions, making microprocessors economically competitive in a wide range of industrial applications. Once designed, silicon chips can be mass produced at a very low cost, and even further price declines are anticipated as volumes rise. As a result, a calculation which cost 80 cents to perform in the early 1950's costs less than one cent today, after adjusting for inflation. The combined reductions in size and cost of microprocessor technology have triggered renewed interest in prospects for automation and in the broader possibility of a wholesale transformation of modern society driven by these new technological capabilities.

The silicon chip is particularly important to economical automation because it provides the basis for fully integrating computer and machine. In industrial set-

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tings, the microprocessor makes possible the development of manufacturing machinery with unique adaptability. The great majority—at least 75 percent—of all manufactured goods fall into the category of shorter, lower-volume production runs, with only the most basic industries continuing to fit the mass-production stereotype. Technological advances in microelectronics, therefore, were an essential precondition to widespread automation, and the expanding use of reprogrammable machinery has triggered today's intense debate regarding the future of industrialized societies.

The potential impact of microprocessors is heightened by their seemingly endless number of applications. This new technology promises to alter not only the factory, but the office as well. Sophisticated word processors and computerized information storage and retrieval systems are becoming increasingly cost-effective, and because this new technology does not require knowledge of specialized computer languages, their growing use may raise traditionally low productivity among office workers. These office innovations are considered qualitatively different from previous office equipment which "mechanized" or "automated" routine tasks. While memory typewriters made an office worker's tasks easier, emerging computer technologies may change the means by which information is transcribed and made available to others. Again, only with the silicon chip has this decentralized use of computer technology at an affordable cost become possible.

'Robot revolution' coming

The use of the microprocessor to automate production functions is epitomized by the development of the robot. Prior to the last decade, robots were confined to the domain of children's stories and science fiction—their practical and efficient application in work settings was virtually inconceivable given the state of computer technology. The silicon chip has thrust robots from fantasy to reality, and the technology is being pursued with remarkable speed and vigor. A number of top computer companies are now considering entry into the robot market, and several large U.S. corporations have made commitments to purchase robots which are already available. The use of robots in manufacturing has nearly quadrupled between 1979 and 1981, and most analysts expect the sales curve to shoot higher during the next few years.[1] Most importantly, microprocessors seem to be in a prime position for the implementation of "learning curve pricing" strategies in which firms lower prices in anticipation of rising volumes and declining unit costs. The entry of large computer companies into the robot market could ensure this aggressive marketing stance and trigger a sharp rise in robot sales by 1990.

Today's robots bear little resemblance to the creations of screenplay writers and science fiction authors. Rather than some form of mechanical humanoid, industrial robots are characterized by mechanical arms linked to reprogrammable computers. An exact definition of a robot, as distinct from other automated machinery, eludes even industry representatives. The Robot Institute of America, an industrial trade group, stresses that it is the "reprogrammable and multifunctional" character of robots which is unique, allowing them to perform a variety of tasks.[2] And the emerging versions of robots are varied—the more extravagant include a "bureaucratic robot" which stamps signatures on letters, a robot "nurse" to assist handicapped persons in wheelchairs, a robot "janitor and guard dog" for the home, and "talking robots" which would advertise products or give job training to illiterates. Microprocessors are revolutionizing design methods for the development of new manufactured goods, and have become an integral part of nearly all modern research equipment so as to expedite lengthy data analysis.[3] Innovations such as voice-sensitive computers which can directly transcribe dictation into written text may be marketable within just a few years. It is this diversity of applications for microprocessor technology which distinguishes it from less significant innovations, and which has led futurists to predict a societal transformation "comparable with the agricultural revolution that began about 10,000 years ago, and with the industrial revolution."[4]

How far . . .

There is little consensus as to where the "robot revolution" is heading and how far it will go. The technology itself may be refined to such an extent that most factory work could be carried out by robots and automated machinery. For example, a study conducted at Carnegie-Mellon University asserts that the current generation of robots has the technical capability to perform nearly 7 million existing factory jobs—one-third of all manufacturing employment—and that sometime after 1990, it will become technically possible to replace all manufacturing operatives in the automotive, electrical-equipment, machinery, and fabricated-metals industries.[5] Yet these theoretical estimates of the potential for automation, which reach as high as 65 to 75 percent of the factory work force, do not reflect the rate at which the new technology will actually be introduced to the workplace. The pace of innovation will depend on the relative costs of labor and computerized technologies, as well as on broader levels of supply and demand for goods and services. Predictions of this nature are infinitely more difficult than abstract assessments of future technological capabilities.

The automobile industry offers an interesting case study, because it is probably the first manufacturing industry to aggressively pursue the use of robots in automated processes. The push toward automation in the auto industry is a response to both rising labor costs and growing concerns for quality control and competitiveness in international markets. Auto manufacturers already find it possible to operate robots for $6 per hour, well below the $20 per hour required for the pay and benefits of a skilled worker in 1981.[6] General Motors, aware of the growing use of robots by Japanese auto makers, predicts that by 1987, 90 percent of all its new capital investments will be in computer-controlled machines.[7] A 1980 survey conducted by the American Society of Manufacturing Engineers predicted that robots will replace 20 percent of existing jobs in the auto industry by 1985, and that 50 percent of automobile assembly will be done by automated machines (including robots) by 1995.[8] Even the United Auto Workers anticipates a 20-percent decline in membership by 1990 and has successfully obtained advance notice and retraining rights from auto manufacturers in a growing effort to gain protection from sweeping automation. Yet, few of these estimates include any consideration of the extent to which capital shortages confronting robot manufacturers and purchasers may limit the speed with which the new technology is adopted.

Projections of the impact of microprocessors on office employment are even more problematic, with analysts more frequently predicting the number of office jobs "affected" rather than eliminated by automation. The Carnegie-Mellon study argued that 38 million of 50 million existing white-collar jobs would eventually be affected by automation, while a vice president for strategic planning for Xerox Corp. offered the more conservative guess of 20 to 30 million jobs affected by 1990.[9] There is general agreement that office technologies will be changing rapidly, but little indication of whether the result will be reduced office employment, shifts in future employment growth, or simply higher levels of productivity in white-collar settings.

A 1982 study prepared for the International Labour Office found that microelectronic technology has not caused widespread displacement of office workers, but perhaps only because of the impact of poor economic conditions on the rate of diffusion of the new technology in office settings. Selected case studies of the banking and insurance industries suggested that new job opportunities were being created, but the skills made redundant by new technologies were generally inappropriate for those emerging opportunities. The report stressed that this trend poses special threats to employment prospects for women, and called for additional education and training efforts to close the "skill gap" caused by the use of microprocessors in office jobs.[10]

Perhaps the greatest fears that automation will lead to widespread unemployment have been voiced, not in the United States, but in Western Europe. For example, two British authors have predicted nothing short of the collapse of work as a social institution in an era of microprocessors:[11]

> It is impossible to overdramatize the forthcoming crisis as it potentially strikes a blow at the very core of industrialized societies—the work ethic. We have based our social structures on this ethic and now it would appear that it is to become redundant along with millions of other people.

In West Germany, studies of the impact of automation on future employment levels commissioned by the Bonn government projected that the number of jobs in 1990 will at best be marginally above 1977 levels—a pessimistic view in light of anticipated population growth. The issue of technologically induced unemployment increasingly is capturing the attention of West European leaders, and unions in Italy, Germany, and elsewhere are responding with demands for shorter workweeks to protect employment levels. Perennial fears that machines would replace workers have never been fulfilled, but European futurists insist that it will be different this time.

. . . and how fast?

While the impact of automation in the past has been offset by the emergence of new industries and by growth in the service sector of the economy, these avenues for employment growth may indeed be less open in an era of microprocessors. The electronics industry, which supports this computerized technology, certainly will experience rapid growth in the coming decade, but a 1979 survey of the world electronics industry prepared for the Organization for Economic Cooperation and Development revealed that the internal use of its own technology will keep employment growth in this sector to a minimum.[12] It is this "reproductive" potential of computerized technology—the prospect of robots building robots—which challenges traditional patterns of employment growth through new industries. And to the extent that the microprocessor will affect service as well as manufacturing industries, even the recent trend of expanding service employment may fail to provide jobs.

In spite of these relatively unique characteristics of microprocessor applications, predictions of immediate and massive job losses tend to ignore the market forces which slow the pace of technological change. As stressed in recent research by the Bureau of Labor Statistics, many factors limit the speed of diffusion of technological change and thereby mitigate possible employment implications. The size of required investment, the rate of capacity utilization and the institutional arrangements within industries all can act as "economic governors" which slow the adoption of automated technologies.[13]

Virtually all capital-intensive industries have a massive investment in existing plant facilities, and they cannot afford to squander these resources through the wholesale replacement of working machinery. More importantly, the financial constraints on capital formation necessarily limit the rate at which new technologies are introduced. In this context, Joseph Engleberger, president of Unimation, Inc. (the Nation's largest robot manufacturer), has dismissed predictions of galloping automation, noting that even the replacement of 5 percent of all blue-collar workers in Western industrialized nations would require investments totaling $3 billion in each of the next 40 years.[14] While microprocessor technology may be promising in its flexibility and potential efficiency, industries must be able to afford the new acquisitions in order to use them.

A less tangible but perhaps equally important force limiting the expansion of computer technology lies in the attitudes of both workers and consumers. While a computer may be able to diagnose medical problems, its bedside manner may be less than comforting. Similarly, word processors and telephone answering systems may alter clerical roles, but most executives will not want to forgo the convenience offered by their personal secretaries. People can hear the best music in the comfort of their homes, but flock to concert halls to hear lesser performances. Even on the assembly line, where robots may be perfectly suited for production processes, the aversion of managers and workers to such unfamiliar companions may hamper their smooth and rapid assimilation at the workplace. These psychological barriers cannot be factored into equations of economic efficiency, but they are likely to slow the pace of technological change nonetheless.

Will workers become obsolete?

The picture which emerges when the functioning of capital markets and work organizations are considered is one of evolutionary rather than revolutionary change. With annual sales of robots well below 10,000 in a labor force of more than 100 million, it will be some time before computerized technologies make a major dent in aggregate employment levels. This perspective is emphasized by Robotics International, a professional group which polled 100 users and manufacturers of robots. Based on the responses, the group concluded that robots are likely to replace 440,000 rather than a million workers by 1990, and that all but 5 percent of the displaced workers would be retrained rather than dismissed.[15] The relative lack of union concern in the United States over aggregate job losses through automation also stems from this belief that the pace of innovation has been exaggerated. William Winpisinger, president of the International Association of Machinists, has argued that the replacement of human skills with computerized machinery will occur slowly and that a shortage of skilled workers will remain our most pressing manpower problem.[16] No doubt, unions will continue to seek guarantees of job security in some industries, and collective bargaining may gradually extend to include management investment decisions.

In the more distant future, no one can be sure where new employment growth will occur. Expectations of a workless society still linger; as described in one forecast:[17]

> Earning a living may no longer be a necessity but a privilege; services may have to be protected from automation, and given certain social status; leisure time activities may have to be invented in order to give new meaning to a mode of life that may have become economically useless for a majority of the populace.

The literature in recent decades has been replete with speculations on how people would cope with the loss of meaningful work roles, or how society would allocate and distribute wealth in the absence of strong ties between work and income.[18] Even for those who reject such forebodings, the belief in continued employment growth admittedly contains as much faith as foresight.

Still, there seems little likelihood that the worker will become obsolete in the foreseeable future. In one sense, past waves of automation have created dislocations, but it has been distributed throughout the labor force in the form of benefits and social progress—shorter workweeks, more vacation time, longer training and education, earlier retirement, child labor laws, and welfare and unemployment payments. We can expect this trend to continue, particularly as labor seeks assurances of job security. Assuming a healthy rate of economic growth during a period of innovation and increasing automation, it is also likely that levels of aggregate demand will support the emergence of new goods and services. Rising expectations alone will cause Americans to translate productivity gains into higher standards of living instead of less work, a pattern which has held for centuries. The period of adjustment which lies ahead may not be painless, but it seems that work is here to stay. ☐

FOOTNOTES

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[18] James S. Albus, *People's Capitalism: The Economics of the Robot Revolution* (Md., New World Books, 1976); and Colin Hines and Graham Searle, *Automatic Unemployment* (London, Earth Resources Research Ltd., 1979).

Smoothing the transition

Union resistance to labor-saving technical change within an industry can often be moderated by careful management of change, which will minimize its effect in creating unemployment. This is much more difficult in the case of interindustry effects, since an enterprise in one industry is unlikely to be concerned with the effects of its decisions on employment in another industry. Technical change often produces losses for investors who have invested in equipment and skills that are made obsolete. Where the investment is embodied in people rather than in machines, the human problems it causes are more severe and less tractable. Those outside the union movement cannot condone a position that blocks technical progress, but they can approve one that uses some of the fruits of progress to give reasonable compensation to workers for the loss of their livelihood.

—ALBERT REES
The Economics of Work and Pay
(New York, Harper & Row, Publishers,
Inc., 1973), p. 137.

Helping labor and management see and solve problems

A mediator can help improve an unhealthy labor-management relationship by recognizing the symptoms, making an accurate diagnosis, and carefully prescribing appropriate remedies

JOHN R. STEPP, ROBERT P. BAKER,
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The Federal Mediation and Conciliation Service has recognized that the effective promotion of labor-management peace requires more than just an "eleventh-hour" appearance at the bargaining table by its mediators. Like most other professional organizations that respond to human emergencies, the service has learned that by blending prevention with treatment its resources are used more efficiently.

The preventive mediation function requires the mediator to be alert to symptoms of untoward labor-management relationships, to diagnose the problems accurately, and to prescribe effective remedies.[1] The nature and severity of the symptoms must be recognized and traced to their source; the remedy must be suited to the location of the symptoms in the labor or management hierarchy, or both; and the parties must be persuaded that the cure is preferable to the disease and is clearly in their own self-interests.

This article extracts from accumulated experience those principles on which a prescriptive model for improving labor-management relationships can be built.[2] This empirical model is erected on the perceptions and experiences of the authors, all of whom are or have been Federal mediators.[3]

Recognizing the symptoms

Mediators are uniquely positioned to detect the danger signals emanating from a poor labor-mangement relationship. When involved at the collective bargaining table in dispute mediation, the mediator can make a reasoned judgment as to the nature of the relationship behind the conflict. This is done by examining the issues, assessing each side's internal relationships, and testing and verifying these impressions through indepth private discussions with both parties.

Numerous issues, especially noneconomic or language items, are often symptomatic of underlying problems which are being addressed in a circuitous manner. When this is the case, a contractual agreement may be no more than a bandage on a festering wound. The underlying problems have neither been identified nor addressed and certainly have not been resolved.

Every mediator, at one time or another, has entered a negotiation shortly before a strike deadline, only to be confronted with many unresolved issues. In private discussions with the moving party, usually the union committee, the mediator learns that these issues are an attempt to send the other party "a message." The message is that there is enormous dissatisfaction with "busi-

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ness as usual" on the shop floor and that problems are not getting resolved. Resentment is bubbling over onto the bargaining table in the form of contract issues. The bargaining table is an ill-equipped forum for the effective resolution of these underlying problems. During crisis negotiations it is very difficult to negotiate an improvement in attitudes or a better labor-management relationship.

Faced with a rapidly approaching deadline, the best the mediator can hope for is that some issues can be resolved through catharsis and others quietly dropped because they are not strike-related. If a tentative agreement is reached, the mediator's relief may be brief because the membership's frustrations may surface again in their refusing to ratify the agreement. Even with ratification, there remains a strong suspicion that all is not well and that the administration of this contract and the negotiation of the next are likely to be fraught with difficulty. This perception is often shared by negotiators, too.

The mediator may also become aware of a deteriorating labor-management relationship through ways other than his or her personal involvement in contract negotiations. Through such professional and community organizations as the Industrial Relations Research Association, the mediator can learn of problems. Also, in monitoring dispute cases, he or she has daily contact with representatives of labor and management; through casual conversation, there is much opportunity to learn of labor relations problems in a particular plant or location.

Similarly, relationships plagued by frequent, long, or bitter strikes; wildcat strikes; high grievance levels; numerous arbitrations; or other obvious signs such as job losses in a declining business enterprise, are symptoms which will catch the mediator's attention. Once alerted, he or she can seek confirmation from the labor and management representatives at the site.

Another means of mediator awareness is through communiqués from the affected parties. Because the Federal Mediation and Conciliation Service is annually involved in more than 1,000 technical assistance endeavors, the awareness of the availability of this service among labor-management practitioners assures numerous requests. When contacted, the mediator will begin exploratory meetings with the parties to determine the nature, location in the organization, and extent of the problems.

Diagnosing the problem

Having detected danger signals, the mediator must guide both parties through a joint analysis of the problems in order to determine their seriousness and exact location. Until this diagnosis is completed, no remedy can be prescribed. The character of a labor-management relationship may be viewed along a simple continuum consisting of three benchmarks: *conflict, detente*, and *accommodation*.[4]

An employer at the *conflict* end of the continuum never really accepts the union: " . . . he does not yield to the union even a narrow, restricted scope until he literally has to; and he looks for the first opportunity to get rid of the intruder. His acceptance of joint dealings is an 'imposed acceptance,' imposed by law and by union power."[5]

Under *detente*, the midpoint of the continuum, each side accepts the other's institutional legitimacy but exercises its relative strength to obtain the best deal. Each adopts a "win some, lose some" approach. They fight, but the conflict is held within accepted limits; there is a conscious effort to avoid pain and serious injury to one another. Parties at the *accommodation* end of this scale strive to reduce the level of contention. When differences do occur, they are processed with minimum emotion through agreed-upon procedures with equity being a realistic and desired goal for both. "They have proved themselves willing to compromise whenever possible, to conciliate whenever necessary, and to tolerate at all times."[6]

The three benchmarks can be used by the mediator to determine the severity and types of problems the parties have. Relationships characterized by *conflict* will have the most serious problems, reflecting distrust, hostility, and suspicion; those characterized by *accommodation* will have the least severe problems, arising from human failures in communications, consistency, and concern for the points of view of others.

The next segment of the model directs the mediator's diagnosis to a determination of the location of the problem within the respective organization. One inhibitor to accurate diagnosis is the diffusion of authority in complex, multilayered, and interdependent labor-management organizational structures. A systematic examination of the various intraorganizational dimensions and their interrelationships is needed to locate and address the source of the problem. Because the structures of most labor organizations are reactive to and thus closely parallel the management structure to which they relate, more attention will be given to the structure of management in labor relations matters.

Management can generally be regarded as conducting labor relations on three levels. (On occasion these levels may be extended or compressed.) The top level is one of decisionmaking, usually personified by either a vice president of labor relations or a labor relations director. This level formulates, delivers, and implements corporate policy on its own initiative or as an operating arm of higher-level management policymakers. The union counterpart of this level is usually an international representative.

The mid-level can be characterized as one of implementation for labor relations decisions and policies. Within management, this level would generally be staffed by either a plant manager or a department head who formulates very little policy but has, instead, the important responsibility of supervising and coordinating the implementation of policies established at the top level. Business agent or local president are usually the titles of union officials at this level.

The lowest management level is populated by first-line supervisors. They face the difficult task of confronting the real world armed only with the policies supplied and precedents established. Here are discovered both the flaws and strengths of overall policy. The union counterpart at this level is the steward.

A thorough examination of the parties' relationship requires a look at the relationships between levels within each structure, as well as across the table, which symbolizes the classic area of contention. Given three existing levels of labor-management interaction within a bargaining unit, each level having 1 of 3 possible characters, a diagnosis may theoretically yield 27 possibilities.[7]

In this article, we will not attempt to deal with 27 different variations, several of which have only a theoretical existence and are not plausible outcomes. For example, this would be true when accommodation existed at the supervisor/steward level, but at all higher levels the parties were locked in conflict. Accommodation could not realistically exist between foreman and steward, except momentarily, if conflict were the prevalent mode between plant manager and business agent. Two corporals in opposing armies cannot wage peace while their generals are waging war, lest they risk dismissal for treasonous behavior.[8] More importantly, to examine all 27 possibilities would emphasize detail over the more generic and fundamental concepts.

Prescribing a remedy

Having diagnosed the relationship and the possible location of the problem, the model's remaining segment concerns the prescribing of remedies. Labor-management relations improvement remedies are few—there are presently three primary items: Relationships by Objectives programs, labor-management committees, and joint training programs. Variations exist of each, especially the latter two.

Relationship by objectives. In the Relationships by Objectives program, mediators provide the expertise for guiding labor and management toward basic changes in their relationship.[9] Both are brought together by mediators to analyze their problems, to decide what their common objectives should be, and to reach agreement on goal implementation. Since the program was introduced by the Federal Mediation and Conciliation Service (FMCS) in 1975, 100 Relationships by Objectives projects have been completed in some of the most difficult labor relations situations in American industry.

Currently, the program is being used almost exclusively in situations following protracted strikes or where there are volatile labor-management histories. The criteria established by the FMCS as a prerequisite for conducting such programs are that both parties must be sufficiently concerned about their divisive relationship and committed at all levels to do something about it. In return, the FMCS commits itself to assist the parties in rebuilding their relationship and thus to reduce the prospects of strikes in subsequent negotiations. (A Relationships by Objectives program may result in the parties identifying a need for a labor-management committee or for training.)

Labor-management committees. In recent years, more than 300 labor-management committees have been formed annually by employers and unions with the assistance of FMCS mediators. The structure and goals of labor-management committees vary greatly, but most share the essential need for representatives of labor and management to join together and talk about mutual problems. These committees complement the traditional collective bargaining relationship. They are an implicit recognition that the parties have much in common and that their relationship need not be totally adversarial. Through effective committees, joint problem-solving can take place which strengthens mutual credibility and tends to improve relationships.

Joint training programs. Successful labor-management relations are less a function of the quality of negotiations than of the day-to-day implementation and administration of the labor agreement. The majority of this work is done by the first-line supervisor and the union steward. If their performance is below standard, relations suffer. Consequently, most of FMCS' preventive activities have been directed toward this group.

Supervisor-steward training does have considerable value in the development of a work atmosphere which is conducive to labor peace and the quick and effective resolution of labor-related problems. Training sessions, which use a variety of instructional techniques and focus on subjects such as communications, leadership, and grievance handling, are a vehicle whereby adversaries can set aside their stereotyped images and view one another in a nonthreatening light, thus seeing, perhaps for the first time, their commonalities. The FMCS conducts 400 to 500 such joint training programs annually.

These training programs are tailored to the perceived needs of the supervisor-steward audience, and are structured to encourage class participation. Using a combination of lecture, audio-visual materials, and workbooks for the participants, the mediator leads discussions into such areas as:

- understanding the supervisor-steward relationship;
- making the supervisor-steward relationship work;
- providing effective leadership; and
- handling problem situations.

These programs are not intended to provide instant solutions to complex problems. They are designed to enable the participant, working with others in the group and under the guidance of a mediator, to come up with his/her own insights which, it is hoped, will be wisely applied over time to improve their relations.

Setting priorities

In selecting a remedy, order is important. One must focus first at the highest level in need of attention. Higher-order problems must be resolved or neutralized before those of a lower level are addressed.

If the labor-management problems are severe, and are located in the top or middle levels of the respective organizations, then the Relationships by Objective program should be considered as a possible remedy. Through the program, the parties have an opportunity to recast their relationship or to start anew, provided there is mutual acknowledgment of serious problems impairing the relationship, and genuine commitment to change.

Once the program has been successfully applied, *detente*, and rarely, *accommodation*, would be expected in lieu of *conflict*. Assuming the most likely, *detente*, the parties are now in a position to build together a better relationship. To assure further positive momentum and continued improvement, a labor-management committee is usually needed.

If nurtured and sustained, labor-management committees have demonstrated their capability for improving labor relations. The most visible level of improvement is likely to be between the top plant management and the business agent or local union president. If the committee is really working, it will also affect the plant floor. Consequently, through effective applications of such committees, all mid-level outcomes have the potential of being elevated to the *accommodation* mode.

In many cases involving labor-management committees, a problem that is often identified as an impediment to a good relationship is the inability of stewards or supervisors, or both, to dispose of grievances successfully. This can generally be attributed to some combination of three factors: (1) an unwillingness to reach an agreement—a preference for sustaining the conflict, (2) the absence of perceived authority to settle the problem, or (3) the lack of knowledge or technical ability to handle grievances. Each of these causes can be successfully tackled by the labor-management committee. The first two can be addressed through separate consultations within each party, so that agents at the lower level realize their superiors are expecting most problems to be resolved at that level.

If the remaining problem is simply a technical inability to meet labor relations responsibilities, the most effective antidote is training. Through joint training of supervisors and stewards, the groundwork may be laid for a better relationship. Effective joint training usually emphasizes the building of problem-solving and interpersonal skills, and better understanding of respective roles and the benefits of working together.

Equipped with an improved understanding of their roles and the prerequisite skills for doing their jobs, and encouraged by support from the top and middle levels, discord and discontentment at the lower level can be converted to *accommodation*.

Third party audits

The model that we have evolved consists of: three organizational levels within labor and management; three characterizations of the relationship which determine the type and severity of the problem; and three remedial approaches. However, it has not been suggested in any detail how to analyze a labor-management problem when applying the model; rather we have spoken of the mediator recognizing danger signals and observing issues and relationships, all of which implies an intuitive, ill-defined, and artistic process. This method usually provides a sufficiently accurate diagnosis in cases in which the mediator knows the parties well, or the problems are relatively obvious, or both; but in other situations a more rigorous approach is needed to apply the model. For this purpose, we will describe a diagnostic process used in organizational development and human resources development (training needs assessment).[10] Discussion will center on joint training at the supervisor/steward level, but with minor modifications, the process could be used at other levels or when other remedies are proposed.

The diagnostic procedure, developed by Geary Rummler, focuses on a "human performance" audit.[11] For him, human performance is composed of: (1) the job situation or occasion to perform; (2) the performer; (3) the behavior (action or decisions) that is to occur; and (4) the consequences of that behavior to the performer.[12] The advantage of using a performance audit is that it forces the specific source of the undesirable behavior to be identified.

A second feature of Rummler's audit is the determination of the economic consequence of poor performance. In other words, having determined by the audit model that undesirable performance is a result of a lack of feedback to a supervisor about his or her work, for example, the question is asked: does it *really* make any difference or enough difference to require change? The result of this questioning will be to consider first those performance problems which are most economically important to the organization.

A very sophisticated or extremely simple audit can be used, depending upon the amount of time available, the complexity of the organization, and the functions being audited. This audit of performance can be used on all three levels of labor relations concurrently, but we will apply it only to the lower level.

The basic components of the Rummler approach can be retained in a streamlined audit by using this series of questions to identify sources of the problems and to analyze them:

I. General lead-in questions
   1. How do you know you have a problem?
   2. How will you know when the problem is solved?
   3. How long has this been a problem?
   4. How general is the problem?

II. Questions on the job
   1. What is the desired performance?
   2. What are the job standards?
   3. Who says that these are the standards?
   4. Does everybody agree on these standards?

III. Questions on the performer
   1. What are the specific differences between actual and expected performance?
   2. Has anyone ever performed as expected?
   3. Who?
   4. When?
   5. How many individuals are now performing below standard?

IV. Questions on behavior
   1. Did the steward or first-line supervisor ever perform properly?
   2. Could they perform properly if their lives depended upon it?
   3. If they could perform properly, would they?

V. Questions on the consequences of performance
   1. Does the steward or first-line supervisor whose performance is below standard know:
      a. What is expected of him or her?
      b. What he or she is not performing correctly and exactly how far he or she is from expected performance?
      c. How to perform correctly?
      d. When to perform?

VI. Questions on feedback
   1. What positive or negative consequences, or both, of performing correctly or incorrectly can the first-line supervisor or steward expect from:
      a. Higher ranking officials within the company or organization?
      b. Subordinates?
      c. Associates at the same level?

VII. Questions on economic costs and priorities
   1. What does it cost the employer or union not to remedy the performance problem?
   2. What is the priority on remedying any performance problem?

A few examples will illustrate how these questions produce relevant information on performance and economic priorities:

- Under II, questions 1, 2, and 3 could lead one to discover that the union policy is unclear on whether a steward is expected to anticipate and solve problems before they become formal grievances.
- Under III, question 5 could disclose that first-line supervisors in only 2 departments in 20 have performance problems.
- Under IV, questions 2 and 3 could reveal that motivation and interest are the source of the performance problem, not knowledge or skill.
- Under V, question 1 could divulge that the first-line supervisor is aware of only one-third of the tasks expected of him or her.
- Under VI, question 1 might reveal that the steward gets no positive feedback on his or her performance.
- Under VII, question 1 might show that the failure to properly investigate a grievance, prior to committing it to writing, doubled the length of time required to process it through the first two steps of the grievance procedure.

When the audit is completed, the mediator will have a complete list of the performance problems in the area under study, which will include an identification of the sources of the problems, and economic priorities based on the cost of the problem to the organization.

Following an analysis of this list, the mediator could act as an adviser to labor and management in determining the appropriate remedy. Some problems are more susceptible to a training solution, others to a labor-management committee or a Relationships by Objectives program, and some will require structural and policy changes. In each instance, the mediator will work with the parties to resolve the performance problem and improve their relationship.

Conclusions

Before any labor-management relationship can be improved, the parties to that relationship must both be dissatisfied with the status quo and have before them some blueprint which, if followed, has a reasonable chance of succeeding.[13] [14] In many cases, labor-management relationships are operating at a suboptimal level. This can happen for many reasons; for example, one or both sides prefer it that way, they are not prepared to incur the political or economic costs they attach to improvement, they do not know how to gain the necessary credibility to move jointly forward, or they simply do not know what to do.

Often a trusted third party can diplomatically allow the parties to focus on shortcomings in a relationship, by minimizing political and economic costs of change, promoting trust and cooperation, and assisting both sides in developing a roadmap which, if followed, should lead to a positive, constructive relationship. ☐

FOOTNOTES

[1] Section 203 (A) of the Taft-Hartley Act states: "It shall be the duty of the Service, in order to prevent or minimize interruptions, of the free flow of commerce growing out of labor disputes, to assist parties to labor disputes in industries affecting commerce to settle such disputes through conciliation and mediation."

During the discussion on the floor of the Senate of Bill S.1126 (subsequently compromised to become the Taft-Hartley Law), Senator Irving Ives of New York made the statement: "A great lack at the present moment in the field of mediation is measures by which we may prevent industrial strife as well as cure it after it has begun. That, of course, is contemplated under the new title." (*Congressional Report*, p. 4,590, 5–6–47.)

[2] It is interesting to note that the Federal Mediation and Conciliation Service Preventive Mediation function started during the same period (late 1940's) as the early applications of contemporary behavioral science to organization and management. But there is little evidence that the service benefited in any systematic way from developments within behavioral science until the 1970's. The introduction of the Relationships by Objectives program in 1975 (see discussion on p. 17 of this article) was influenced by the work of Blake and Mouton, particularly Robert R. Blake, Herbert A. Shepard, and Jane S. Mouton, *Managing Intergroup Conflict in Industry* (Houston, Gulf Publishing Co., 1964), p. 210; and Robert R. Blake, Jane S. Mouton, and Richard L. Sloma, "The Union-Management Intergroup Laboratory: Strategy for Resolving Intergroup Conflict," in Warner Burk and Harvey A. Hornatein, eds., *The Social Technology of Organization Development* (Fairfax, Va., NTL Learning Resources Corporation, 1972), pp. 101–26.

This lack of behavioral science influence on preventive mediation during these 30 years is understandable because Federal Mediation and Conciliation Service mediators are pragmatic individuals caught up in practicing their art; they are not inclined to seek help or guidance from theorists and academics. Moreover, even the behavioral scientist makes limited claims for the application of his work to the practitioner. See George Strauss and others, eds., *Organizational Behavior: Research and Issues* (Madison, Wis., Industrial Relations Research Association Series, 1974), p. 2, which quotes with approval Harold L. Wilensky, writing on the same subject in 1957: "Not everything done by the social scientist can or should help the practitioner . . . . the social scientist's job is basically different from the executive's job . . . . much of what he comes up with is of limited use to the practitioner."

Writing 5 years later on the question, "Can Social Psychology Contribute to Industrial Relations?" Strauss said, "From 1960 on, psychological contributions to industrial relations were almost nonexistent . . . " See Geoffrey M. Stephenson and Christopher J. Brotherton, eds., *Industrial Relations: A Social Psychological Approach* (Chicheston, England, John Wiley & Sons, 1979), p. 371.

[3] The views expressed do not necessarily reflect those of the Federal Mediation and Conciliaton Service.

[4] A similar continuum of labor-management relations consisting of armed truce, working harmony, and union-management cooperation was proposed in Frederick H. Harbison and John R. Coleman, *Goals and Strategy in Collective Bargaining* (New York, Harper & Brothers, Publishers, 1951), p. 19.

Another more complex model for analyzing labor-management relations is described in Leon Meggison and C. Ray Gullett, "A Predictive Model of Union-Management Conflict," *Personnel Journal*, June 1970, pp. 495–503.

[5] See Benjamin M. Selekman, Sylvia K. Selekman, and Stephen H. Fuller, *Problems in Labor Relations* (New York, McGraw-Hill Book Co., 1950), p. 7.

[6] "Problems," p. 8.

[7] $D=L^G$ where D is the number of diagnostic outcomes, L is the number of levels in the organization (3), and G is the number of possible characterizations of the relationship between the parties (3). Hence, $D=3^3$ or 27.

[8] However, it should be noted that a very bad relationship (conflict) may exist at a lower level even though there is a very good one at the next higher level (accommodation). Two generals can be pursuing peace while the battle rages.

[9] For more background on Relationships by Objectives program, see John J. Popular, "Labor-Management Relations: U.S. Mediators Try to Build Common Objectives," *World of Work Report I*, September 1976, pp. 1–3; Thomas A. Kochan, *Collective Bargaining and Industrial Relations* (Homewood, Ill., Richard D. Irwin, Inc., 1980); and Anthony V. Sinicropi, David A. Gray, and Paula Ann Hughes, *Evaluation of the Federal Mediation and Conciliation Service's Technical Assistance Program in Labor-Management Relationships by Objectives (RBO)*, unpublished, Federal Mediation and Conciliation Service, 1978.

[10] In the field or in organizational developments there are a number of diagnostic processes for searching out and assessing organizational problems. See for example: Robert R. Blake and Jane S. Mouton, *Corporate Excellence Diagnosis: The Phase 6 Instrument* (Austin, Tex., Scientific Methods, 1968); J. Richard Hackman and Greg R. Oldhan, "Development of the Job Diagnosis Survey," *Journal of Applied Psychology*, 1975, vol. 60, pp. 159–70; Ralph H. Kilmann and Kenneth W. Thomas, "Four Perspectives on Conflict Management: An Attributional Framework for Organizing Descriptive and Normative Theory," *Academy of Management Review*, 1978; vol. 3, pp. 59–68; John P. Kotter, *Organization Dynamics: Diagnosis and Intervention* (Reading, Mass., Addison-Wesley, 1978); Paul R. Lawrence and Jay W. Lorsch, *Developing Organizations: Diagnosis and Action* (Reading, Mass., Addison-Wesley, 1969); Harry Levinson, *Organizational Diagnosis* (Cambridge, Mass., Harvard University Press, 1972); and Rensis Likert, *The Human Organization: Its Management and Value* (New York, McGraw-Hill Book Co., 1967).

[11] Geary A. Rummler, "The Performance Audit," in Robert L. Craig, ed., *Training and Development Handbook* (New York, McGraw-Hill Book Co., 1976, 2d ed.).

[12] Rummler, "The Performance Audit."

[13] Dissatisfaction with the status quo is found in organizational development efforts: "The fundamental reason some crisis or pressure seems to be so important in setting the stage for change is that it creates a state of readiness and motivation to change. Kurt Lewin called this the 'unfreezing stage' at which old beliefs, values, and behaviors lose strength in the face of data that disconfirm the manager's (unionist's) view of his (their) organization's effectiveness." Michael Beer, *Organization Change and Development: A Systems View* (Santa Monica, Calif., Goodyear Publishing Co., 1980), p. 48.

[14] The need for a plan in order to facilitate change is also found in the Organizational Development literature: "Successful change efforts require new models for looking at organizational problems and/or new ideas for structuring or managing the organization. New models may come in the form of a new organizational design, accounting system, planning systems, or personnel policy." (See Beer, "Organizational Change," p. 50.)

Millwork industry shows slow growth in productivity

During 1958–80, output per hour advanced at half the rate of growth for all manufacturing industries, reflecting unstable demand and low capital investment

JACK VEIGLE AND HORST BRAND

Labor productivity in the millwork industry rose at an average annual rate of 1.4 percent from 1958 to 1980,[1] a modest advance when compared with total manufacturing. Over this period, output in millwork increased at a rate of 2.7 percent annually and employee hours at 1.3 percent. The productivity rise partly reflected low growth in capital investment, particularly over the past decade, and evidently slow diffusion of modernized production technologies. These factors, combined with instability in demand for the industry's products, retarded productivity. Industry demand depends mostly upon residential construction, where fluctuations have been frequent and substantial.

The overall rate of increase in the productivity of the millwork industry reflects basically two periods in each of which the productivity movements differed significantly. Between 1958 and 1972, productivity rose at an average annual rate of 2.6 percent, rising 42 percent by 1972, to a high for the period (107.2 on a 1977=100 basis). However, from 1972 to 1980, productivity declined at a rate of 1.4 percent a year, or by 13 percent. By contrast, productivity in the private nonfarm business economy continued to advance, although at a slower rate than earlier. The following tabulation shows the pertinent comparisons (average annual rates, in percent):

	1958–80	*1958–72*	*1972–80*
Millwork industry	1.4	2.6	-1.4
Private nonfarm business	1.8	2.1	0.9
Manufacturing	2.8	3.1	1.8

Year-to-year changes in millwork productivity were quite volatile, ranging from a 12-percent rise (in 1967) to a 9-percent drop (in 1974). Productivity declined in 8 of the 22 years surveyed. In such years, output either fell more than employee hours or rose less. In 10 of the years of rising productivity, output gains exceeded employee hour increases. But in the other years of rising productivity, productivity improvements were associated with output declines being smaller than employee hour reductions.

Output and demand

The millwork industry manufactures wood window units, including sashes; window frames; doors and door frames; moldings; and stairs. In 1977, one-quarter of the industry's output consisted of window units and related items; and close to two-fifths of doors, including garage doors. Moldings represented another fifth of output. Approximately three-fourths of the industry's output was used in residential housing, including additions and alterations; small amounts of output were used in commercial and educational buildings, prefabricated wooden buildings, and in trailers and other transportation equipment. Millwork output is thus linked mainly to residential construction markets.

Output of millwork products rose at an average annual rate of 2.7 percent between 1958 and 1980, about in line with the trend in the deflated value of new residential housing units plus additions and alterations. Output movements during the period were characterized by differences in average annual rates of change between 1958–72 and 1972–80, which were similar to the variations in productivity movements noted above. During

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1958–72, output rose 3.6 percent annually, in 1972–80 it declined 0.9 percent a year. Millwork output fluctuated generally less on a year-to-year basis than residential building activity. The lesser amplitude of millwork output fluctuations may partially relate to inventorying practices of jobbers through whom much of industry sales are conducted.

Millwork output was strengthened, particularly during the 1960's, by increases in the square foot area of single-unit housing—indicating more rooms as well as larger room size, hence more doors, windows, and moldings. During the study period, square foot area per housing unit rose more than 20 percent.[2] While the number of 1 to 3 room housing units being added to the housing stock declined between the 1960's and 1970's, additions to 4- and 6-room units grew strongly; the increment in 5-room units remained roughly the same. Units with 7 rooms or more recorded particularly strong increases during the 1970's. However, multi-unit dwellings gained in relative importance during the early and mid-1970's, when apartment construction rose to 37 percent of all private housing starts, up from 33 percent in the 1960's. Because only a relatively small proportion of millwork output is used in such construction, the sharp increase in multi-unit starts probably offset somewhat the demand from single-unit residential starts. (For example, more than 80 percent of window units installed in apartment buildings are of aluminum, as against 50 percent for 1- and 2-unit residences.)[3]

There were other factors pertaining to housing which sustained millwork output during most of the period studied. For example, the number of homes built with two stories or more, 17 percent of total starts in 1964, rose to 28 percent in 1978, indicating a greater demand for stairs, moldings, and other millwork items. The proportion of homes built with 1- and 2-car garages grew from 63 percent in 1963 to 74 percent in the late 1970's—spurring the demand for garage doors, an estimated 85 percent of which are made of wood.[4]

The demand for window units has of course fluctuated with housing starts. On balance, it rose substantially during the 1960's, and fell off somewhat in the 1970's. Demand in the 1970's was also crimped by a decline in the number of windows per dwelling unit, partially associated perhaps with builders' efforts to make homes more energy efficient; and by competition from aluminum and steel windows. Currently, the millwork industry accounts for one-third of all residential window installations, aluminum and, to a small extent, steel, making up the other two-thirds. Except for 2 years in the mid-1970's, when aluminum window prices rose relative to wooden ones, the industry's share of the window market has steadily declined from roughly one-half of the total in the late 1950's.[5]

Growth in the industry's output of doors has also been slowed by competitive materials. The industry

Table 1. Productivity and related indexes for millwork industry, 1958–80

[1977 = 100]

Year	Output per hour			Output	Employee hours		
	All employees	Production workers	Nonproduction workers		All employees	Production workers	Nonproduction workers
1958	75.6	77.0	70.7	58.5	77.4	76.0	82.8
1959	71.7	72.4	69.7	61.2	85.3	84.5	87.8
1960	73.2	74.8	67.7	55.7	76.1	74.5	82.3
1961	76.9	78.1	72.6	56.6	73.6	72.5	78.0
1962	78.1	78.8	76.3	59.7	76.4	75.8	78.2
1963	86.0	86.0	86.5	68.1	79.2	79.2	78.7
1964	86.0	85.9	87.2	69.2	80.5	80.6	79.4
1965	85.8	86.1	85.2	70.2	81.8	81.5	82.4
1966	82.7	84.0	78.4	66.6	80.5	79.3	84.9
1967	92.6	93.3	90.1	72.6	78.4	77.8	80.6
1968	93.9	93.7	96.0	78.7	83.8	84.0	82.0
1969	96.3	96.6	95.7	80.4	83.5	83.2	84.0
1970	95.9	97.6	89.7	77.1	80.4	79.0	86.0
1971	95.9	95.3	99.3	84.0	87.6	88.1	84.6
1972	107.2	104.5	121.6	103.6	96.6	99.1	85.2
1973	102.3	101.6	106.7	104.7	102.3	103.1	98.1
1974	92.7	94.4	85.5	84.6	91.3	89.6	99.0
1975	100.2	102.6	90.9	84.1	83.9	82.0	92.5
1976	99.1	99.6	97.3	92.5	93.3	92.9	95.1
1977	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1978	91.5	91.5	92.0	96.2	105.1	105.1	104.6
1979	93.9	95.2	88.2	96.2	102.5	101.1	109.2
1980	93.7	97.2	80.4	87.1	93.0	89.6	108.4
	Average annual rates of change (in percent)						
1958–80	1.4	1.4	1.3	2.7	1.3	1.3	1.4
1975–80	−1.7	−1.4	−2.8	0.7	2.4	2.2	3.6

accounted for close to three-fifths (by value) of all doors installed in new residential dwelling units in 1977, a slight decrease from earlier years.

Inroads into millwork's share of residential door installations have come chiefly from the wider use of steel for front and other exterior doors. In 1979, wood flush and panel doors accounted for 44 percent of all front door installations, compared with 68 percent in 1974 (the earliest year for which data are available). Displacement of wood by steel was similarly marked in the case of other exterior doors.[6] These tendencies have been somewhat offset by a slight but steady rise in recent years in the number of doors installed per dwelling.[7]

Whether industry output benefited from a continued shift from onsite carpentry of millwork items to factory production over the period cannot be readily determined. According to a BLS survey conducted in 1969, preassembled windows were installed in 78 percent of surveyed single-family houses built that year; and in 1968, prehung doors in 64 percent, and prefabricated staircase units in 25 percent.[8] No other such survey is available for the period examined here.

Window sashes and doors have been manufactured for more than a century, but most work was done onsite. Large-scale offsite production did not get underway until the 1930's and early 1940's, when a shift from onsite carpentry of millwork occurred.[9] Mass production of millwork was subsequently spurred by the large postwar demand for residential housing. Such product innovations as prehung doors (a door hinged on its frame, and delivered ready to be placed in the openings of the unit under construction) furthered the trend to factory production of items heretofore carpentered or finished at the site.[10] But no definitive data are available indicating the extent to which these developments raised the output of the millwork industry.

Employment increases moderately

Employment in the millwork industry, currently numbering 74,000 persons, rose at an average annual rate of 1.5 percent between 1958 and 1980. It peaked in 1978, when it stood 39 percent above the 1958 level. In general, it rose slightly during most of the 1960's, and more strongly in the early 1970's. Subsequent upswings and downswings were more marked than in earlier periods, reflecting similarly pronounced swings in the industry's output. Employee hours generally paralleled the trend in employment, rising at an average annual rate of 1.3 percent over the period. Average annual hours per employee in the millwork industry did not, on balance, change significantly between 1958 and 1972, and declined slightly between 1972 and 1980. Year-to-year changes were often larger for production worker employment than for production worker hours. The workweek per production worker averaged slightly less after 1972 (39.3 hours) than before (40.1 hours) indicating a drop in overtime. Generally, overtime averaged considerably less than for durables manufacturing as a whole.[11]

Differences in trend between production and nonproduction worker hours were not significant. But short-term fluctuations were much greater for production than for nonproduction worker employment and hours. The proportion of nonproduction workers, 18 percent in 1977, did not change materially over the study period, except for years of flagging industry output, when production worker employment weakened.

Industry employment evidences considerably higher turnover of production workers than durables manufacturing. In 1978, accessions (mostly new hires) in millwork, at 5.5 per 100 workers, were nearly two-fifths again as high as for all durables manufacturing; separations (mostly quits) were more than three-fifths again as high. High turnover rates mean a loss of trained and experienced workers[12] and more break-in periods required for newly hired workers, which may contribute to retarding productivity.

Technological developments

Millwork essentially consists of the sawing, shaping, planing, and sanding of wood to specified dimensions. The unfabricated lumber is delivered to the plant in the form of uniformly sized and quality-graded boards. Large-scale gluing operations are performed as part of the production process. Glazing is a normal part of the manufacture of windows and windowed doors.

Millwork is highly mechanized; virtually all work that transforms the lumber is done by machines. In some plants, feeding and tailing (the removal of the workpiece from the machine) are carried out manually, partly because of apprehension that a mechanized process would damage sensitive woods.

The basic technology used in millwork plants dates from the 1930's and 1940's when, as noted, large-scale production was first introduced in the industry. Factory production of millwork items antedates the 1930's, but large-scale operations were held back by the lack of waterproof, quick-curing adhesives. Moreover, millwork firms, at the time serving mostly local and regional markets, were slow in standardizing their product, hampering adoption by developers of housing projects. These obstacles began to be overcome with the innovation of synthetic resin adhesives, yielding waterproof bond.[13] Standardization progressed. Precision machinery became more widely available, probably accelerating the shift from onsite carpentry to the factory.[14] These developments also helped broaden the product lines of millwork firms. For example, complete double-hung windows mounted in prefabricated, weather-stripped frames, ready for installation at the construction site, were introduced in the 1940's and, subsequently, prehung doors.

Although the industry's basic machinery and equipment reflect woodworking technologies that have existed for many decades, there are indications that much of this equipment is less than 20 years old, and that sizable proportions are 10 years old or less.[15] Thus, three-fifths of the finger jointing machinery and of automatic mortisers appear to be in the lower age group, and as much as three-quarters of many types of sawing machinery. Fifty percent of door sizers, and much of the glue room equipment—including clamps and clamping machines, glue guns and pumps, and spreaders and presses—are of comparatively recent date, as is finishing equipment (for example, hot air ovens). The same holds for such general plant equipment as air conditioners, dust collectors, and computers. However, it cannot be determined from the available data whether the more recently installed—therefore, more up-to-date—equipment is well diffused throughout the industry. It is believed that diffusion is slow, partly because of the fragmentation of the industry into many firms.

A trend toward automated systems in the industry seems to be underway.[16] This trend is furthered by the declining costs of numerical controls, which more and more entail one-station systems featuring microcomputers.[17] That trend also involves computer-controlled material handling systems, robotized transfer and palletizing, and carousels interfacing with conveyors, robots, and other material handling devices.[18] But some persons in the industry argue that automation is unlikely to make much headway in millwork because it compels a financial commitment to highly specialized equipment—a commitment which often cannot be justified because of the erratic demand for the industry's products.

Other, more narrowly focused technological advances have been made which have evidently been more readily adopted than automated equipment. For example, the versatility of machines fabricating moldings has been greatly extended so that a large variety of complex molding profiles can be cut and grooved at great speeds without loss of precision and insignificant loss in setup time.[19] Ripsaws have been introduced whose sawing patterns can be controlled by instructions relayed by manipulating the shadow of an overhead wire. Stock which is free from knots and other flaws can thus be mechanically selected, eliminating a number of strenuous manual operations and resetting of the sawing machine, and reducing waste.[20] Solid-state sensing devices have in recent years been attached to abrasive planers, ensuring uniform surfaces. Abrasive planers were developed in an era of low-cost energy, but have become more energy-efficient, as well as faster.[21] Hand-operated sanders have been disappearing as multifunctional sanding machines have evolved. Thus, automatic thickness settings permit ranges from bites of ¼ inch to the finest surface finish.[22] A gradual shift from electrically powered to air-powered hand tools has probably also contributed to improving productivity. Air-driven hand tools are believed to achieve job requirements more efficiently, and to be less fatiguing for the operator because of their light weight and a wider choice of such options as handles and styles.[23]

Significant advances have likewise been made in adhesive applications. High-speed production requires rapid curing, and the gluing process is therefore usually an integral part of the production process. Certain radio frequency gluing devices have reduced curing time from 20 to 2 minutes, and, for example, as many as 20 door stiles can be processed at the same time. The saving in labor requirements made possible by this process has been estimated at 35 percent.[24] Bonding strength, too, has been increased, permitting the elimination of clamping in some operations (clamping has usually been regarded as a bottleneck in high-speed millwork assembly where gluing is required).[25]

Capital expenditures

New plant and equipment spending by the millwork industry went up fairly rapidly between 1963 (when pertinent data first became available) and 1978. In terms of constant dollars, it rose at an average annual rate of 4.7 percent.[26] However, the annual increase between 1963 and 1972, 9.4 percent, by far exceeded that for 1972 to 1978—1.2 percent. Significantly, outlays for buildings and other structures rose at nearly the same rate as for equipment during the former period, but declined during the latter. Capital spending by the industry showed at times huge year-to-year swings, induced most likely by fluctuations in demand for the industry's product from residential construction. Comparisons with trends in the private economy's fixed investment outlays follow (average annual rates of change, in percent).[27]

	1963–78	*1963–72*	*1972–78*
Millwork:			
Total	4.7	9.4	1.2
Machinery and equipment	6.3	10.3	0.9
Structures	1.6	8.1	-3.9
Private fixed investment:			
Total	3.6	4.6	2.4
Producer durable equipment	5.2	5.7	4.3
Nonresidential structures	0.9	3.1	-1.3

The tabulation shows that the pattern of vigorous capital spending growth in the 1960's and early 1970's in the millwork industry closely resembled that of the private domestic economy, and likewise that of meager capital spending growth in the mid-to-late 1970's. But for millwork, the slowdown was far more pronounced and spelled virtual stagnation in investment in new machinery and equipment.

New capital expenditures per employee in millwork represented only 42 percent of the comparable figure for manufacturing as a whole in 1978. That ratio does vary widely over time because of the large fluctuations of millwork firms' plant and equipment outlays (it was 61 percent in 1972). Yet, the comparative capital intensity of millwork is somewhat understated because its firms rent a larger proportion of plant structures and equipment than other manufacturers. In 1978, rents for structure represented the equivalent of 67 percent of millwork firms' purchases of structures, and rents for equipment, 22 percent. The corresponding figures for manufacturing were 34 percent and 9 percent. When rental payments are added to millwork's total capital outlays, the per-employee ratio to manufacturing mentioned above rises to 50 percent in 1978 (and 65 percent in 1972). That still spells relatively low capital intensity, a characteristic also manifest in the low value of the industry's fixed assets per employee—it represented between 42 and 44 percent of the manufacturing average in the 1970's. In 1976, each dollar of millwork shipments required 17 cents in fixed assets, compared with 34 cents for manufacturing in general.

Size of establishments

Millwork firms are preponderantly small—70 percent employed fewer than 20 workers in 1977, and another 23 percent employed from 20 to 99 workers. In this respect—that is, in terms of the size distribution of firms by employment—millwork closely resembles manufacturing. However, the smaller millwork establishments account for a much larger proportion of total employment in the industry than smaller manufacturing firms in general—50 versus 26 percent. The same pattern holds for the value of shipments, nearly one-half of which originated with the smaller millwork firms, compared with only about one-fifth for their counterparts in total manufacturing. Large millwork establishments—those employing 500 workers or more—recorded correspondingly smaller shares of total industry employment and shipments. The comparisons suggest that economies of scale are generally less of a factor of productivity improvement in millwork than in manufacturing.

LABOR PRODUCTIVITY IN MILLWORK should continue to advance moderately over the long term. The diffusion of automatic controls and the replacement of existing machinery with more up-to-date equipment will obviously be positive factors. But the predominance of smaller firms is likely to retard installation of automated transfer equipment, because, in their case, volume rarely justifies such equipment. Fluctuating residential building markets, and the trend toward apartment construction, will very likely continue to cause firms in the industry to be cautious in committing large funds to highly specialized automated machinery.

BLS employment projections have not been published for millwork alone, only for its industry group.[28] For it, a small, negative employment trend has been assumed during the 1980's. With demand from residential construction expected to expand, and industry employment to decline slightly, a moderate improvement in labor productivity is implied.[29] However, this progress is predicated upon the continued adoption of more advanced technologies by firms in the industry. ☐

FOOTNOTES

[1] The millwork industry has been designated as number 2431 in the 1972 Standard Industrial Classification Manual of the Office of Management and Budget. It consists of establishments which primarily manufacture such millwork products as moldings, wooden doors, windows, shutters, blinds, and awnings; and other architectural millwork items. All average annual rates of change are based on the linear least squares trend of the logarithms of the index numbers. The indexes for productivity and related variables will be updated annually and published in the annual BLS Bulletin, *Productivity Indexes for Selected Industries.*

[2] The data on average square foot are per single-unit dwelling, number of rooms and stories, and other examples mentioned in this and the following paragraph are from the following sources: *Characteristics of New One-Family Homes, 1968; Characteristics of New Family Housing: 1978*; both published by the Bureau of the Census, U.S. Department of Commerce, and U.S. Department of Housing and Urban Development, Washington, D.C.; James W. Myrtle, "Characteristics of New Housing," *Construction Review*, April 1979, pp. 4–9; Abraham Goldblatt, "Profile of New One-Family Homes," *Construction Review*, February 1973, pp. 4–8; and *Statistical Abstract of the United States, 1980* (Government Printing Office, 1980), p. 791.

[3] *Architectural Aluminum Industry Statistical Review* (Chicago, Architectural Aluminum Manufacturing Association, 1980), Table 14.

[4] Based on information from Housing Industry Dynamics, Crofton, Md.

[5] See footnote 3.

[6] Based on information from Housing Industry Dynamics.

[7] *Architectural Aluminum Industry Statistical Review, 1980.*

[8] Robert Ball, *Labor and Material Requirements for Construction of Private Single-Family Houses*, Bulletin 1755 (Bureau of Labor Statistics, 1972), p. 22.

[9] Information from William B. Lloyd, author of *Millwork: Principles and Practices* (Chicago, Cahners Publishing Company, 1966).

[10] *Millwork*, p. 208.

[11] The majority of millwork production workers hold jobs as machine and materials handling operators and assemblers. *Industry Wage Survey: Millwork, June 1979*, Bulletin 2083 (Bureau of Labor Statistics, 1980).

[12] Some effects of high turnover rates are discussed by Peter Henle, "Economic Effects: Reviewing the Evidence," in Jerome M. Rosow *The Worker and the Job* (Englewood Cliffs, N.J., Prentice-Hall, 1974), p. 125.

[13] *Millwork*, p. 8.

[14] *Millwork*, p. 8. Hours worked by carpenters in building a 1-family dwelling have undoubtedly declined, and the decline in part points to a shift of the work conventionally performed by the carpenter to manufacturing. Thus, according to the BLS publication cited in footnote 8, there were 29 onsite carpenter hours required per 100 square feet of a 1-family house in 1969. According to studies done by the BLS for 1-family frame houses built in 1946–47, onsite carpentry then required

about 70 hours per 100 square feet. The decline implied in the number of onsite carpenter hours may have partly occurred because of differences in survey methods, the type of houses selected, and other technical or statistical factors. Moreover, part of the decline may be attributable to productivity improvements in carpentry. Nevertheless, a significant portion of the decline is likely to have been linked to shifts to factory production of carpentering work, including here millwork items, as well as roof trusses, plywood subflooring, and so forth. See Edward M. Gordon, "House Construction: Man-Hours by Occupation, 1946–47," *Monthly Labor Review*, December 1948, pp. 611–14; and Adela L. Stuckey, "Labor Share in Construction Costs of New Houses," *Monthly Labor Review*, May 1949, pp. 517–20.

[15] *An Inventory of Machines and Equipment in the Woodworking and Furniture Market*, issued by *Woodworking and Furniture Digest*, Wheaton, Ill., 1979. *An Inventory* presents the number of woodworking machines, by type, for each woodworking industry (as classified by the Standard Industrial Classification Manual). In a separate presentation, *An Inventory* shows the age breakdown of each type of woodworking machinery, but the age breakdown is not grouped by industry. The discussion in the text assumes that the age breakdown applies to machinery in the millwork industry where this industry accounts for a relatively large proportion of a given type of woodworking machinery. The authors of *An Inventory* believe this assumption to be valid.

[16] *Woodworking and Furniture Digest*, February 1976, p. 65.

[17] *Woodworking and Furniture Digest*, August 1978, p. 83.

[18] *Woodworking and Furniture Digest*, July 1981, pp. 14–19.

[19] Industry source.

[20] Industry source.

[21] *Woodworking and Furniture Digest*, August 1978, p. 83; May 1981, p. 16.

[22] *Woodworking and Furniture Digest*, May 1981, p. 16.

[23] *Woodworking and Furniture Digest*, February 1981, pp. 10–19.

[24] Industry source.

[25] *Woodworking and Furniture Digest*, August 1978, p. 83 ff.; January 1981, pp. 10–19.

[26] Constant-dollar capital expenditures were derived by deflating the current-dollar census data on the millwork industry's new capital expenditures by the implicit price deflators for fixed investment, shown on p. 236 of *Economic Report of the President*, January 1981.

[27] The rates for private fixed investment (in 1972 dollars) are derived from Table B-2, *Economic Report of the President*, January 1981.

[28] The millwork industry is part of SIC 243, which includes veneer, plywood, and structural wood members. It accounts for about 35 percent of SIC 243 in terms of employment.

[29] See Data Resources, Inc., *U.S. Long-Term Review*, Spring 1982, p. 11.20; and Valerie Personick, "The outlook for industry output and employment through 1990," *Monthly Labor Review*, August 1981, especially p. 34.

APPENDIX: Measurement techniques and limitations

Indexes of output per employee hour measure changes in the relation between the output of an industry and employee hours expended on that output. An index of output per employee hour is derived by dividing an index of output by an index of industry employee hours.

The preferred output index for manufacturing industries would be obtained from data on quantities of the various goods produced by the industry, each weighted (multiplied) by the employee hours required to produce one unit of each good in a specified base period. Thus, those goods which require more labor time to produce are given more importance in the index.

In the absence of adequate physical quantity data, the output index for this industry was constructed by a deflated value technique. The value of shipments of the various product classes were adjusted for price changes by appropriate Producer Price Indexes to derive real output measures. These, in turn, were combined with employee hour weights to derive the overall output measure. The result is a final output index that is conceptually close to the preferred output measure.

Employment and employee hour indexes were derived from data published by the Bureau of the Census because BLS data were not available. Employees and employee hours are each considered homogeneous and additive, and thus do not reflect changes in the qualitative aspects of labor, such as skill and experience.

The indexes of output per employee hour do not measure any specific contributions, such as that of labor or capital. Rather, they reflect the joint effect of factors such as changes in technology, capital investment, capacity utilization, plant design and layout, skill and effort of the work force, managerial ability, and labor-management relations.

Research Summaries

The aging of the older population and the effect on its labor force rates

PHILIP L. RONES

Changes in labor force measures are not always easy to interpret. For instance, a rise in the unemployment rate over time is generally interpreted as meaning that it has become more difficult for an individual to find a job. But, that is not necessarily the case. The unemployment measure could show an increase over a long-term period even though the rates for each specific labor force group (by age, sex, and race) either remained stable or declined. This would occur if groups which typically have higher than average unemployment rates retained those rates as their proportion of the labor force increased. The increase in the aggregate measure, then, could stem from either a change in the age distribution of the population or changes in the labor force participation rates for specific groups.[1]

Probably the most widely used measure of the labor market status of older workers is not the unemployment rate but, rather, the labor force participation rate. This statistic has been closely followed in recent years because labor force activity of older workers affects social security and private pension outlays, and also could reflect the impact of mandatory retirement legislation. The participation rate for men age 55 and older has declined markedly in the post-World War II period, from 70.7 percent in 1948 to 44.5 percent in 1981, largely reflecting this group's improved financial ability to retire. During the same period, the participation rate for women age 55 and over rose from 17.2 to 22.7 percent, but that gain was far less than that registered by younger women.

In the last 2 years, a fall in participation rates for older persons of both sexes has accelerated, following 3 years of relatively slow decline. This has occurred despite changes in age discrimination laws and high rates of inflation, factors which many observers expected to provide upward pressure on participation. This recent labor force trend has spurred a rise in interest regarding the nature and causes of declining participation among older workers.

One possible explanation is that the fall in participation, particularly in recent years, might be partly the result of the aging of the older population. Basically, this is the converse of the argument that has been used to explain part of the rise in the unemployment rate. The rationale is that the oldest groups within the elderly population, those with the lowest participation rates, have been increasing as a proportion of the elderly and are receiving more weight in the overall calculation.

To examine the validity of this proposition, population and labor force data from the Current Population Survey (CPS) for men and women by single years of age were obtained for 1968, 1972, and 1981. Each year was selected for an important reason: 1968 is the first full year for which single-year-of-age data were tabulated using the civilian noninstitutional population concept; 1972 is the first year that the CPS used 1970-based population controls (rather than those projected from the 1960 census results); and 1981 is the most recent date for annual average data and also is the first year that 1980 census-based population estimates were available.

The census data themselves were not used because the single-year-of-age tabulations refer to *total* population, while the CPS, beginning in mid-1967, uses civilian *noninstitutional* population. This distinction is critical because of the rapid rise in the institutional population of the elderly (mostly in nursing homes), currently about 1.6 million people.

Analysis of the CPS data isolated the effects of three factors on changes in participation between 1968 and the two latter years (1972 and 1981). These were: (1) changes in the age-specific participation rates, (2) changes in the age composition of the population, and (3) changes attributable to "interaction", that is, changes that are not explained by the age-specific participation rates or by the age composition of the labor force. Interaction accounted for a very small portion of the total change in participation. Table 1 shows the amount of change accounted for by each of the three factors.

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Table 1. Changes in age components of labor force participation rates for men and women age 55 and older

Age and year	Average participation rate	Total change	Change due to — Age specific participation rate	Age composition of population	Interaction effect[1]
Men, age 55 and over:					
1968	56.54	0.00	0.00	0.00	0.00
1972	53.36	−3.18	−3.33	.19	−.04
1981	44.47	−12.07	−11.28	−.71	−.08
Age 55 to 64:					
1968	84.26	0.00	0.00	0.00	0.00
1972	80.51	−3.75	−3.51	−.21	−.03
1981	70.63	−13.62	−13.31	−.21	−.10
Age 65 and over:					
1968	27.27	0.00	0.00	0.00	0.00
1972	24.35	−2.92	−3.13	.27	−.06
1981	18.35	−8.92	−9.15	.37	−.14
Women, age 55 and over:					
1968	25.04	0.00	0.00	0.00	0.00
1972	24.52	−.52	−.19	−.33	.00
1981	22.73	−2.31	−1.14	−1.13	−.04
Age 55 to 64:					
1968	42.44	0.00	0.00	0.00	0.00
1972	42.14	−.30	−.16	−.15	.01
1981	41.35	−1.09	−.83	−.19	−.07
Age 65 and over:					
1968	9.57	0.00	0.00	0.00	0.00
1972	9.33	−.22	−.20	−.03	.01
1981	8.01	−1.56	−1.41	−.16	.01

[1] The "interaction" effect is that part of the total change in participation not explained by the other two variables.

The amount of change in participation attributable to changes in age-specific participation rates is derived by first computing participation rates for single-years-of-age between age 55 and 74 and for age 75 and over. Then, a rate was computed using the following formula (1981 is the target year and 1968 is the base year):

$$\frac{\Sigma_i (r_{i81} \cdot pop_{i68})}{\Sigma_i pop_{i68}}$$

where:

> r_{i81} is the 1981 participation rate for the ith age group and pop_{i68} is the 1968 civilian noninstitutional population for the ith age group.

Simply put, this calculation shows what the participation rate would have been in 1981 if the population distribution had been the same as in 1968. In other words, it isolates the effect of changing participation rates. For instance, for men age 55 and over, changing participation accounted for 11.28 points of the fall in participation between 1968 and 1981; therefore, their adjusted 1981 rate is 45.26 percent (56.54−11.28).

The formula used to compute the effect of changes in the population distribution is:

$$\frac{\Sigma_i (r_{i68} \cdot pop_{i81})}{\Sigma_i pop_{i81}}$$

where:

> r_{i68} is the 1968 participation rate for the ith age group and pop_{i81} is the 1981 civilian noninstitutional population for the ith age group.

This calculation shows what the rates would have been in 1981 if the age-specific participation rates had remained as they were in 1968. In other words, it isolates the impact of changes in the age composition of the population. For men age 55 and over, the adjusted participation rate in 1981 was 55.83 percent, explaining only .71 point of the 12.07-point fall in participation since 1968.

Results

Among men, the change in the age structure of the 55-and-over population has had relatively little impact on the dramatic declines in participation. In fact, for men age 65 and over, the changing population distribution caused a slight rise in participation rates, indicating that the growth has been greater in the younger, not older, groups in this age cohort. The following tabulation of age distribution for men age 65 and over in 1968 and 1981 demonstrates this:

	Percent of population in— *1968*	*1981*
65 and over	100.0	100.0
65	8.4	8.3
66	7.8	8.4
67	7.6	7.8
68	7.3	7.3
69	6.2	6.5
70	6.2	6.5
71	5.5	5.9
72	5.4	5.6
73	5.4	5.3
74	4.7	5.0
75 and over	35.4	33.5

The oldest age group, age 75 and over, made up a much larger proportion of all men age 65 and older in 1968, while the younger age groups predominated in 1981. The 55-to-64 group did age somewhat over the 18-year period, but only enough to explain about two-tenths of a point out of a participation rate decline that, by 1981, totaled more than 15 points.

Unlike the mixed results experienced by men, the age composition effect was consistently in the downward direction for older women.[2] For women ages 55 to 64 and 65 and over, the age effect was less than two-tenths of a point in both 1972 and 1981. The relatively large age effect, by 1981, in the 55-and-over group suggests a shift in population into the older (65 and over) age group. (A similar shift, causing a .71-point decline in participation, occurred among men.) However, the participation rates for older women have changed comparatively little over time and tend to be much less an issue than those for men, which have fallen dramatically. In the years ahead, the aging of the first generation of American women who have developed a strong labor force attachment is likely to provide upward pressure on the participation rates of women age 55 and over.

The declines in participation among older workers over the last several years are particularly noteworthy, because they occurred despite increased protection against forced retirement and the prevailing high rates of inflation. The main causes of the long-term declines in participation among the elderly have been documented,[3] and the declines in the last 2 years may have been intensified by the weakening economy. The changing age distribution of the older population seems to have played, at most, a very small part in these important labor force trends. ☐

——*FOOTNOTES*——

[1] The effect of these influences on the unemployment rate was discussed in a series of articles in the March 1979 *Monthly Labor Review*. See Paul O. Flaim, "The effect of demographic changes on the Nation's unemployment rate"; Glen G. Cain, "The unemployment rate as an economic indicator"; and Joseph Antos and others, "What is a current equivalent to unemployment rates of the past?"

[2] It should be kept in mind that the "aging" of the older population is limited by the use of the noninstitutional population in the calculations. Nursing home residents, who make up most of the institutional elderly, are concentrated in the oldest age groups and the vast majority are women.

[3] See, for example, Philip L. Rones, "Older men—the choice between work and retirement," *Monthly Labor Review*, November 1978, pp. 3–10; or Joseph F. Quinn, *The Microeconomics of Early Retirement: A Cross Sectional View* (U.S. Department of Health, Education, and Welfare, 1975).

Occupational changes and tenure, 1981

NANCY F. RYTINA

The labor force is characterized by a relatively high degree of occupational change. Studies have shown that most workers are employed in occupations which differ from those of their fathers.[1] Occupational shifts are also quite common over the course of a worker's career. The occupation held by a worker in midlife often differs from the first occupation after leaving school.[2]

Although the volume of occupational mobility that occurs within a given year is much smaller, it provides an indication, on a current basis, of recent trends. When assembled over time, data on 1-year mobility shows changes that are important for purposes of developing vocational and higher educational programs.

Studies of 1-year occupational mobility based on data from the Current Population Survey (CPS) of January 1966, 1973, and 1978 indicated that about 1 in 10 of all workers in each year were employed in a different occupation than in the previous year.[3] Much of the occupational change was concentrated among persons under age 30 who tend to "job shop" as they obtain exposure to various kinds of work.

This report presents an update of these previous studies. The data shown are based on information obtained in the January 1981 Current Population Survey and relate to the occupations of workers in that month and in January 1980. Workers who changed occupations are defined as those employed in both January 1980 and January 1981, but in a different "three-digit" census occupation in January 1981 than the occupation reported for January 1980. For example, a person employed as a typist in 1981 and as a stenographer in 1980 would be defined as having changed occupations, although the change occurred within the major occupational grouping—clerical workers. The occupational mobility rate used in this report refers to the number of workers who changed occupations as a proportion of the total number employed in January of 1980 and 1981.[4]

This study also presents new information on occupational tenure based on the years spent in the current occupation. These data are limited to persons employed in both January 1980 and 1981. Workers in the same "three-digit" census occupation in January 1981 as in January 1980 were asked how many years, altogether, they had "been doing that kind of work." Persons who had changed occupations were assigned to the tenure category of less than 1 year.

The data on both occupational mobility and tenure are subject to a number of limitations. Besides those normally associated with sample surveys (sampling variability and nonresponse), there may be errors associated with the retrospective reporting of the occupation a year earlier and the number of years in the same occupation.[5] Because occupation is reported only for the months of January 1980 and January 1981, any temporary changes in occupation that occurred during the year will not be reflected in the survey results. Since the tenure question was asked only of persons in the same occupation in January 1980 and 1981, the tenure data exclude persons employed in January 1981 but not January 1980, as well as any years spent in the occupation prior to 1980 for persons not in the same occupation in both January 1980 and 1981. Moreover, the information on tenure was collected in a combination of single and multiyear intervals, thus making it difficult to obtain reliable estimates of mean or median tenure.[6]

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Workers who changed occupations

Of the 88.3 million employed workers 18 years of age and over and not in school in January 1981, 9.5 percent reported employment in a different occupation in January 1980. Eighty-one percent had been in the same occupation and the remaining 9 percent had either been unemployed or not in the labor force the previous January. The occupational mobility rate stood at 10.5 percent. Both the distribution of labor force status in the previous year and the mobility rate are not much different from the CPS data reported for 1966, 1973, and 1978.

In 1981, as in earlier years, age was the factor most associated with occupational change. Of the total 8.4 million workers who shifted occupations between January 1980 and January 1981, 70 percent were under age 35, although this age group accounted for only 46 percent of the labor force in January 1981.

Not surprisingly, occupational mobility rates declined sharply with age (table 1). The rate for workers age 35 to 44 was less than one-fourth as high as that for workers 18 and 19 years of age. High rates of occupational mobility among young workers are accounted for by a number of factors. Upon completion of school, young persons often try several fields of employment before settling into a career. Also, as many of them make changes in residence and living arrangements, they also change occupations. In contrast, occupational change among older workers occurs less frequently because of attachments to a particular occupation or the risks of losing income, job security, and pension rights, which might accompany an occupational shift.

Mobility rates by age were much the same as in the earlier CPS surveys. Standardizing the mobility rates by age in 1966 and 1981 suggests that the slightly higher rate observed in 1981 (10.5 versus 8.8) was almost entirely a result of the increased proportion of young persons in the work force.[7]

Differences in occupational mobility by sex are quite small relative to age differences. For both men and women, mobility rates decreased with age (table 1). Women, however, have a slightly higher mobility rate than men (11.4 versus 9.9 percent). Since 1966, the mobility rate for women has risen substantially, up from 6.6 percent. An increase is to be expected because of the entry into the labor force of women from younger age groups which have always had higher mobility rates. However, standardizing for age indicates that over 70 percent of the increase was attributable to changes in mobility within specific age groups.[8] The rise in the rate of occupational change for women reflects their shift into professional and managerial occupations as well as their increased employment in clerical jobs where the rate of occupational change has traditionally been high.

In contrast, the mobility rate for men in 1981 was at the same level as in 1966. The 1981 male rate, however, probably would have been slightly lower were it not for the increase in the proportion of young men in the labor force.

Occupational mobility rates do not differ much by race and ethnicity. Among men, the rate is slightly higher among Hispanics partly because they are younger than either whites or blacks. The rate for white women is higher than that for either black or Hispanic women and this difference is evident among most age groups.

The reason given for changing one's occupation is one factor which is not strongly related to age (table 2). Close to 43 percent of all workers reported better pay as the most important reason for shifting occupations.[9] Better pay is cited more frequently than any other reason among all age, sex, race, and ethnic groups except workers ages 55 and over. A larger percentage of older workers cited "other" reasons (presumably retirement from the previous occupation) than better pay. The recession of 1980 may have some bearing on the fact that

Table 1. Occupational mobility between January 1980 and January 1981 of employed persons, by age, sex, race, and Hispanic origin, January 1981

Characteristic	Total employed in January 1981		Status in January 1980				Occupational mobility rate[1]
	Number (in thousands)	Percent	Same occupation	Different occupation	Unemployed	Not in labor force	
Total, 18 years and over, not in school	88,334	100.0	81.0	9.5	3.3	6.1	10.5
Men							
Total, 18 years and over, not in school	50,502	100.0	83.8	8.2	3.2	3.7	9.9
18 and 19 years	1,581	100.0	43.3	21.4	8.5	26.8	33.1
20 to 24 years	6,202	100.0	63.5	18.3	7.1	10.1	23.3
25 to 34 years	14,735	100.0	82.4	11.6	3.2	2.7	12.4
35 to 44 years	10,746	100.0	89.1	7.2	2.4	1.3	7.4
45 to 54 years	9,047	100.0	92.6	4.3	2.2	.9	4.4
55 to 64 years	6,503	100.0	93.2	3.4	1.5	1.8	3.5
65 years and over	1,088	100.0	91.9	1.5	1.2	5.5	1.6
White	45,460	100.0	84.1	9.3	3.0	3.6	10.0
Black	4,199	100.0	82.0	8.1	5.3	4.6	9.0
Hispanic origin	2,755	100.0	79.0	11.0	4.4	5.7	12.2
Women							
Total, 18 years and over, not in school	37,832	100.0	77.2	10.0	3.5	9.3	11.4
18 and 19 years	1,449	100.0	37.8	21.8	8.9	31.4	36.6
20 to 24 years	5,754	100.0	61.9	18.0	6.0	14.2	22.5
25 to 34 years	10,916	100.0	73.8	11.9	3.9	10.4	13.9
35 to 44 years	7,970	100.0	82.3	8.1	2.5	7.1	8.9
45 to 54 years	6,526	100.0	87.5	5.4	2.3	4.8	5.8
55 to 64 years	4,212	100.0	91.9	2.6	1.5	4.1	2.7
65 years and over	1,005	100.0	90.1	1.6	.7	7.6	1.8
White	33,022	100.0	76.8	10.3	3.1	9.8	11.9
Black	4,050	100.0	80.7	7.5	6.3	5.5	8.4
Hispanic origin	1,804	100.0	74.5	7.8	5.6	12.1	9.5

[1] Percent of persons employed in both January 1981 and January 1980 who were employed in a different occupation in January 1981 than January 1980.

Table 2. Reasons for occupational change for persons employed in a different occupation in January 1981 than January 1980, by sex, age, race, and ethnicity

[Percentage distribution]

Workers who changed occupations	Number (in thousands)	Total	Change from job held in school	Better pay, full-time work	Lost job, laid off	Dissatisfied, underutilized	Working conditions	Other	Not answered
Total, 18 years and over, not in school	8,430	100.0	3.6	42.5	11.4	9.0	7.8	21.0	4.6
White	7,643	100.0	3.7	42.2	11.2	9.4	7.8	21.3	4.5
Black	642	100.0	3.3	45.0	14.5	5.9	7.8	17.6	5.9
Hispanic	443	100.0	1.6	42.0	11.4	8.5	9.6	20.8	5.9
Men, total	4,856	100.0	2.9	42.9	13.5	8.7	6.7	20.3	4.9
18 to 24 years	1,537	100.0	6.3	44.5	15.2	9.2	6.8	13.8	4.2
25 to 34 years	1,716	100.0	2.2	44.9	12.2	8.9	6.9	20.1	4.9
35 to 44 years	769	100.0	.3	44.5	14.2	9.0	5.8	21.4	4.9
45 to 54 years	589	100.0	.0	36.3	11.7	7.5	7.8	29.4	7.3
55 years and over	245	100.0	.0	23.8	12.9	4.9	7.0	45.1	6.3
Women, total	3,774	100.0	4.5	42.0	8.8	9.5	9.0	21.9	4.3
18 to 24 years	1,352	100.0	10.3	40.0	9.2	9.0	7.5	19.4	4.6
25 to 34 years	1,302	100.0	1.9	43.6	7.7	11.4	8.9	21.7	4.8
35 to 44 years	644	100.0	1.0	49.2	8.8	4.9	11.5	21.8	2.9
45 to 54 years	352	100.0	.0	36.1	10.9	13.3	10.8	24.3	4.6
55 years and over	124	100.0	.0	27.0	10.3	5.9	8.4	46.5	1.9

nearly 11 percent of all workers cited either job loss or layoff as the reason for changing occupations.

In addition, the length of time spent with the current employer is closely associated with occupational mobility. About 90 percent of all workers who changed occupations had less than a year of tenure with their current employer, compared with 10 percent of all workers who remained in the same occupation. (See article on job tenure, page 34.)

An indication of how mobility rates varied by the occupation of the employed in 1981 is provided in table 3. For both sexes, mobility rates are generally highest in those occupations with large percentages of young workers. For example, nonfarm laborers have a high mobility rate and over 50 percent of all workers moving into that occupation were under age 25. Similarly, large percentages of young workers shifted into the clerical and service occupations. An exception is the high mobility rate for women employed as managers. Almost one-fourth of women moving into this occupation were 35 to 44 years of age, in part reflecting an expansion in employment opportunities for women in management.

Some of the occupations with lower rates of mobility are those requiring high levels of education (professional) or other specialized training (craft). Declining employment opportunities in farming and the attachment to the land of those who have remained in this occupation explain the very low mobility rates for farmers and farm managers.

Evidence regarding the occupational origins and destinations of workers who changed occupations is provided in table 4, which shows the occupational distribution in January 1980 for each occupation in January 1981. It is apparent that workers who changed occupations came largely from the same occupational grouping, that is, from related occupations. For example, among professionals, 43 percent of the men and 37 percent of women had been employed in a professional occupation in January 1980. The degree of intraoccupational group shifting was also quite high for men employed as managers, craftworkers, and operatives, except transportation equipment operatives. For women, intraoccupational group shifting was particularly high among clerical workers, operatives (except transportation equipment operatives), and service workers. About

Table 3. Occupational mobility rates between January 1980 and January 1981 of employed persons, by occupation and sex

[Numbers in thousands]

Occupation	Men		Women	
	Number employed, both January 1980 and 1981	Occupational mobility rate[1]	Number employed, both January 1980 and 1981	Occupational mobility rate[1]
Total, 18 years and over, not in school	46,980	9.9	32,983	11.4
Professional, technical, and kindred workers	8,063	6.8	6,329	9.1
Managers and administrators, except farm	7,597	8.8	2,854	13.5
Salesworkers	2,882	10.9	1,912	13.8
Clerical and kindred workers	2,951	13.6	11,691	12.5
Craft and kindred workers	10,069	8.3	626	10.8
Operatives, except transport	5,174	12.7	3,294	9.6
Transport equipment operatives	2,631	9.4	225	8.5
Laborers, except farm	2,477	18.6	354	16.6
Private household workers	23	([2])	616	9.6
Service workers, except private household	3,504	12.3	4,814	11.5
Farmers and farm managers	1,108	2.5	115	1.6
Farm laborers and supervisors	503	13.0	152	7.8

[1] Percent of persons employed in both January 1981 and January 1980 who were employed in a different occupation in January 1981 than January 1980.

[2] Data not shown where base is less than 75,000.

60 percent of women in clerical work in January 1981 had come from that occupational group. This results partly from the high degree of skill interchangeability and employment turnover that occurs within clerical occupations.

Also, most of the shifts between occupational groupings tended to occur within the same broad fields, for example, white-collar and blue-collar occupations. About 80 percent of women and 66 percent of men employed in white-collar occupations had been employed in these occupations during the previous year. Similarly, over 70 percent of men in blue-collar occupations were employed in the same occupations a year earlier. In contrast, the proportion of women employed in blue-collar occupations is comparatively low. Not surprisingly, about one-half of women who shifted into blue-collar occupations came from the white-collar and service occupations.

Occupational tenure

An indication of occupational tenure is found by examining the distribution of the number of years spent in the January 1981 occupation for those who had been in the same occupation in January 1980. It should be noted that because the data on occupational tenure in this report are restricted to persons employed in January 1980 and January 1981, the occupational mobility rates shown in previous tables are equivalent to the proportion of workers with less than 1 year in the occupation.

Of the 80 million workers employed in both January 1980 and 1981, over one-third had been in the same occupation from 1 to 5 years (table 5). Adding to that figure those in the occupation less than 1 year indicates that close to one-half of all workers had been employed in their January 1981 occupation less than 5 years.

Tenure in the occupation is strongly linked with age.

Table 4. Persons who changed occupation: major occupational group in January 1981, by occupation in January 1980

[Percent distribution]

Sex and occupation in January 1981	Different occupation in January 1980[1]		Professional, technical, and kindred workers	Managers and administrators, except farm	Sales-workers	Clerical and kindred workers	Craft and kindred workers	Operatives, except transport	Transport equipment operatives	Laborers, except farm	Service workers, including private household	Farm-workers
	Number (in thousands)	Percent										
MEN												
Total, 18 years and over, not in school	4,383	100.0	11.0	12.1	8.1	7.9	18.6	15.5	6.3	9.4	9.1	1.9
Professional, technical, and kindred workers	514	100.0	42.8	13.6	5.7	9.1	9.9	6.6	2.0	3.7	5.8	.8
Managers and administrators, except farm	630	100.0	15.8	32.4	14.1	8.8	9.8	4.3	3.0	4.4	6.8	.5
Salesworkers	298	100.0	6.4	23.4	24.1	12.4	10.0	6.7	5.7	4.3	5.0	2.0
Clerical and kindred workers	383	100.0	7.6	10.0	7.8	26.6	16.4	7.8	8.8	7.0	7.8	.0
Craft and kindred workers	781	100.0	5.0	6.7	5.2	5.2	34.8	17.5	6.5	11.4	6.4	1.2
Operatives, except transport	622	100.0	2.4	3.1	5.0	2.9	20.7	35.4	8.5	12.1	8.0	1.8
Transport equipment operatives	234	100.0	2.6	9.8	4.2	4.7	23.0	17.0	10.6	11.5	10.7	6.0
Laborers, except farm	419	100.0	4.5	6.7	5.2	3.1	19.1	21.9	10.2	18.6	8.6	2.4
Service workers, including private household	412	100.0	8.0	5.1	6.6	5.6	14.3	15.8	5.1	9.7	27.2	2.7
Farmworkers	90	100.0	3.3	4.4	4.4	1.1	21.1	16.7	5.6	20.0	7.8	15.6
WOMEN												
Total, 18 years and over, not in school	3,604	100.0	12.0	7.4	7.7	40.3	2.1	9.2	.6	2.1	18.0	.3
Professional, technical, and kindred workers	546	100.0	37.2	8.1	4.2	30.6	.9	3.5	.4	1.5	13.7	.0
Managers and administrators, except farm	367	100.0	15.2	20.0	12.8	38.3	1.4	3.1	.0	.8	8.4	.0
Salesworkers	257	100.0	9.7	12.8	10.5	39.3	.8	5.4	.0	3.1	18.3	.0
Clerical and kindred workers	1,388	100.0	6.5	4.9	7.6	59.8	1.8	4.5	.8	1.4	12.2	.6
Crafts, operatives including transport, nonfarm laborers, total[2]	447	100.0	5.1	3.1	3.6	18.1	6.9	35.1	1.8	5.6	20.1	.4
Operatives, except transport	306	100.0	2.3	2.6	2.6	14.0	6.9	42.1	2.0	5.6	21.7	0.3
Service workers, including private household	585	100.0	6.0	5.5	9.7	23.1	1.2	11.4	.3	2.6	39.7	.7
Farmworkers	14	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)

[1] Excludes a small number of workers with 1980 occupation not classified.

[2] Craftworkers, transport equipment operatives, and nonfarm laborers not shown separately because the base in each case is less than 75,000.

[3] Data not shown where base is less than 75,000.

Table 5. Occupational duration of persons employed in both January 1980 and 1981 by age, sex, race, and ethnicity

[Numbers in thousands]

Characteristic	Total employed in both January 1980 and 1981		Less than 1 year	1 up to 5 years	5 up to 10 years	10 up to 25 years	25 years or more
	Number	Percent					
Total, 18 years and over, not in school	79,973	100.0	10.5	36.9	19.2	24.6	8.7
Men	46,990	100.0	9.9	32.5	19.0	27.2	11.4
Women	32,983	100.0	11.4	43.4	19.5	20.9	4.8
White	71,225	100.0	10.7	36.4	19.0	24.8	9.1
Black	7,355	100.0	8.7	40.6	20.6	24.5	5.6
Hispanic	3,964	100.0	11.2	48.4	19.2	18.0	3.4
18 to 24 years	11,618	100.0	24.9	68.8	6.4	(1)	(1)
25 to 34 years	23,219	100.0	13.0	47.2	27.7	12.0	(1)
35 to 44 years	17,550	100.0	8.0	29.5	22.0	38.7	1.6
45 to 54 years	14,829	100.0	5.0	22.3	17.3	38.9	16.5
55 years and over	12,757	100.0	2.9	16.5	13.9	33.9	32.9

[1] Rounds to zero.

Workers under age 35 were concentrated in the 1 to 5 years category, while the majority of workers age 35 and over had been in the same occupation 5 years or more.

Men had more years in the same occupation than women. The sex difference is especially pronounced at 10 years or more in the occupation. Although women have continued to gain on men in year-round employment, they experience greater job turnover. This stems partly from personal and family priorities, but also because women have remained segregated in occupations which have high rates of turnover.

In terms of race and ethnicity, the distribution of occupational tenure is relatively similar between blacks and whites compared to Hispanics. Among blacks and whites, approximately 50 percent were in the same occupation for less than 5 years, compared to almost 60 percent among Hispanics. The lower occupational tenure of Hispanics can be attributed to some degree to their lower average age and greater likelihood of employment in service, laborer, and farm occupations.

The number of years in the same occupation varied by the January 1981 occupation. Much like the incidence of occupational change, tenure of less than 5 years is more common in occupations requiring less training (operatives and laborers), transferable skills (clerical work), or high employment growth (managers for women). In contrast, tenure is relatively high in occupations with either declining employment opportunites (farmers and farm managers) or where specialized skills and lengthy training are involved (professionals for both sexes and craftworkers for men).

This report has provided an update on patterns of occupational change between 1980 and 1981 and described the distribution of occupational tenure among various demographic groups. With the January 1981 CPS, it is also possible to examine how occupational change and tenure relate more specifically to the economic status of workers. For example, the occupational categories used here were broad and conceal sex, race, and ethnic differences in employment that might be uncovered by focusing on detailed occupations. In terms of earnings, findings from a recent study using these data suggest that the lower tenure of women accounts for just 4 percent of the male-female earnings gap.[10] The January 1981 CPS data can be used to explore further these and other labor force topics. ☐

FOOTNOTES

[1] See Elton Jackson and Harry J. Crockett, "Occupational Mobility in the United States: A Point Estimation and Trend Comparison," *American Sociological Review*, February 1964, pp. 5–15; Peter M. Blau and Otis Dudley Duncan, *The American Occupational Structure* (New York, John Wiley & Sons, Inc., 1967); and David L. Featherman and Robert M. Hauser, *Opportunity and Change* (New York, Academic Press, 1978).

[2] See William H. Sewell, Robert M. Hauser, and Wendy C. Wolf, "Sex, Schooling and Occupational Status," *American Journal of Sociology*, November 1980, pp. 551–583; Rachel A. Rosenfeld, "Race and Sex Differences in Career Dynamics," *American Sociological Review*, October 1980, pp. 583–609.

[3] For reports using earlier CPS data see Samuel Saben, "Occupational mobility of employed workers" (January 1965–66), *Monthly Labor Review*, June 1967, pp. 31–38, reprinted as Special Labor Force Report 84; James J. Byrne, "Occupational mobility of workers" (January 1972–73), *Monthly Labor Review*, February 1975, pp. 53–59, reprinted as Special Labor Force Report 186; and Carl Rosenfeld, "Occupational mobility during 1977" (January 1977–78), *Monthly Labor Review*, December 1979, pp. 44–48, reprinted as Special Labor Force Report 231.

[4] This rate measures the proportion of workers who entered the occupation, not the proportion leaving the occupation held in 1980. This is only one of a number of possible measures of mobility, and it was selected because it is the same measure used in the previous studies. See footnote 3.

[5] See Paula J. Schneider, "Evaluation of the Occupation One-Year Ago Item in the January 1973 CPS," *Proceedings of the Social Statistics Session of the American Statistical Association*, 1977.

[6] The categories included 1 up to 2 years, 2 up to 3 years, 3 up to 4 years, 4 up to 5 years, 5 up to 10 years, 10 up to 25 years, and 25 years or more.

[7] The 1981 mobility rates by age were standardized on the 1966 age distribution resulting in a standardized mobility rate of 9.3. Reversing the procedure, the 1966 mobility rates by age were standardized on the 1981 age distribution which resulted in a standardized mobility rate of 10.8. The average of the "rate effect" and the "age effect" shows that 97 percent of the difference between the reported mobility rates of 8.8 in 1966 and 10.5 in 1981 was due to differences in the age distributions in the 2 years. See Evelyn M. Kitagawa, "Components of the Difference Between Two Rates," *Journal of the American Statistical Association*, December 1955, pp. 1168–94. Other standardization techniques are discussed in Henry S. Shryock and Joseph Siegel, *The Methods and Materials of Demography, Vols. I and II* (Bureau of the Census, 1971). Another possible source of difference between the 1966 and 1981 rates is that there were fewer three-digit occupations listed in the 1966 CPS.

[8] Based on age standardization. See footnote 5.

[9] This category also includes changing occupations for advancement opportunities and full-time work.

[10] See Nancy F. Rytina, "Tenure as a factor in the male-female earnings gap," *Monthly Labor Review*, April 1982, pp. 32–34.

Job tenure of workers in January 1981

FRANCIS W. HORVATH

Close to 30 percent of all workers during January 1981 had been on their jobs less than 1 year. At the same time, however, nearly one-fourth had been at the same job more than 10 years. (See table 1.) Overall, the median job tenure was 3.2 years.

This report gives the most recent summary statistics on job tenure derived from a special supplement to the January 1981 Current Population Survey and reviews some basic relationships in the data.[1]

Job tenure is a measure of the length of time an employee has worked continuously for the same employer, although not necessarily in the same occupation; continuous employment is broken only by interruptions other than vacations, temporary illnesses, strikes, layoffs of less than 30 days, or other short-term absences. A person terminates his or her tenure by quitting, being laid off for 30 days or more, entering the Armed Forces, or transferring to a job in a different company.

Measurement of job tenure is affected by many of the same methodological issues which complicate other time-based indices such as unemployment duration. Just as the average duration of unemployment is not a measure of how long a person is likely to remain unemployed,[2] job tenure is *not* a measure of how long a person will stay with a single employer. Rather, it is an index of how long one has been with an employer as of a specific point in time. This is an important distinction, which may be illustrated by comparing the average age of a population with its life expectancy. The average age tells nothing about completed life spans; it measures only the age of those who are still living. Similarly, job tenure is an index of accumulated time on the job for those still working.

Job tenure should not be confused with occupational mobility (discussed in more detail on page 29): Job tenure is a duration concept. On the other hand, occupational mobility pertains to persons who change occupations but not necessarily employers. Also, occupational mobility is more frequently discussed in terms of rates of change, while job tenure is usually presented as a length of time.

Table 1. Length of time on current job, workers 16 years and older, by sex, race, and Hispanic origin, January 1981

[Numbers in thousands]

Length or time on current job	Both sexes	Men	Women	White	Black	Hispanic origin
Total: Number	92,557	52,700	39,857	82,375	8,514	4,734
Percent	100.0	100.0	100.0	100.0	100.0	100.0
6 months or less	18.2	15.9	21.4	18.3	17.5	23.2
7 to 12 months	9.5	8.9	10.4	9.6	8.6	11.3
Over 1 to 2 years	11.8	10.3	13.3	11.5	11.4	13.6
Over 2 to 3 years	9.2	8.6	9.9	9.2	8.9	10.0
Over 3 to 5 years	12.0	11.5	12.6	12.0	11.4	13.3
Over 5 to 10 years	15.9	16.2	15.6	15.7	18.2	14.5
Over 10 to 15 years	9.6	10.4	8.4	9.4	11.5	7.6
Over 15 to 20 years	5.3	6.4	3.9	5.4	5.4	3.0
Over 20 to 25 years	3.4	4.4	2.2	3.5	2.9	2.0
Over 25 to 30 years	2.4	3.3	1.3	2.5	2.4	.9
Over 30 to 35 years	1.7	2.5	.7	1.8	1.2	.4
Over 35 years	1.2	1.7	.5	1.2	.6	.2
Median years	3.2	4.0	2.5	3.2	3.6	2.2

Job tenure is influenced by both voluntary and involuntary choices. For example, the part-time and summer jobs of most young persons are not intended to be permanent. For others, especially those who work in industries such as construction or retail trade, regular cycles of expansion and contraction in employment can reduce the length of one's tenure.

With the termination of the BLS Labor Turnover Survey because of budget reductions, job tenure information has become an important official data source relating to labor turnover. Even though the tenure survey is conducted only every 3 to 5 years, it provides valuable insights into the magnitude of job turnover and stability in the economy.

Job tenure data can also be combined with mortality projections to provide estimates of the proportion of workers who will remain on the job for a specified number of years. For example, the data may be used to estimate how many of a company's current employees might be eligible to receive future benefits under existing pension provisions.[3]

Not surprisingly, young workers have the lowest levels of job tenure. Fifty percent of all teenagers working in January 1981 had been at their jobs for 6 months or less. Almost 70 percent had started their jobs within

Table 2. Median years on current job, by age, race, and Hispanic origin, and sex, January 1981

Age	All workers			White		Black		Hispanic origin	
	Both sexes	Men	Women	Men	Women	Men	Women	Men	Women
Total, 16 years old and over	3.2	4.0	2.5	4.0	2.4	4.0	3.3	2.3	2.0
16 to 24 years	.8	.9	.8	.9	.8	.7	.8	.9	.9
25 to 34 years	2.5	2.9	2.0	2.9	2.0	3.0	2.7	2.4	1.9
35 to 44 years	4.9	6.6	3.5	6.7	3.3	6.2	5.2	3.7	3.2
45 to 54 years	8.4	11.0	5.9	11.2	5.7	10.0	8.1	6.4	4.4
55 to 64 years	11.9	14.8	9.1	14.9	9.1	14.4	10.3	8.6	5.8
65 years and older	10.2	10.3	10.0	10.1	9.8	12.0	11.9	([1])	([1])

[1] Median not shown where base is less than 75,000.

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Table 3. Median years on current job, by age, marital status, and sex, January 1981

Age	Single		Married, spouse present		Other marital status[1]	
	Men	Women	Men	Women	Men	Women
Total, 16 years old and over	1.2	1.2	6.0	3.1	4.3	3.4
16 to 24 years	.8	.7	1.2	.9	1.0	.8
25 to 34 years	2.2	2.4	3.2	2.0	2.4	1.7
35 to 44 years	4.7	6.1	6.8	3.4	5.2	3.1
45 to 54 years	10.5	10.9	11.5	6.2	6.7	4.7
55 to 64 years	16.2	14.3	15.1	9.4	10.7	8.2
65 years and older	([2])	10.7	10.3	9.8	10.9	10.0

[1] Includes widowed, divorced, and separated persons.
[2] Median not shown where base is less than 75,000.

the previous year. In addition to the higher exposure to layoffs or terminations that teenagers face, they are more likely to be working in temporary jobs by choice, as they attend school or sift through various jobs in search of a suitable career. Even when teenagers hold jobs that are career-oriented, their careers do not begin until formal schooling or military service is completed.

For all demographic groups shown (except men over 65 years old) successively higher age intervals show greater levels of job tenure. (See table 2.) The highest medians occur for men age 55 to 64—exceeding 14 years. Approximately 30 percent of men in this group have served the same employer for more than 25 years. At the other extreme, a basic rate of job changing seems to occur at every age level: close to 9 percent or more of the workers of all age groups with jobs in January 1981 had started them within the past year.

Men have higher overall median levels of tenure than women, 4 years compared with 2.5. (See table 2.) Part of this difference is because of the greater proportion of working women who are under age 25. Another factor is the greater likelihood of women leaving jobs to care for young children. Sharp male-female contrasts in tenure by age do not appear until after the women's prime childbearing years.

Overall, black workers had more years of job tenure than whites did in 1981. (See table 1.) White and black men had identical median job tenure of 4 years, but black women had worked longer than white women. (See table 2.) This difference may be related to the work patterns of those of childbearing age. White women with children under age 6 were less likely to be working than black women, and significantly fewer of the former were employed full time.[4]

Job tenure differences between sexes of the same race were also observed. (See table 2.) For whites, men had the longer tenure regardless of age. The largest relative difference in medians for white men and women occurred in the 35-to-44-year age group, where the female median was only about half that of men. Among blacks, both sexes showed only slight dissimilarities in tenure from the teens to middle age; the largest difference was found among those age 55 to 64.

The inhibiting effect young children have on the worklives of wives may help account for differences in job tenure by marital status. (See table 3.) While single men and women had small relative differences in years on the job, wives had far fewer years than husbands.

Because single persons tend to be young, the typical single man or woman has accumulated a limited number of years on their current job. The median level of job tenure for both single men and women is 1.2 years, compared with about 3.1 for wives and 6 years for husbands. At most age levels below age 54, husbands have more years on the job than single men, while wives have fewer years than their single counterparts.

Firms in growing industries usually hire new persons as they expand, and these industries will thus show correspondingly low levels of job tenure. Other establishments, in areas which are stagnant or declining, do not hire as often, letting positions expire as they become vacant. If a reduction in personnel is required, it will generally be concentrated among persons with the least seniority. Each of these actions increases the observed job tenure among those still in the industry.

Table 4. Median years on current job, by occupation, industry, and sex, January 1981

Occupation and industry	Men	Women
Total, all workers	4.0	2.5
OCCUPATION		
Professional, technical, and kindred workers	4.9	3.1
Managers and administrators, except farm	5.7	3.3
Salesworkers	3.4	1.7
Clerical and kindred workers	3.4	2.4
Craft and kindred workers	4.4	3.4
Operatives, except transport	3.5	3.1
Transport equipment operatives	3.7	3.1
Nonfarm laborers	1.8	1.9
Service workers	2.1	1.8
Farmers and farm managers	17.5	9.9
Farm laborers and supervisors	2.3	4.1
INDUSTRY		
Agriculture	7.3	4.4
Wage and salary workers	2.3	1.5
Self-employed workers	16.3	8.1
Unpaid family workers	5.2	13.3
Nonagricultural industries	3.9	2.5
Wage and salary workers	3.7	2.4
Mining	2.6	—
Construction	2.4	2.1
Manufacturing	5.2	3.2
Transportation and public utilities	5.6	3.5
Wholesale and retail trade	2.2	1.5
Finance, insurance, and real estate	4.1	2.3
Service	3.1	2.6
Public administration	6.8	3.0
Self-employed workers	6.2	3.4
Unpaid family workers	([1])	5.7

[1] Median not shown were base is less than 75,000.

NOTE: Dashes indicate data not available.

Table 5. Median years on current job of women by age, marital status, and full- and part-time status, January 1981

Age	Single		Married, spouse present		Other marital status[1]	
	Full time	Part time	Full time	Part time	Full time	Part time
Total, 16 years old and over	1.6	0.6	3.4	2.3	3.4	3.6
16 to 24 years	.8	.6	1.0	.5	.8	(²)
25 to 34 years	2.6	.9	2.4	1.2	1.7	1.2
35 to 44 years	6.2	(²)	3.8	2.4	3.2	2.3
45 to 54 years	11.9	(²)	6.7	4.8	4.8	3.8
55 to 64 years	15.3	(²)	10.7	5.8	8.7	5.5
65 years and older	(²)	(²)	11.5	7.4	11.3	8.5

[1] Includes widowed, divorced, and separated persons.
[2] Median not shown where base is less than 75,000.

In addition, job tenure will also be influenced by skill level of the work force. Employers are less likely to lay off or fire skilled workers, as it costs more in hiring and training costs to replace them.[5] Employers may try to reduce voluntary terminations of more valuable employees by linking vacation or pension benefits to increased seniority.

By industry, self-employed men in agriculture had the longest spells of job tenure. Self-employed workers in nonagricultural industries also had a high level of job tenure, although male wage and salary workers in public administration ranked highest. (See table 4.)

Since 1963, surveys have found farmers to have the longest job tenure of any occupational group. They tend to own their own farms, and remain at work regardless of cyclical fluctuations. In January 1981, median job tenure for male farmers was 17.5 years, well above that of all other occupations. Managers and administrators have the next highest level of job tenure for men, followed by professional workers. Laborers—both farm and nonfarm—have the lowest tenure on their current job. For women, the patterns by occupation are similar except farm laborers have relatively high tenure; probably these women work on family farms owned or operated by their husbands.

Tabulations of years of tenure were also compiled by full- or part-time status on one's current job. In general, part-time workers had less job tenure than full-time ones. A typical pattern is displayed in table 5, which lists job tenure for women by full- and part-time status.

For women who are widowed, divorced, or separated, relatively little difference by job status is apparent, but for wives, part-time work on the current job correlates with fewer years of tenure. Again, it seems likely that a desire to rearrange work schedules to facilitate child care is a major factor behind the relationship. ☐

FOOTNOTES

[1] This report is based primarily on information from a supplementary question, "When did . . . start working at his present job or business?" in the January 1981 Current Population Survey, conducted by the Bureau of the Census for the Bureau of Labor Statistics. Most of the data relate to persons who are 16 years old and over employed in the civilian labor force in the week ending January 17, 1981. Sampling variability may be large where numbers are small. Therefore, small differences between estimates or percentages should be interpreted with caution.

Employment figures in this study differ significantly from those reported in the regular Current Population Survey (CPS) for January 1981. The primary reason for this difference is that the job tenure data are not adjusted for nonresponse as are the CPS figures. See *The Current Population Survey: Design and Methodology*, Technical Paper No. 40 (U.S. Department of Commerce, 1978), for more information.

This is the seventh in a series of reports on this subject. The latest contained data for January 1978 and appeared in the December 1979 *Monthly Labor Review*. It was reprinted with additional tabular data and an explanatory note as *Special Labor Force Report 235*, "Job Tenure Declines as Work Force Changes." There are no comparisons in this report between 1978 and 1981 median tenure data, because of a change in the procedure used to calculate the medians. The 1981 Job Tenure Survey obtained more detail than earlier ones about persons who had begun their jobs during the previous year. Such people were asked the *month* in which they started work with their present employers. Additional information can be obtained from the Division of Labor Force Studies.

[2] Norman Bowers, "Probing the issues of unemployment duration," *Monthly Labor Review*, July 1980, pp. 23–32.

[3] "Job Tenure of Workers, January 1973," *Special Labor Force Report 172* provided an example of how this might be done.

[4] Allyson Sherman Grossman, "More than half of all children have working mothers," *Monthly Labor Review*, February 1981, pp. 44–46; and unpublished tables from the March 1981 Current Population Survey.

[5] One of the best treatments of these issues is Walter Y. Oi, "Labor as a Quasi-Fixed Factor," *Journal of Political Economy*, December 1962, pp. 538–55. Also see Donald Parsons, "Specific Human Capital: An Application to Quit Rates and Layoff Rates," *Journal of Political Economy*, November-December 1972, pp. 1120–43.

How European unions cope with new technology

STEVE EARLY AND MATT WITT

In European countries, as in the United States, computerized production systems and robots are being introduced into manufacturing plants. Electronic systems are eliminating many tasks for which workers previously were needed in warehouses, stores, banks, and insurance companies. Many secretaries, government workers, reporters, telephone operators, engineers, and technicians are working at electronic screens called video display terminals. Such changes threaten job security and could make the jobs which remain less interesting, more isolated and stressful.

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European unions generally are not trying to block technological change; rather they want to be sure such change will benefit workers as well as employers. To do this, the unions are asking for: consultation before decisions are made about new technology; technology which increases rather than replaces the workers' traditional skills, and which improves rather than worsens working conditions; protection from job losses and lower pay rates; a share in the profits and social benefits created by new technology; and assurance that new technology will not be used to undermine the union. To achieve these goals, they are giving local union committees more information and power.

By using their powerful labor parties to influence government policy, European unions have already won some new rights through legislation. For example, in Norway and Sweden, unions have the legal right to complete information about proposed new technology. Union representatives attend meetings of company boards of directors, obtain all information available to those boards, and present the union's point of view. Also, national "work environment" laws give unions the power to veto workplace changes which would adversely affect job safety and health, as many new technologies do without proper design and planning.

Through collective bargaining, European unions have won additional rights. For instance, a branch of the Norwegian Iron and Metal Workers' Union, which represents blue-collar and white-collar workers at an International Telephone and Telegraph subsidiary, has won the contract right to block any new computerized system that does not meet its approval.

In Germany, a contract covering about one-third of the metal workers guarantees against a decrease in income because of changing work assignments caused by new technology. And, at American Express, which employs 1,200 workers in banks on U.S. military bases, the German banking union won a contract prohibiting involuntary layoff or transfer of workers as a result of technological change.

A new technology benefit for Civil Service unions representing 600,000 government workers in England included a 10-percent reduction in working hours.

Another benefit, bargained by many unions in Norway, Sweden, and England, provides video display terminal operators with a 4-hour per day limit on their machines—scheduled in 2 hours on, 2 hours off rotation. This system forces employers to arrange a variety of work assignments for clericals who would otherwise be restricted to their terminals.

European unions are aided in preparing bargaining proposals by knowledge gained in union-sponsored, employer-financed training programs on new technology. Unlike U.S. unions which foot the bill for most labor education, national laws in Europe require management to pay stewards, local officers, and committee members for attending union classes.

In Sweden, Germany, Norway, and England, unions have also obtained millions of dollars in government or employer funds to pay for training courses in the new technology.

In Scandinavia, the money for training comes from national work environment or labor education funds, financed by employer contributions largely controlled by the labor movement. In West Germany and Great Britain, union training programs are subsidized by government departments of industry, research, or technology.

European unions also have obtained government or employer funds to consult with outside experts on new technology. Many unions in Norway, Sweden, and Great Britain get advice from labor-oriented computer experts from university research programs and technical institutes, such as the government-funded Norwegian Computing Center, Swedish Work Life Center, and the British Center for Alternative Industrial Technological Systems. Under a government grant, the German Metal Workers set up a national system of "innovation advice bureaus" consisting of engineers, economists, and other technicians, to help local unions evaluate and bargain over employers' new technology plans.

German unions have also been represented for several years on advisory committees which give government research and development funds to projects that improve the work environment. This allows German unions to lobby for inclusion of health and safety features into new technology at the developmental stage.

Further, German unions are seeking a requirement that they be consulted before employers and equipment suppliers are given government money to experiment with production systems, such as computerized machine tools and industrial robots.

When a local union in Europe uses its rights to respond to technological change, the results can provide quite a contrast to comparable situations in the United States. For example, metal workers at an aircraft parts plant in Kongsberg, Norway, have had far more success in coping with the introduction of computer-based machine tools than have workers at a similar plant in Lynn, Massachusetts.

At Kongsberg, the trained union technology committee received complete information before the computerized machine tools were installed. On the basis of this information, the committee insisted that machine operators already on the job be trained to do the computer programming and repairs. As a result, the machinists' skills were broadened rather than narrowed by the technological change.

In contrast, at Lynn, the equipment was installed without consultation with the union. Now supervisors or nonunion programmers handle the computer work, thereby reducing many skilled machinists to "machine tenders" or "button pushers" with less interesting work and lower pay. Job losses for union members are possible, and any future job action by the union will be less effective. ☐

Cost-of-living indexes for Americans living abroad

The U.S. Department of State has computed new indexes of living costs for selected foreign cities. These indexes compare the costs (in dollars) of representative consumer goods and services (excluding housing and education) purchased at foreign posts with the costs of comparable goods and services in Washington, D.C.

In most of the foreign cities, living costs for Americans are higher than in Washington, D.C. However, in the last 2 years, relative costs have declined in many cities, as the appreciation of the U.S. dollar exchange rate offset, in part, the higher prices abroad.

For example, although prices in Switzerland increased at the same rate as in the United States, living costs were down 22 percent in Geneva—from 176 to 137—according to the May 1981 index, because 21 percent of the higher Swiss prices was offset by the appreciation of the U.S. dollar. Similarly, living costs for Americans were down 8 percent in Tokyo—from 155 to 142—according to the February 1982 index. Japanese prices rose 3 percent more than U.S. prices over the previous year, but appreciation of the dollar offset 10 percent of the higher Japanese prices.

The new index for Rome, however, shows living costs down by only 4 percent, even though the U.S. dollar exchange rate appreciated about 25 percent, because consumer prices in Rome rose 20 percent more than prices in Washington, D.C. In some countries, recent price increases have been greater than the appreciation of the dollar. For example, the new (January 1982) index for Mexico City showed U.S. dollar costs for Americans up 6 percent over the previous year because, while the dollar appreciated 12 percent versus the peso, Mexican prices rose 19 percent more than U.S. prices. (In February, the peso was devalued, and costs for Americans have sharply declined.)

It is advisable to check the prevailing exchange rates whenever using the indexes of living costs abroad because the rates are subject to sudden shifts, and different rates would substantially affect living costs in dollars.

The indexes of living costs abroad are computed in order to establish allowances for American government employees assigned to foreign posts where the cost of living is significantly higher than in Washington, D.C. In addition, indexes are computed for American private employees. (The indexes shown in table 1 are those computed for private Americans.) The indexes and post allowances cover most living costs, except housing and education which are covered by separate allowances.

Table 1. Indexes of living costs abroad, excluding housing and education, July 1982

[Washington, D.C. =100]

Country and city	Survey date	Monetary unit	Rate of exchange per U.S. Dollar	Local index
Argentina: Buenos Aires	Aug. 1981	Peso	7350	107
Australia: Canberra	Sep. 1981	Dollar	0.8547	126
Austria: Vienna	Jan. 1982	Shilling	16.4	137
Bahrain: Manama	Nov. 1980	Dinar	0.3774	138
Belgium: Brussels	Apr. 1981	Franc	37.0	126
Brazil: Sao Paulo	Oct. 1980	Cruzeiro	58.3	96
Canada: Ottawa	Nov. 1981	Dollar	1.18	105
China: Beijing	July 1980	Yuan	1.46	96
France: Paris	Mar. 1981	Franc	4.80	153
Germany: Frankfurt	Feb. 1981	Mark	2.00	138
Hong Kong: Hong Kong	Apr. 1981	Dollar	5.40	115
India: New Delhi	Mar. 1981	Rupee	8.25	93
Israel: Tel Aviv	May 1981	Shekel	9.60	125
Italy: Rome	Feb. 1982	Lira	1300	108
Japan: Tokyo	Feb. 1982	Yen	230	142
Korea: Seoul	June 1981	Won	684	125
Mexico: Mexico, D.F	Jan. 1982	Peso	26.4	110
Netherlands: The Hague	Feb. 1982	Guilder	2.60	125
Nigeria: Lagos	Mar. 1981	Naira	0.5774	169
Philippines: Manila	Dec. 1980	Peso	7.66	104
Saudi Arabia: Al Khobar (Dhahran)	July 1981	Riyal	3.38	142
Singapore: Singapore	July 1981	Dollar	2.16	118
South Africa: Johannesburg	Nov. 1981	Rand	0.9524	103
Spain: Madrid	Feb. 1982	Peseta	99.0	114
Sweden: Stockholm	May 1981	Krona	4.80	146
Switzerland: Geneva	May 1981	Franc	2.01	137
United Arab Emirates: Abu Dhabi	May 1981	Dirham	3.64	133
United Kingdom: London	Apr. 1981	Pound	0.5000	130
U.S.S.R.: Moscow	Dec. 1981	Ruble	0.7000	142
Venezuela: Caracas	Sep. 1981	Bolivar	4.28	142

Source: U.S. Department of State, Allowances Staff.

The indexes of living costs abroad and quarters (housing) allowances for selected foreign cities are published quarterly by the Bureau of Labor Statistics. They are now available by subscription, or single copy, from the Superintendent of Documents. The new subscription series include indexes for more than 160 cities, housing allowances for about 75 cities, and hardship differentials for all important hardship posts.

U.S. Department of State Indexes of Living Costs Abroad, Quarters Allowances, and Hardship Differentials can be ordered from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Price for an annual subscription (four quarterly issues) is $6.50 domestic, $8.15 foreign; individual copies, $1.75 domestic, $2.20 foreign. A description of the statistics and overseas allowances system, *U.S. Department of State Indexes of Living Costs Abroad and Quarters Allowances: A Technical Description* (Report 568), is available from the Bureau of Labor Statistics. ☐

Special Labor Force Reports–Summaries

Labor force patterns of students, graduates, and dropouts, 1981

ANNE MCDOUGALL YOUNG

After having increased for nearly two decades, the labor force participation rate for students age 16 to 24 began to slip in 1978, starting a downward trend that was still evident in the early 1980's. Most of the decline has occurred among teenagers, especially those 16 and 17.

For out-of-school youth 16 to 24, the labor force pattern over the past two decades has mirrored the trend among adults 25 and over. Rates for young men drifted down, while those for young women advanced strongly. (See table 1.)

Detailed information on the work activity of school age youth is obtained from a special survey conducted each October. This report summarizes data that have recently become available from the 1981 survey.[1]

School and work

About 46 percent of the students 16 to 24 were in the work force in October 1981, down from nearly 49 percent in 1978. This decline may be related to a number of factors, including the possibility of greater competition with women over 24 for jobs, especially for part-time jobs, and perhaps some discouragement with employment prospects as economic growth has slowed.

Some analysts have suggested that the labor force activity of school age youth has been affected by the increased labor force participation of women.[2] For example, James Grant and Daniel Hammermesh have concluded that "competition from adult women has very likely had a negative impact on the labor market for youths."[3] During the expansionary era of the 1960's and early 1970's, student labor force rates rose along with those for women. However, in the late 1970's and early 1980's, the competition for jobs has intensified, and students were often looking for the same jobs that were also sought by older women.

The decreases in labor force participation rates of students have not changed the historical pattern by race—the highest rates being for whites, followed by Hispanics, and the lowest for blacks. However, while the participation rate for white students remained relatively unchanged from 1980 to 1981, the rate for black students dropped to the 1975 recession level. The trend for male Hispanic students has been similar to that for blacks, while the rates for Hispanic women have been too volatile to detect a trend.

Labor force participation rates for young women no longer in school have been an exception to the trend among youth, rising by 13 percentage points since 1970. In part, this rise reflects the growing proportion of young women who have completed high school, and the much higher labor force rates of graduates, compared with dropouts. Probably more important was the increase in proportion of out-of-school 16-to-24-year-old women who are not yet married—from a third in 1970 to a half in 1981.[4] Their labor force rate was 82 percent, compared with 64 percent for their ever-married (that

Table 1. Labor force participation rates for persons 16 to 24 years old, by school enrollment status, sex, and race, selected years, October 1960 to October 1981

School enrollment status and year	Both sexes	Men				Women			
		Total	White	Black	Hispanic	Total	White	Black	Hispanic
Enrolled									
1960	31.8	36.4	35.8	41.9	—	26.0	26.6	21.2	—
1965	35.0	39.8	43.3	33.3	—	28.9	30.0	20.3	—
1970	40.7	42.9	44.5	29.2	—	38.0	40.0	25.3	—
1975	44.0	44.5	47.3	27.2	40.3	43.5	45.9	30.4	32.2
1976	45.3	47.1	49.6	32.9	42.8	43.4	46.9	24.6	33.7
1977	46.8	48.3	51.3	31.1	45.3	45.2	48.8	24.1	35.7
1978	48.7	49.5	52.9	29.3	50.1	47.8	50.7	30.5	42.9
1979	47.7	48.3	51.5	30.5	42.1	47.1	50.5	32.0	32.0
1980	47.4	47.8	50.4	32.0	45.7	47.0	50.6	26.8	37.4
1981	46.2	46.7	50.1	27.5	40.2	45.7	48.7	29.9	35.8
Not enrolled									
1960	68.9	95.0	94.9	96.0	—	50.2	49.4	55.1	—
1965	70.4	94.1	94.1	93.6	—	54.1	53.5	58.3	—
1970	73.1	91.9	93.2	84.9	—	60.0	60.3	57.9	—
1975	77.8	92.1	93.7	83.2	91.3	65.8	67.3	57.5	51.2
1976	79.1	92.1	93.7	81.3	90.1	67.7	69.3	59.0	53.6
1977	80.4	93.2	94.3	86.0	94.1	69.3	72.5	62.8	51.0
1978	81.6	93.1	94.2	85.4	92.9	71.4	72.8	63.3	59.4
1979	81.5	92.5	93.6	85.3	93.1	71.6	73.5	60.5	61.5
1980	81.6	91.8	93.5	82.4	89.6	72.3	74.3	62.6	58.2
1981	81.9	91.7	93.4	82.5	90.3	73.0	74.7	65.3	61.2

NOTE: Rates are labor force as percent of population.

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is, married, divorced, separated, or widowed) counterparts. Labor force participation of women no longer in school rose regardless of race or ethnicity.

In general, there has been a relatively steady decline in the labor force participation rates of black male youth no longer in school. Whereas their labor force rate equaled that of their white counterparts in 1960, by 1981 there was a 10-percentage point difference. Research on the declining participation rates has produced contradictory results regarding the influence of the suburbanization of many youth jobs, the significance of the minimum wage, and the importance of personal characteristics which youth bring to the job.[5]

Some reports have suggested that because of various forms of discouragement—such as high unemployment rates among peers, older friends, and neighbors; the limited range of jobs available; and the perception of lingering discrimination—some youth may have decided that the job search was not worth continuing. Paul Osterman's study of labor force activity among inner-city youth, based on decennial census data, showed that there was "a considerably more powerful discourage-

Table 2. Employment status of persons 16 to 24 years old, by school enrollment status, years of school completed, sex, age, and race, October 1980 and 1981

[Numbers in thousands]

Characteristics	Population		Labor force		Unemployment rate	
	1980 Revised	1981	1980 Revised	1981	1980 Revised	1981
ALL PERSONS						
Total	37,103	36,946	24,921	24,583	13.9	14.8
Enrolled, total	15,713	15,909	7,454	7,352	13.7	14.4
Men	7,997	8,150	3,825	3,803	14.8	14.3
Women	7,716	7,759	3,629	3,549	12.5	14.6
16 to 19 years	11,126	11,206	4,836	4,706	16.7	18.1
20 to 24 years	4,587	4,700	2,618	2,646	8.2	7.8
High school	8,050	8,108	3,461	3,276	19.0	20.0
College	7,664	7,800	3,996	4,076	9.1	10.0
Full-time students	6,396	6,503	2,854	2,901	10.5	11.9
Part-time students	1,268	1,297	1,142	1,175	5.7	5.1
Not enrolled, total	21,390	21,037	17,467	17,231	14.0	15.0
Men	10,245	10,018	9,405	9,185	14.9	15.2
Women	11,145	11,019	8,062	8,048	12.9	14.7
School completed:						
High school:						
Less than 4 years	5,230	5,142	3,530	3,501	25.3	26.9
16 to 19 years	2,025	1,921	1,297	1,258	29.1	32.9
20 to 24 years	3,205	3,222	2,233	2,246	23.0	23.6
4 years only	11,654	11,451	9,809	9,673	12.5	13.8
College:						
1 to 3 years	3,038	2,926	2,716	2,613	8.8	8.6
4 years or more	1,467	1,517	1,408	1,443	5.8	5.3
WHITE						
Total	31,345	31,110	21,811	21,474	11.9	12.5
Enrolled, total	13,242	13,312	6,688	6,576	11.9	12.5
Men	6,821	6,853	3,437	3,431	12.9	13.2
Women	6,421	6,459	3,251	3,145	11.0	11.7
16 to 19 years	9,270	9,285	4,367	4,242	14.8	15.6
20 to 24 years	3,972	4,027	2,321	2,334	6.5	6.8
High school	6,566	6,572	3,096	2,946	16.7	17.0
College	6,678	6,740	3,592	3,632	7.9	8.8
Full-time students	5,567	5,613	2,579	2,601	8.9	10.4
Part-time students	1,109	1,127	1,012	1,031	5.1	4.8
Not enrolled, total	18,103	17,798	15,123	14,898	11.9	12.5
Men	8,714	8,562	8,146	7,996	13.1	13.1
Women	9,389	9,236	6,977	6,902	10.5	11.7
School completed:						
High school:						
Less than 4 years	4,166	4,107	2,931	2,890	21.6	22.7
16 to 19 years	4,511	4,132	3,628	3,307	16.5	19.0
20 to 24 years	13,582	13,663	11,495	11,587	10.5	10.6
4 years only	10,025	9,778	8,597	8,417	10.8	11.6
College:						
1 to 3 years	2,588	2,511	2,340	2,253	7.2	6.7
4 years or more	1,324	1,402	1,255	1,338	5.7	5.0
BLACK						
Total	4,892	4,933	2,649	2,671	29.9	33.2
Enrolled, total	2,028	2,083	590	587	32.0	35.4
Men	952	1,010	303	268	35.6	26.9
Women	1,076	1,072	287	320	28.2	42.2
16 to 19 years	1,566	1,598	371	368	37.2	45.4
20 to 24 years	462	485	219	219	23.3	18.7
High school	1,282	1,303	292	280	40.8	49.3
College	747	780	298	307	23.5	22.5
Full-time students	641	661	214	222	29.9	28.4
Part-time students	106	119	84	85	7.1	7.1
Not enrolled, total	2,864	2,850	2,059	2,084	29.3	32.7
Men	1,322	1,292	1,089	1,065	28.9	31.2
Women	1,542	1,558	970	1,019	29.8	34.2
School completed:						
High school:						
Less than 4 years	955	913	543	552	44.0	48.2
16 to 19 years	723	684	441	425	45.7	49.9
20 to 24 years	2,141	2,165	1,618	1,660	24.9	28.2
4 years only	1,431	1,501	1,106	1,144	26.2	29.5
College:						
1 to 3 years	372	348	305	306	22.3	22.5
4 years or more	106	88	103	84	5.8	8.3
HISPANIC						
Total	2,624	2,686	1,650	1,654	15.5	15.5
Enrolled, total	920	985	377	375	17.8	16.0
Men	455	517	208	208	17.8	17.8
Women	465	467	170	167	17.6	13.8
16 to 19 years	705	753	241	227	21.6	19.4
20 to 24 years	215	232	137	148	10.2	10.8
High school	579	627	184	180	23.9	20.0
College	341	358	193	195	12.4	11.3
Full-time students	255	288	116	127	10.2	11.0
Part-time students	86	69	77	68	14.3	(1)
Not enrolled, total	1,704	1,701	1,273	1,279	14.8	15.4
Men	840	816	752	737	14.4	15.6
Women	864	885	521	542	15.5	15.1
School completed:						
High school:						
Less than 4 years	922	891	628	620	18.9	18.1
16 to 19 years	487	486	337	333	20.2	24.6
20 to 24 years	1,217	1,215	936	945	12.9	12.3
4 years only	589	634	478	501	12.3	15.0
College:						
1 to 3 years	155	141	129	123	3.9	8.1
4 years or more	38	36	35	33	(1)	(1)

[1] Percent not shown where base is less than 75,000.

NOTE: Because of rounding, sums of individual items may not equal totals.

ment effect" for black youth in 1970 than in 1960 and reasoned that "this doubtlessly explains the adverse participation trends over the decade."[6] A recent study suggests that some black out-of-school teenagers whose families were on welfare may be inhibited from working because their family allowance would be reduced by the amount of their earnings.[7]

Unemployment rates

Unemployment rates for youth in and out of school have fluctuated considerably since 1970. From 13.2 percent for the enrolled and 10.9 percent for not enrolled youth in 1970, they reached 15.0 and 14.9 percent in 1975, dropped to 12.5 and 10.0 percent in 1978, and climbed back to 14.4 and 15.0 percent in October 1981. These changes reflected not only the recessions in 1975 and 1981, but also continuing problems with finding part-time jobs to fit the schedules of students, and full-time jobs to match the varying skills and educational attainment of out-of-school youth. While it is to be expected that youth unemployment rates would be particularly vulnerable to cyclical changes, the rates for youth have been much higher during the past decade than in the 1960's.

Within the enrolled group, the unemployment rate for male students was relatively unchanged over the year, whereas the rate had increased sharply for women. (See table 2.) Most of the rise occurred among female high school students but teenage women in college were also affected. Only the 20-to-24 age group was untouched by increased joblessness. The unemployment rate for black teenage students rose to 45.4 percent over the year, nearly three times that for whites. Again, most of the increase was among women in high school. Hispanic students' jobless rate remained stable.

Among youth no longer in school, unemployment rates ranged from 5.3 percent for college graduates to 26.9 percent for high school dropouts. As was the case for students, the burden of increased unemployment over the year was limited to women. Their overall unemployment rate rose almost 2 percentage points while the rate for men held steady. Only women who had graduated from college showed no change in their unemployment rate, which continued to be somewhat lower than the rate for male college graduates in the age group. Out-of-school black youth have historically had very high unemployment rates; in October 1981, about a third of those in the labor force were looking for work. The unemployment rate for Hispanic youth (15.4 percent) differed little from that for whites.

Recent graduates and dropouts

A record 1.6 million youth who graduated from high school in 1981 were attending college in October 1981. (See table 3.) Some 54 percent of all recent graduates were enrolled, compared with 49 percent a year earlier. A similar surge in college enrollment occurred during the 1974–75 recession when many youth chose school as an alternative to unemployment or a less desirable job. The labor force participation rate of new college students was 44 percent, substantially higher than in the early 1970's, reflecting, in part, the increase in work-study programs associated with student aid.[8]

Most recent high school graduates who did not go on to college were in the labor force in October. At 84 percent, their labor force participation rate was also higher than in 1970, mostly because of an increase in the rate for women. The unemployment rate for recent graduates not in college—21.4 percent—was substantially

Table 3. School enrollment and labor force status of 1981 high school graduates and 1980–81 high school dropouts 16 to 24 years old, by sex and race, October 1981

[Numbers in thousands]

Characteristic	Civilian noninstitutional population	Civilian labor force				
		Number	Participation rate	Employed	Unemployed	
					Number	Percent
Total, 1981 high school graduates	3,053	1,899	62.2	1,524	375	19.7
Men	1,490	927	62.2	772	155	16.7
Women	1,563	972	62.2	752	220	22.6
White	2,624	1,674	63.8	1,406	268	16.0
Black	358	189	52.8	93	96	50.8
Hispanic	146	77	52.7	61	16	20.8
Enrolled in college	1,646	719	43.7	597	122	17.0
Men	816	341	41.8	300	41	12.0
Women	830	378	45.5	297	81	21.4
Full-time student	1,520	612	40.3	499	113	18.5
Part-time student	126	107	84.9	98	9	8.4
White	1,434	644	44.9	552	92	14.3
Black	154	47	30.5	27	20	(1)
Hispanic	76	27	35.5	25	2	(1)
Not enrolled in college	1,407	1,180	83.9	927	253	21.4
Men	674	586	86.9	472	114	19.5
Women	733	594	81.0	455	139	23.4
Single	616	522	84.7	396	126	24.1
Other marital status	117	72	61.9	59	13	(1)
White	1,190	1,030	86.6	854	176	17.1
Black	204	142	69.6	66	76	53.5
Hispanic	70	50	(1)	36	14	(1)
Total, 1980-81 high school dropouts[2]	714	450	63.2	286	164	36.4
Men	366	271	74.0	192	79	29.2
Women	348	179	51.7	94	85	47.5
Single	275	146	53.1	78	68	46.6
Other marital status	73	35	(1)	18	17	(1)
White	532	363	68.2	257	106	29.2
Black	165	77	46.7	22	55	71.4
Hispanics	91	63	69.2	41	22	(1)

[1] Percent not shown where base is less than 75,000.

[2] Persons who dropped out of school between October 1980 and October 1981. In addition, 78,000 persons 14 and 15 years old dropped out of school.

Note: Because of rounding, sums of individual items may not equal totals.

Table 4. Labor force status of college students 16 to 24 years old, by enrollment status and type of college attended, October 1981

[Numbers in thousands]

Selected characteristics	Enrolled		Full-time students			Part-time students		
	Total	Percent	Total	2-year college	4-year college	Total	2-year college	4-year college
POPULATION								
Total	7,799	100.0	83.3	19.3	64.0	16.7	8.8	7.9
White	6,741	100.0	83.2	18.9	64.3	16.8	8.8	8.1
Black	781	100.0	84.6	20.1	64.5	15.4	8.5	6.9
Hispanic	358	100.0	80.0	33.9	46.2	19.9	15.7	4.3
LABOR FORCE								
Total	4,075	100.0	70.9	21.5	49.4	29.1	15.2	13.8
White	3,632	100.0	71.3	21.2	50.1	28.7	14.9	13.8
Black	318	100.0	68.9	21.6	47.3	31.1	14.5	16.6
Hispanic	195	100.0	66.1	32.3	33.9	33.8	25.9	7.9
LABOR FORCE PARTICIPATION RATE[1]								
Total	52.3	—	43.8	57.4	39.7	89.4	88.6	90.3
White	53.9	—	45.7	60.1	41.5	90.8	90.6	91.1
Black	40.7	—	31.1	40.9	28.0	77.2	(3)	(3)
Hispanic	54.5	—	44.5	51.3	39.5	(3)	(3)	(3)
UNEMPLOYMENT RATE[2]								
Total	10.0	—	9.4	11.4	8.5	3.6	4.2	3.0
White	8.8	—	8.4	9.6	7.9	3.7	4.4	2.9
Black	22.0	—	23.1	(3)	16.4	4.5	(3)	(3)
Hispanic	10.3	—	9.6	(3)	(3)	(3)	(3)	(3)

[1] Labor force as percent of population.
[2] Unemployed as percent of labor force.
[3] Percent not shown where base is less than 75,000.

higher than a year earlier. It was also higher than the rate for all youth in the age group with 4 years of high school only (13.8 percent).

College students at work

Labor force participation of students is constrained by geography, classroom schedules, and transportation facilities, as well as general conditions in the economy. With opportunities for employment generally limited to the vicinity of the college, the growth of 2-year colleges in metropolitan areas has allowed many persons to further their education while holding down a job. The particular importance of employment for part-time students is shown in table 4. Almost 9 of 10 such students were in the labor force in October 1981.

The close connection between part-time schooling and labor force activity is further illustrated by the low unemployment rates for such students, regardless of race or ethnic origin. The decision to attend college part time, and the means to pay for it, appear to be directly linked to the desire for advancement by youth already employed. The unemployment rates for part-time students were about the same for whites and blacks and were consistently much lower than the rates for full-time students.

Hispanic youth, some of them relatively new to the United States,[9] have made extensive use of low cost, 2-year community colleges—almost 50 percent of all Hispanic college students were enrolled in such colleges in 1981, compared with 28 percent of the white, and 29 percent of the black students. More than half of the Hispanic students were working while attending school.

Black students were much less likely than either white or Hispanic students to combine work and college. The lower labor force participation rates of black college students have persisted despite their much lower family income. A third of their families had incomes of less than $15,000 compared with a tenth of the white families and a fourth of the Hispanic families with students in college in 1981. Whereas many jobs in retail sales, food, and other service industries have moved to suburban malls, the majority of black students live in central cities.[10] Lack of convenient transportation may limit their access to jobs located on the periphery of the city. The substantial number of students attending the many black colleges located in rural areas also face limited employment opportunities. □

FOOTNOTES

[1] This report is based primarily on supplementary questions in the October 1981 Current Population Survey, conducted and tabulated for the Bureau of Labor Statistics by the Bureau of the Census. Most data relate to persons 16 to 24 years of age in the civilian noninstitutional population in the week ending Oct. 17, 1981.

Sampling variability may be relatively large in cases where the numbers are small. Small estimates, or small differences between estimates, should be interpreted with caution. For the most recent report in this series, see Anne McDougall Young, "Labor force activity among students, graduates, and dropouts in 1980," *Monthly Labor Review*, July 1981, pp. 31–33.

[2] See Howard Hayghe, "Marital and family patterns of workers: an update," *Monthly Labor Review*, May 1982, pp. 53–56.

[3] James H. Grant and Daniel S. Hammermesh, "Labor Market Competition Among Youths, White Women and Others," *Review of Economics and Statistics*, August 1981.

[4] Unpublished data, October supplement to the Current Population Survey, Bureau of Labor Statistics.

[5] For example, see Charles W. Dayton, "The Young Person's Job Search: Insights from a Study," *Journal of Counseling Psychology*, July 1981, pp. 321–333; Minimum Wage Study Commission, *Report of the Minimum Wage Study Commission*, 7 volumes, May–June 1981; James Franncis Ragen, Jr., "The Impact of Minimum Wage Legislation on the Youth Labor Market," PhD Thesis, Washington University, December 1975; Arvil V. Adams and Garth L. Mangum, *The Lingering Crisis of Youth Unemployment*, Upjohn Institute for Employment Research, June 1978. See also U.S. General Accounting Office, "Labor Market Problems of Teenagers Result Largely From Doing Poorly in School," *Report to the Honorable Charles Rangel*, U.S. House of Representatives, Mar. 29, 1982.

[6] Paul Osterman, *Getting Started, The Youth Labor Market*, The MIT Press, 1980, p. 126.

[7] *Report to the Honorable Charles Rangel*, p. 54.

[8] National Center for Education Statistics, *The Condition of Education, 1980 Edition*, Table 4.18.

[9] "Persons of Spanish Origin in the United States: March 1979," *Current Population Reports*, Series P-20, No. 354, p. 17.

[10] Unpublished data from the 1981 Current Population Survey.

Major Agreements Expiring Next Month

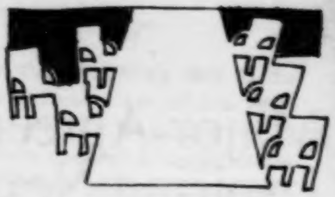
This list of collective bargaining agreements expiring in October is based on contracts on file in the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more.

Employer and location	Industry	Labor organization[1]	Number of workers
American Enka Corp. (Lowland, Tenn.)	Chemicals	United Textile Workers	2,400
Bayly Corp. (Interstate)	Apparel	Clothing and Textile Workers	1,200
Chain and Independent Food Stores (New Mexico)[2]	Retail trade	Food and Commercial Workers	2,300
Colonial Stores, Inc., Raleigh Division (North Carolina)	Retail trade	Food and Commercial Workers	1,400
Consolidated Gas Supply Corp. (Interstate)	Utilities	Service Employees	1,750
Cotton Garment and Outerwear Agreement (Philadelphia, Pa.)[2]	Apparel	Clothing and Textile Workers	1,550
Dayton Power and Light Co. (Ohio)	Utilities	Utility Workers	2,600
General Motors Corp. (Interstate)	Transportation equipment	Plant Guard Workers (Ind.)	2,550
General Telephone Company of Illinois, Service, Construction and Supply Departments (Illinois)	Communication	Electrical Workers (IBEW)	1,750
GTE Sylvania, Inc. (Seneca Falls, N.Y.)	Electrical products	Steelworkers	1,000
Hesston Corp. (Hesston, Kans.)	Machinery	Hesston Corporation Workers Association	1,450
Hotel Association of Ohio (Ohio)	Hotels	Hotel Employees and Restaurant Employees	1,600
Jewel Companies, Inc., Eisner Food Stores Division (Chicago, Ill.)	Retail trade	Retail Workers	1,400
Mack Trucks, Inc., Master Shop Agreement (Interstate)	Transportation equipment	Auto Workers	6,250
Massey-Ferguson, Inc., Master Agreement (Interstate)	Machinery	Auto Workers	1,500
Pittsburgh Buildings Association (Pennsylvania)	Services	Service Employees	1,200
Retail Butchers Fish and Poultry Agreement (California)[2]	Retail trade	Food and Commercial Workers	3,500
Retail Meat Markets and Frozen Food Locker Plants (California)[2]	Retail trade	Food and Commercial Workers	1,500
Rubbermaid, Inc. (Wooster, Ohio)	Rubber	Rubber Workers	1,300
Simmons Co. (Interstate)	Furniture	Upholsterers	2,100
TRW, Inc. (Ohio)	Transportation equipment	Aircraft Workers Alliance, Inc. (Ind.)	4,000
Wisconsin Public Service Corp. (Wisconsin)	Utilities	Operating Engineers	1,000

[1] Affiliated with AFL-CIO except where noted as independent (Ind.).

[2] Industry area (group of companies signing same contract).

Developments in Industrial Relations



Job security focus of GE contract

After 2 months of negotiations, the General Electric Co. and 13 unions representing 100,000 workers settled on 3-year contracts that featured improved job security provisions. The breakthrough in the negotiations occurred when the two unions that bargain with GE on a "national" basis—the International Union of Electrical Workers (representing 65,000 workers) and the United Electrical, Radio, and Machine Workers (13,000 workers)—settled. Afterwards, the other member unions of the Coordinated Bargaining Committee settled on the same terms. Six of the unions had initiated the committee in 1965 to strengthen their bargaining position with GE and with Westinghouse Electric Corp. (See "Collective Bargaining in the Electrical Machinery, Equipment, and Supplies Industry," *Current Wage Developments*, March 1982, pp. 42–44.)

One of the job security provisions specifies that workers shifted to lower-rated jobs because of the transfer of work or the introduction of robots or automated manufacturing machines will be guaranteed their former pay rate for 26 weeks. Following are other job-security provisions which are separate from the existing Income Extension Aid Program that applies only to laid-off workers:

- GE agreed to give a 6-month notice of plant closings or transfers of work and a 60-day notice before the use of robots or automated manufacturing machines.
- The lump-sum severance payment for 15-year workers affected by plant closings was increased from 1 week to 2 weeks of pay for each year of service. For other employees with at least 2 years of service, the payment was set at 1.5 weeks of pay for each year, with a minimum of 4 weeks of pay.
- A liberalized table of age and service requirements that made more terminated employees eligible for monthly income instead of severance pay until they are re-employed or reach optional retirement age. Under the revised table, eligibility ranges from employees age 50 with 25 years of service to those who are age 55 with 10 years of service. The benefit equals 2 percent of monthly pay multiplied by years of service, up to 50 percent of current pay.
- Employees at least 50 years of age with a minimum of 25 years of service who are affected by plant closings will not have their pensions actuarily reduced. Instead, their benefits will be calculated as if they are age 60. They will also receive a supplement of up to $175 a month until age 62.
- Employees with at least 7 years of service who are affected by plant closings will have a vested pension right.
- Displaced workers will receive job placement assistance and up to $1,800 for education and retraining.
- Employees who are at least age 50 with at least 25 years of service who are affected by plant closings will continue to be covered by company-financed medical and life insurance until they are 65 or find another job. Dependents also will be eligible for insurance continuation, if they continue to make a contribution toward the premium cost.

The accord called for a June 28, 1982, general pay increase of 7 percent plus a special "decompression" pay adjustment of 2 cents an hour for employees earning $8.35 to $8.49 an hour, 4 cents for those earning $8.50 to $8.64, 6 cents for those earning $8.65 to $8.79, and so forth. The parties indicated that the special pay adjustment for higher skilled workers and the percentage general increase (rather than a flat cents per hour increase of equal cost) were provided to relieve a compression of the pay rate structure.

The workers also will receive 3-percent specified pay increases in June of 1983 and 1984. The provision for automatic semiannual cost-of-living pay adjustments was modified to provide for pay increases of 1 cent an hour for each 0.175-percent rise in the Consumer Price Index for Urban Wage Earners and Clerical Workers, beginning June 27, 1983. The first adjustment during

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the agreement term (on December 27, 1982) will be calculated at the previous rate of 1 cent for each 0.2-percent movement in the index.

The parties said that specified and cost-of-living pay adjustments will average $2.10 an hour, or 23.3 percent, over the agreement term, based on an assumed price index rise of 6 percent a year.

There were a number of improvements in the pension plan. Under the formula that applies to most retiring workers, benefit rates were raised to $12–$17.50 a month, varying according to pre-retirement average annual earnings, for each year of service, effective July 1, 1982, and to $14–$19.50 on January 1, 1984. The previous range was from $10 to $15. Comparable changes also were made in the alternate pension formula. Beginning in 1983, the employee contribution toward pensions will be 3 percent of that portion of annual earnings in excess of $12,000 (formerly $9,000).

Other improvements included 5 weeks of vacation after 20 years of service, instead of 25 (maximum time off remained at 6 weeks after 30 years); $500,000 instead of $350,000 catastrophic medical coverage; $30,000 instead of $20,000 minimum life insurance; and starting in 1983, $225 instead of $200 maximum sickness and accident benefits for disabilities.

Negotiations were continuing at Westinghouse, where contracts in recent years have usually been patterned after GE agreements. The Westinghouse negotiations involve more than 50,000 workers.

Teamsters, United Parcel Service settle

Nearly 85,000 Teamsters members were covered by an agreement with United Parcel Service (UPS) that did not provide for any specified wage increases over its 37-month term, ending on June 1, 1985. This was similar to the union's settlement with the general trucking industry. (See *Monthly Labor Review*, April 1982, p. 64.)

The UPS settlement followed the trucking agreement in changing from semiannual to annual cost-of-living adjustments calculated at 1 cent an hour for each 0.3-point movement in the Consumer Price Index for Urban Wage Earners and Clerical Workers (1967=100). Both settlements called for diverting part or all of the cost-of-living adjustments to meet the cost of maintaining existing levels of pension and insurance benefits. However, there was no diversion from the 72-cent May 1982 adjustment for UPS workers, in contrast to the general trucking workers, whose April adjustment was reduced by 25 cents an hour.

A paid holiday also was added, bringing the total to 10 to 15 days a year, depending on the region. This was the second agreement negotiated on a national basis; previously, agreements were negotiated on a regional basis.

One major provision in the UPS agreement stipulates that part-time workers hired in the future be paid lower rates—$8 an hour for unskilled workers who load and unload trucks, and $9 for skilled workers who sort parcels. All of the company's drivers are full time.

These reduced rates, and the lack of specified wage increases, drew strong criticism from Teamsters for Democratic Union, a dissident group that has been contesting the union's leadership in recent years. The organization claimed that the pay freeze was not warranted because UPS was operating at a profit, unlike many freight companies, and that the special pay rates would induce UPS to increase its percentage of part-time workers. Despite this criticism, the vote tally was 33,072 to 29,788 in favor of the contract, not close to the two-thirds negative vote needed for rejection.

Ship officers and engineers give back pay increase

More than 7,000 licensed marine ship's officers agreed to roll back a June pay increase of 7.5 percent in response to a request from the Reagan Administration. Jesse Calhoun, president of the Marine Engineers Beneficial Association, said members of his union accepted the cut to aid the Administration's effort "to develop an affirmative and much needed maritime program." Two unions of unlicensed seamen, the Seafarers' International Union and the National Maritime Union, rejected the request, saying that their labor contracts "are by no means out of line with the economic realities of the maritime industry, or the Nation as a whole."

Utility contract features lifetime job security

More than 3,500 employees of the Potomac Electric Power Co. in Maryland, Virginia, West Virginia, and the District of Columbia were covered by a settlement negotiated by the International Brotherhood of Electrical Workers that called for pay increases of 9, 8, and 8 percent in June of 1982, 1983, and 1984. The 3-year accord also provides "lifetime job and pay security" to employees with 12½ years of seniority. According to the union, eligible employees "cannot be furloughed or reduced in pay due to lack of work, plant closings, reorganizations, automation, etc." In return, the workers agreed to changes in "duties and responsibilities" provisions to improve operating efficiency.

A company source said the changes in duties and responsibilities provisions permit PEPCO to adapt to changing conditions and operations by making changes in job content without union approval. This provision is subject to review after a 2-year trial period.

Other contract terms included—

- A 3.3-percent special pay increase to 1,500 workers whose job content had been increased in the past without a commensurate pay increase. This special adjustment was in exchange for ending all of the grievances employees had filed because of the job content changes.

- A new absence and sick leave program designed to reward workers with good attendance and penalize those with poor records.
- Establishment of a company-financed dental care plan.
- Elimination of the provision for an automatic cost-of-living pay adjustment. (The adjustment under the prior contract was 20 cents, effective March 1, 1982.)

Six-month raises for supermarket workers

In the New York City area, 13,000 workers were covered by a settlement between United Food and Commercial Workers Local 1500 and 10 supermarket chains. The 3-year contract provided for full-time employees to receive a wage increase of $90 a week, consisting of a $30 immediate increase, followed by $20, $10, $20, and $10 increases at 6-month intervals, beginning in June 1983. Increases for part-time workers were 50, 30, 15, 30, and 15 cents an hour on the corresponding dates.

The pension rate for full-time workers was increased to $17 a month for each year of credited service (from $11) effective September 1, 1982, and to $20 in September 1984. It will be financed by a two-step increase in the employer's funding obligation to $71.55 a month, from $45. Employer funding of pensions for part-time workers also was raised and they will continue receiving benefits at half the rate that applies to full-time workers.

The employers' financing of welfare benefits for full-time employees was increased by $20 a month (to $108) over the term to permit a number of improvements, including $250,000 major medical coverage (formerly $100,000); $20,000 (instead of $10,000) life and accidental death and dismemberment insurance; a prescription drug coverage plan; and increasing dental and vision care coverage. There also were improvements in welfare benefits for part-time workers.

Other provisions included a fifth week of vacation for full-time employees with 25 years of service and a prohibition of mandatory lie detector testing.

Warehouse workers get new contract

In Northern California, the Teamsters and International Longshoremen's and Warehousemen's unions settled jointly with two warehouse associations on 3-year contracts for 5,000 workers. The settlement with the Industrial Employers and Distributors Association and the San Francisco Employers Council also had a wider impact, as the two unions then won similar terms for 15,000 other warehouse workers.

Wages will increase by 32 cents an hour in December 1982 and 24 cents in June of 1983 and 1984, bringing the contract minimum wage rate to $11.59 an hour. The cost-of-living clause, which was not changed, provides for pay adjustments in June of 1983 and 1984 each equal to 1 cent an hour for each 0.3-point rise in the Consumer Price Index for All Urban Consumers (1967 = 100) in excess of 7.2 index points during the preceding 12 months, with no credit toward the adjustments for any rise in excess of 11 percent. The parties estimated that the resulting adjustments will total 89 cents, assuming rise of 7 percent a year.

Both contracts provided for a 37-cent-an-hour increase in employer financing of benefit improvements, which were not identical for both unions.

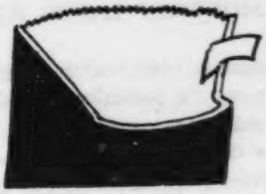
Employer need not remain neutral, NLRB rules

The National Labor Relations Board reversed a policy initiated in 1945 by holding that employers do not have to stay strictly neutral when unions compete for the right to represent their employees. The new policy was manifested in rulings involving a subsidiary of RCA Corp. located in Puerto Rico and the Bruckner Nursing Home, located in New York.

In the RCA case, the board held that the employer must continue to recognize and negotiate with an incumbent union when another union asks the board to conduct a representation election. The board said this approach should further "stability in industrial relations" while ensuring "employee free choice."

In the nursing home case, the board held that a nonunion employer need not remain neutral until an election petition is filed by one of the competing unions. Instead, the employer voluntarily may recognize the union that signs up an "uncoerced, unassisted" majority of workers in a bargaining unit. □

Book Reviews



The long struggle of working women

Out to Work: A History of Wage-Earning Women in the United States. By Alice Kessler-Harris. New York, Oxford University Press, 1982. 400 pp. $19.95.

The idea of writing a history of wage-earning women in the United States was an excellent one and Alice Kessler-Harris provides much information, particularly about the period before the Second World War. It is also refreshing to read a work on the role of women in the economy written from the perspective of a historian rather than a sociologist or economist. The book is clearly well researched and brings many unfamiliar sources to print.

In some sense, however, it is these strengths of the book that are also its weaknesses. The historian's approach, focusing on letters and other primary sources, seems to one accustomed to social science research to be generalizing from anecdotes rather than from data. Moreover, misunderstandings of the nature of change often occur from the use of anecdotal evidence. For example, today we are familiar with articles that include interviews with female plumbers, auto mechanics, and truckdrivers. While it is true that some women have moved into traditionally male occupations, it would be wrong to conclude that such occupational changes have become commonplace. Thus, it is natural to wonder whether the letters of Ann Appleton to her sister Sarah in 1847, or those of Lucy Davis, or Melinda Edwards or the others, are truly representative. The relevance of the historical approach could have been supported by a greater use of the available statistics to set the stage.

The work could also have benefited from better integration with developments in American economic history. The role of all workers, and especially women, has been influenced by changes in the industrial structure of the Nation, the types of goods and services that were demanded, and the organizational structure that was established to supply the demand.

The book is at its best covering the world of work among women with little education. Manual workers, those in sales and clerical jobs, and domestic workers all play a major role in the book, but professional women are barely mentioned, although women have been working in nursing, teaching, and other "helping professions" for many years.

The coverage of the period since the Second World War is very sparse; actually, it might have been better for it to have been omitted altogether. So much has been written about this period in other books and journals that the coverage in *Out To Work* seems superficial.

No book can be expected to provide complete coverage, however; and despite its limitations the work fills a serious gap in our knowledge about working women in the 18th and 19th centuries. It reminds us most dramatically that the road to the present was not a straight or level one and that working women in the past suffered problems that are hard to even imagine today.

A few statistics can help put the transformation in perspective. Prior to 1900, less than one-sixth of all working women were married; today more than half are. In 1900, more than half of women who worked held blue-collar or private household jobs; today, only one-sixth are engaged in those types of employment. The proportion of all women in the paid work force went from one-fifth in 1900, to one-fourth in 1940, to one-third in 1960 and one-half in 1980. At the same time, the typical job held by a woman was transformed from one requiring long hours of physically tiring work to one that was likely to be sedentary, in clean and safe surroundings, and otherwise more desirable.

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Race, class, and income inequality

Racial Inequality. By Michael Reich. Princeton, N.J., Princeton University Press, 1981. 345 pp. $22.50.

This book may prove tough going for readers who do not share the author's political perspective, class conflict. Michael Reich believes that racial discrimination against blacks affects white workers as well and proposes "a broad interracial [working] class alliance" to redistribute economic and political power.

Others may view the combination of a Marxian-tinted framework and rigorous econometric analysis as novel. But it is quite possible to both find Professor Reich's review of persistent income inequality by race well developed, while rejecting his singular interpretation and solutions.

Reich's analysis examines the embedded effects of a socioeconomic class structure rather than standard discrimination theory to explain income differences by race. Because neoclassical theory does not envision persisting differences, especially in the long run, the book makes a valuable contribution in its clear exposition of those discrepancies.

In his focus on economic inequality rather than employment discrimination, the author provides an explanatory framework for how such differences can persist. This focus almost ignores gains by individuals, especially by race, however, leaving Reich with results not necessarily related to his interpretation.

Employment gains by blacks over the past decade attributable to voluntary or judicially directed compliance with the Civil Rights Act, or to enhanced access to job-qualifying education and training, play no role in Reich's schema, for example. A wage-subsidization-by-race effect of the magnitude required to demonstrate such a phenomenon is not possible where industrial wages are set by job level and seniority, not worker characteristics.

To the extent that preferable job assignments, carrying higher wage levels, are improperly distributed by race in a few instances, legal remedies exist for redress. Reich's results, drawn from 1960 and 1970 census data, unfortunately fail to reflect changes over the past decade affecting the conclusions that may be drawn from them.

The underlying hypothesis rests on several findings. In particular, Reich found that owners of capital, and whites in the upper decile, are concentrated in those areas where racial income inequality is most extreme and the presence of a redistributive effect of this inequality away from white as well as black workers.

But because the geographic redistribution of American wealth into energy-related capital strongly overlaps those regions where income is less evenly distributed to begin with, a nexus tying race and class to earnings ultimately fails to illuminate the question. If the author wants to assert that discrimination against blacks harms all but wealthy whites (what about wealthy blacks?), more clearly developed proof is required. It is not provided.

Reich's critique of the major neoclassical models, and why they lack explanatory value as to racial discrimination is crisply written, building on his previous work. The author's own theory would have to show more persuasively how the owners of capital consciously scheme to deprive wage earners of anything on the basis of race beyond the compensation package, particularly as to terms and conditions of employment.

As Reich said of Gary Becker's pioneering study on the economics of discrimination, "it deserves much credit for bringing the subject into the mainstream of economic analysis." Similarly, this study deserves credit for its effective summary and review of the extant literature, and the tenuous relevance of much of accepted theory to a persisting long-term problem.

But a cogent critique of earlier theory does not imbue the author's own work with validity. Reich pinpoints the difference wherein neoclassical theory treats labor strictly as a commodity rather than a combined commodity and dynamic noncommodity, capable of interacting with the other factors of production. This does not explain how the combination of market processes and capitalist-worker conflict will result in a lessening of inequality, however.

Furthermore, Reich identifies managers and professionals as an intermediate group "between" workers and capitalists. Yet the presence of this stratum suggests that the working class solidarity required for any major shift in economic power is completely absent.

The dichotomy between the author's analysis and conclusion is further illustrated by his statement: "The class conflict theory accords with econometric evidence indicating that most white workers are hurt by racism. These results strengthen the advantages of the class conflict theory over the neoclassical theory." While that view is open to debate, it is nonetheless a *non sequitur* to the material that precedes it pertaining to the distinction among and between the factors of production.

The lack of movement toward Reich's solution, an interracial working class coalition, is clear to all, including the author. This is explained in part by antiblack attitudes within organized labor that have resulted in the continued disadvantage of white workers, in Reich's view.

An equally plausible perspective may be mentioned. That is, the lack of union power across much of the Nation, especially in the Southern half, combined with the diminished lack of economic vitality and reduced labor demand of recent years, has affected the income of workers far more than the factors cited by Reich.

Because most capitalists and skilled workers are white, the effects of a somewhat noncompetitive market structure tend to skew the Nation's income distribution on several dimensions including race. But many, if not most, white workers (along with most black workers) fail to enjoy the incomes they might obtain under a more balanced economic structure.

The book has its strong points, especially chapter 4. It should most certainly be welcomed by readers seeking broader exposure to non-mainstream economic thought.

But American workers have not transformed trade unionism into a radical political institution or a European-type structure. Nor is a multiracial coalition likely to emerge to redistribute earned income by race and class simultaneously.

This leaves Reich committed, *a priori*, to a conclusion at odds with how workers of both races behave, and the distribution of their incomes as a result. The dynamic durability of industrial and social institutions, particularly those outside the workplace that affect occupational qualifications and choice patterns, must be more thoroughly investigated with 1980 census data before a clearer and more realistic explanation can emerge.

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A new role for corporations

Corporate Control, Corporate Power. By Edward S. Herman. New York, The Twentieth Century Fund, Inc., 1981. 432 pp. $18.95, Cambridge University Press, New York.

Fifty years have passed since the shift of control from owners to managers in the increasingly dominant major corporations was analyzed in the classic work, *The Modern Corporation and Private Property*, by A. A. Berle, Jr. and Gardner Means. With support from the Twentieth Century Fund, Edward S. Herman, Professor of Finance at the University of Pennsylvania's Wharton School, has reexamined the earlier findings based on contemporary corporate developments.

Managerial control of the corporation is Herman's starting point. For this, he has painstakingly combined thorough examination of the accumulated voluminous literature and analytical studies of corporations in recent years with his own carefully developed conceptual and statistical analysis. The initiating purpose of the study is achieved through the treatment of the operational elements for internal corporate control; the changing role of ownership among individuals, families, and financial institutions; and external influences on corporate control. As executed, the study is equally a treatment of the role of the corporation in today's American society. The context of the study derives from Herman's long interest in the centralizing role of the corporations, and in the possibilities and limits of corporate interaction with reform and social change. The breadth of his treatment is expressed in his perception which "stresses the continued primacy of corporate initiatives in economic change, the great powers of corporate resistance to profitable growth and the resultant strong tendencies toward political immobility."

Regarding the managerial locus of corporate control reported by Berle and Means, Herman demonstrates the accentuation of that corporate characteristic. While reformulating some of the Berle and Means classifications, Herman finds that the substantial decline in ownership control of corporations had already occurred by 1900, with the level changing little by 1929. There was, however, a contrasting sharp drop between 1929 and 1975. In 1929, owner-controlled companies accounted for 42 percent of the number and 28 percent of the assets of the 200 largest companies; in 1975, owner-controlled companies numbered 16 percent, with 13 percent of the assets of the 200 largest. There has also been a decline in controls exercised by banking and speculative interests.

This reinforcement and intensification of control by managers with relatively little stock ownership in their companies has not meant that these are neutral technocrats, as Berle and Means postulated, who are less concerned with profits than in owner or entrepreneurial-run companies. Herman finds that the evidence demonstrates that such managerial-controlled companies do not significantly differ in objectives from owner-controlled companies. Management confronted with the constraints induced by the concerns of owners and creditors and the workings of internal group decision-making is just as concerned with achieving profitable growth as are the owners. Management is in a strategic position to function with a substantial degree of autonomy, although internal and external constraints affect its extent. These constraints include the relative position of unions in bargaining, governmental tax and regulatory requirements, community pressures, relations with other firms, and other corporate interests by the board of directors.

Viewing the role of corporations in the American economy, Herman points to their increasingly dominant role, already apparent in 1900. These major firms are interconnected through a loose network of joint ventures, interlocking directorates, government advisory bodies, and a variety of social, political, and trade groups. At the same time, there are new dissociative factors, with price competition replaced by product competition resulting from the high rate of technological change. Furthermore, the internationalization of business since 1945, while making markets more open and global, has enhanced the power of the multinational corporation in individual countries and increased its autonomy. Flexibility of movement increases the corporation's bargaining position with unions. The effect on government is dualistic and paradoxical—at one and the same time, the role of government is enhanced, with appeals for assistance from both expanding multinationals and threatened domestic interests; yet the government role is weakened by the conflicts between domestic interests and international pressures as well as by events determined by private initiatives.

Such transcendent influences have engendered concerns with corporate reforms which include assertions of the need for corporate perspectives to include wider social responsibilities. Herman points to the long and widely held corporate leadership views that social responsibility was met by serving the community through the corporation's regular productive activities, and not through charitable activities. Herman suggests the need for broader societal approaches, than those usually suggested, to raise corporate perspectives beyond short-term concerns with profitable growth, and long-term concerns with such limited matters as sources of raw materials and market positioning. Broadening representation on corporate boards of directors, either through outside directors or worker participation, is not viewed as assuring significant changes in the horizons of corporate objectives.

Rather, Herman appeals for awareness of the urgency for meeting the broad evolving needs of domestic and international society in which corporations play a major role. He calls attention to alternative possibilities, leaning towards what he refers to as the French, Japanese, and Swedish "Models of Guided Capitalism." Adaptation of elements of these economies in the American ambience would only involve modest external shocks for the present order, while permitting "greater and more explicit partnership arrangements between government and big business to deal with both internal and external needs." He stresses that these models function within a democratic framework, rather than the authoritarian approaches taken in some third world countries. The warning is set forth that "in a revised 'stages of growth' model, instead of third world political economies becoming like us, under conditions of slower growth, severe factionalism, and major systemic shock, we may become more like them." Herman has contributed importantly to the literature of political economy by relating his technical findings to the broader fluctuative social, economic, and political climate currently buffeting governments, corporations, unions, and the public at large.

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NOTE

Tables 10 and 13 have been deleted, and the succeeding tables renumbered.

NOTES ON CURRENT LABOR STATISTICS

This section of the *Review* presents the principal statistical series collected and calculated by the Bureau of Labor Statistics. A brief introduction to each group of tables provides definitions, notes on the data, sources, and other material usually found in footnotes.

Readers who need additional information are invited to consult the BLS regional offices listed on the inside front cover of this issue of the *Review*. Some general notes applicable to several series are given below.

Seasonal adjustment. Certain monthly and quarterly data are adjusted to eliminate the effect of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might otherwise mask short-term movements of the statistical series. Tables containing these data are identified as "seasonally adjusted." Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years.

Seasonally adjusted labor force data in tables 2–7 were revised in the March 1982 issue of the *Review* to reflect experience through 1981. The original estimates also were revised to 1970 to reflect 1980 census population controls.

Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are being seasonally adjusted with a new procedure called X-11/ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada Catalogue No. 12-564E, February 1980). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. Revisions of historical data continue to be made only at the end of each calendar year.

Annual revision of the seasonally adjusted payroll data shown in tables 10, 12, and 14 were made in August 1981 using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 28 and 29 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

Adjustments for price changes. Some data are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of $3 and a current price index number of 150, where 1967 = 100, the hourly rate expressed in 1967 dollars is $2 ($3/150 × 100 = $2). The resulting values are described as "real," "constant," or "1967" dollars.

Availability of information. Data that supplement the tables in this section are published by the Bureau of Labor Statistics in a variety of sources. Press releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule given below. The *BLS Handbook of Labor Statistics*, Bulletin 2070, provides more detailed data and greater historical coverage for most of the statistical series presented in the *Monthly Labor Review*. More information from the household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau. Historically, comparable information from the establishment survey is published in two comprehensive data books—*Employment and Earnings, United States* and *Employment and Earnings, States and Areas*, and their annual supplements. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

Symbols

p = preliminary. To improve the timeliness of some series, preliminary figures are issued based on representative but incomplete returns.
r = revised. Generally, this revision reflects the availability of later data but may also reflect other adjustments.
n.e.c. = not elsewhere classified.

Schedule of release dates for major BLS statistical series

Series	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	September 3	August	October 8	September	1–10
Producer Price Index	September 10	August	October 15	September	21–25
Consumer Price Index	September 23	August	October 26	September	17–20
Real Earnings	September 23	August	October 26	September	11–15
Major collective bargaining settlements	....	....	October 27	1st 9 months	33–34
Productivity and costs:					
Nonfarm business and manufacturing	....	....	October 28	3rd quarter	26–29

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 60,000 households selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

Definitions

Employed persons are (1) those who worked for pay any time during the week which includes the 12th day of the month or who worked unpaid for 15 hours or more in a family-operated enterprise and (2) those who were temporarily absent from their regular jobs because of illness, vacation, industrial dispute, or similar reasons. A person working at more than one job is counted only in the job at which he or she worked the greatest number of hours.

Unemployed persons are those who did not work during the survey week, but were available for work except for temporary illness and had looked for jobs within the preceding 4 weeks. Persons who did not look for work because they were on layoff or waiting to start new jobs within the next 30 days are also counted among the unemployed. The **unemployment rate** represents the number unemployed as a percent of the civilian labor force.

The **civilian labor force** consists of all employed or unemployed persons in the civilian noninstitutional population; the **total labor force** includes military personnel. Persons **not in the labor force** are those not classified as employed or unemployed; this group includes persons retired, those engaged in their own housework, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job market factors, and those who are voluntarily idle. The **noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy.

Full-time workers are those employed at least 35 hours a week; **part-time workers** are those who work fewer hours. Workers on part-time schedules for economic reasons (such as slack work, terminating or starting a job during the week, material shortages, or inability to find full-time work) are among those counted as being on full-time status, under the assumption that they would be working full time if conditions permitted. The survey classifies unemployed persons in full-time or part-time status by their reported preferences for full-time or part-time work.

Notes on the data

From time to time, and especially after a decennial census, adjustments are made in the Current Population Survey figures to correct for estimating errors during the preceding years. These adjustments affect the comparability of historical data presented in table 1. A description of these adjustments and their effect on the various data series appear in the Explanatory Notes of *Employment and Earnings*.

Data in tables 2–7 are seasonally adjusted, based on the seasonal experience through December 1981.

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950–81

[Numbers in thousands]

Year	Total noninstitutional population	Total labor force		Civilian labor force							Not in labor force
				Total	Employed				Unemployed		
		Number	Percent of population		Total	Percent of population	Agriculture	Nonagricultural industries	Number	Percent of labor force	
1950	106,645	63,858	59.9	62,208	58,918	55.2	7,160	51,758	3,288	5.3	42,787
1955	112,732	68,072	60.4	65,023	62,170	55.1	6,450	55,722	2,852	4.4	44,660
1960	119,759	72,142	60.2	69,628	65,778	54.9	5,458	60,318	3,852	5.5	47,617
1965	129,236	77,178	59.7	74,455	71,088	55.0	4,361	66,726	3,366	4.5	52,058
1966	131,180	78,893	60.1	75,770	72,895	55.6	3,979	68,915	2,875	3.8	52,288
1967	133,319	80,793	60.6	77,347	74,372	55.8	3,844	70,527	2,975	3.8	52,527
1968	135,562	82,272	60.7	78,737	75,920	56.0	3,817	72,103	2,817	3.6	53,291
1969	137,841	84,240	61.1	80,734	77,902	56.5	3,606	74,296	2,832	3.5	53,602
1970	140,272	85,959	61.3	82,771	78,678	56.1	3,463	75,215	4,093	4.9	54,315
1971	143,033	87,198	61.0	84,382	79,367	55.5	3,394	75,972	5,016	5.9	55,834
1972	146,574	89,484	61.1	87,034	82,153	56.0	3,484	78,669	4,882	5.6	57,091
1973	149,423	91,756	61.4	89,429	85,064	56.9	3,470	81,594	4,365	4.9	57,667
1974	152,349	94,179	61.8	91,949	86,794	57.0	3,515	83,279	5,156	5.6	58,171
1975	155,333	95,955	61.8	93,775	85,846	55.3	3,408	82,438	7,929	8.5	59,377
1976	158,294	98,302	62.1	96,158	88,752	56.1	3,331	85,421	7,406	7.7	59,991
1977	161,166	101,142	62.8	99,009	92,017	57.1	3,283	88,734	6,991	7.1	60,025
1978	164,027	104,368	63.6	102,251	96,048	58.6	3,387	92,661	6,202	6.1	59,659
1979	166,951	107,050	64.1	104,962	98,824	59.2	3,347	95,477	6,137	5.8	59,900
1980	169,848	109,042	64.2	106,940	99,303	58.5	3,364	95,938	7,637	7.1	60,806
1981	172,272	110,812	64.3	108,670	100,397	58.3	3,368	97,030	8,273	7.6	61,460

2. Employment status by sex, age, race, and Hispanic origin, seasonally adjusted

[Numbers in thousands]

Employment status	Annual average		1981						1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
TOTAL															
Total noninstitutional population[1]	169,848	172,272	172,385	172,559	172,758	172,966	173,155	173,330	173,485	173,657	173,843	174,020	174,201	174,364	174,544
Armed Forces[1]	2,102	2,142	2,139	2,160	2,165	2,158	2,158	2,164	2,159	2,168	2,175	2,176	2,175	2,173	2,180
Civilian noninstitutional population[1]	167,745	170,130	170,246	170,399	170,593	170,809	170,996	171,166	171,335	171,489	171,667	171,844	172,026	172,190	172,364
Civilian labor force	106,940	108,670	108,688	108,818	108,494	109,012	109,272	109,184	108,879	109,165	109,346	109,648	110,666	110,191	110,522
Participation rate	63.8	63.9	63.8	63.9	63.6	63.8	63.9	63.8	63.5	63.7	63.7	63.8	64.3	64.0	64.1
Employed	99,303	100,397	100,864	100,840	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117	99,764	99,732
Employment-population ratio[2]	58.5	58.3	58.5	58.4	58.0	58.0	57.9	57.5	57.4	57.3	57.2	57.1	57.5	57.2	57.1
Agriculture	3,364	3,368	3,342	3,494	3,358	3,378	3,372	3,209	3,411	3,373	3,349	3,309	3,488	3,357	3,460
Nonagricultural industries	95,938	97,030	97,522	97,346	96,900	96,965	96,800	96,404	96,170	96,217	96,144	96,032	96,629	96,408	96,272
Unemployed	7,637	8,273	7,824	7,978	8,236	8,669	9,100	9,571	9,298	9,575	9,854	10,307	10,549	10,427	10,790
Unemployment rate	7.1	7.6	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8
Not in labor force	60,806	61,460	61,558	61,581	62,099	61,797	61,724	61,982	62,456	62,324	62,321	62,197	61,360	61,999	61,842
Men, 20 years and over															
Civilian noninstitutional population[1]	71,138	72,419	72,472	72,559	72,670	72,795	72,921	73,020	73,120	73,209	73,297	73,382	73,499	73,585	73,685
Civilian labor force	56,455	57,197	57,172	57,250	57,282	57,355	57,459	57,665	57,368	57,448	57,554	57,730	58,164	58,016	58,084
Participation rate	79.4	79.0	78.9	78.9	78.8	78.8	78.8	79.0	78.5	78.5	78.5	78.7	79.1	78.8	78.8
Employed	53,101	53,582	53,874	53,791	53,693	53,504	53,354	53,122	53,047	53,097	53,006	52,988	53,260	52,985	52,996
Agriculture	2,396	2,384	2,383	2,422	2,383	2,413	2,382	2,311	2,390	2,386	2,377	2,382	2,464	2,424	2,474
Nonagricultural industries	50,706	51,199	51,491	51,369	51,310	51,091	50,972	50,811	50,657	50,711	50,629	50,606	50,796	50,561	50,522
Unemployed	3,353	3,615	3,298	3,459	3,589	3,851	4,105	4,543	4,322	4,351	4,548	4,742	4,904	5,031	5,088
Unemployment rate	5.9	6.3	5.8	6.0	6.2	6.7	7.1	7.9	7.5	7.6	7.9	8.2	8.4	8.7	8.8
Women, 20 years and over															
Civilian noninstitutional population[1]	80,065	81,497	81,561	81,671	81,792	81,920	82,038	82,151	82,260	82,367	82,478	82,591	82,707	82,811	82,926
Civilian labor force	41,106	42,485	42,682	42,666	42,344	42,831	42,987	42,888	42,868	43,031	43,243	43,301	43,683	43,904	44,076
Participation rate	51.3	52.1	52.3	52.2	51.8	52.3	52.4	52.2	52.1	52.2	52.4	52.4	52.8	53.0	53.2
Employed	38,492	39,590	39,810	39,841	39,426	39,814	39,878	39,713	39,764	39,744	39,807	39,715	40,075	40,350	40,392
Agriculture	584	604	590	609	608	596	635	572	649	628	636	601	634	581	600
Nonagricultural industries	37,907	38,986	39,220	39,232	38,818	39,218	39,243	39,141	39,115	39,116	39,172	39,114	39,441	39,769	39,791
Unemployed	2,615	2,895	2,872	2,825	2,918	3,017	3,109	3,175	3,104	3,286	3,435	3,586	3,608	3,554	3,684
Unemployment rate	6.4	6.8	6.7	6.6	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3	8.1	8.4
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	16,543	16,214	16,213	16,169	16,131	16,093	16,037	15,985	15,955	15,913	15,902	15,861	15,820	15,794	15,753
Civilian labor force	9,378	8,988	8,834	8,902	8,888	8,826	8,826	8,631	8,643	8,686	8,549	8,616	8,819	8,271	8,362
Participation rate	56.7	55.4	54.5	55.1	55.1	54.8	55.0	54.0	54.2	54.6	53.8	54.3	55.7	52.4	53.1
Employed	7,710	7,225	7,180	7,208	7,139	7,025	6,940	6,778	6,771	6,748	6,679	6,637	6,782	6,429	6,344
Agriculture	385	380	369	373	367	369	355	326	373	359	336	326	390	353	386
Nonagricultural industries	7,325	6,845	6,811	6,835	6,772	6,656	6,585	6,452	6,398	6,389	6,343	6,311	6,392	6,076	5,958
Unemployed	1,669	1,763	1,654	1,694	1,749	1,801	1,886	1,853	1,872	1,938	1,870	1,979	2,037	1,842	2,018
Unemployment rate	17.8	19.6	18.7	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1
White															
Civilian noninstitutional population[1]	146,122	147,908	147,976	148,144	148,370	148,562	148,631	148,755	148,842	148,855	149,132	149,249	149,250	149,429	149,569
Civilian labor force	93,600	95,052	95,126	95,163	94,884	95,365	95,535	95,329	95,120	95,333	95,508	96,015	96,641	96,223	96,493
Participation	64.1	64.3	64.3	64.2	64.0	64.2	64.3	64.1	63.9	64.0	64.0	64.3	64.8	64.4	64.5
Employed	87,715	88,709	89,170	89,221	88,628	88,734	88,498	88,010	87,955	87,990	87,956	87,988	88,450	88,173	88,137
Unemployed	5,884	6,343	5,956	5,942	6,256	6,631	7,037	7,319	7,165	7,344	7,552	8,026	8,191	8,050	8,356
Unemployment rate	6.3	6.7	6.3	6.2	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5	8.4	8.7
Black															
Civilian noninstitutional population[1]	17,824	18,219	18,230	18,268	18,297	18,333	18,362	18,392	18,423	18,450	18,480	18,511	18,542	18,570	18,600
Civilian labor force	10,865	11,086	10,971	11,069	11,134	11,188	11,207	11,226	11,188	11,205	11,217	11,170	11,335	11,253	11,322
Participation rate	61.0	60.8	60.2	60.6	60.9	61.0	61.0	61.0		60.7	60.7	60.3	61.1	60.6	60.9
Employed	9,313	9,355	9,338	9,267	9,319	9,313	9,321	9,279	9,314	9,265	9,197	9,111	9,216	9,174	9,223
Unemployed	1,553	1,731	1,633	1,802	1,815	1,875	1,886	1,947	1,874	1,939	2,020	2,058	2,120	2,079	2,099
Unemployment rate	14.3	15.6	14.9	16.3	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7	18.5	18.5
HISPANIC ORIGIN															
Civilian noninstitutional population[1]	8,901	9,310	9,282	9,400	9,486	9,559	9,556	9,519	9,400	9,341	9,297	9,235	9,297	9,428	9,521
Civilian labor force	5,700	5,972	5,905	5,924	5,964	6,074	6,151	6,095	6,054	6,065	6,024	5,933	6,001	5,931	5,966
Participation rate	64.0	64.1	63.6	63.0	63.0	63.5	64.4	64.0	64.4	64.9	64.8	64.2	64.5	62.9	62.7
Employed	5,126	5,348	5,314	5,340	5,393	5,422	5,446	5,426	5,330	5,298	5,260	5,191	5,166	5,131	5,135
Unemployed	575	624	591	584	571	652	705	669	724	767	764	743	834	800	832
Unemployement rate	10.1	10.4	10.0	9.9	9.6	10.7	11.5	11.0	12.0	12.6	12.7	12.5	13.9	13.5	13.9

[1] The population and Armed Forces figures are not seasonally adjusted.

[2] Civilian employment as a percent of the total noninstitutional population (including Armed Forces).

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups.

3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1981						1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
CHARACTERISTIC															
Total employed, 16 years and over	99,303	100,397	100,864	100,840	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117	99,764	99,732
Men	57,186	57,397	57,640	57,551	57,471	57,266	57,051	56,725	56,629	56,658	56,472	56,401	56,820	56,223	56,192
Women	42,117	43,000	43,224	43,289	42,787	43,077	43,121	42,888	42,952	42,932	43,020	42,940	43,297	43,541	43,540
Married men, spouse present	39,004	38,882	38,961	38,951	38,855	38,746	38,553	38,342	38,234	38,255	38,181	38,142	38,312	38,354	38,213
Married women, spouse present	23,532	23,915	24,159	24,043	23,626	23,874	23,820	23,891	23,744	23,727	23,900	23,831	24,213	24,401	24,223
Women who maintain families	4,780	4,898	4,969	4,966	5,015	5,045	5,049	5,064	5,107	5,158	5,096	5,095	4,986	5,112	5,247
OCCUPATION															
White-collar workers	51,882	52,949	52,907	53,141	52,908	53,199	53,096	53,084	52,836	52,841	52,763	53,177	53,705	53,586	53,685
Professional and technical	15,968	16,420	16,364	16,621	16,598	16,681	16,657	16,774	16,803	16,612	16,659	16,844	16,818	17,053	17,282
Managers and administrators, except farm	11,138	11,540	11,578	11,460	11,533	11,616	11,461	11,424	11,091	11,253	11,311	11,501	11,541	11,504	11,365
Salesworkers	6,303	6,425	6,373	6,490	6,441	6,400	6,418	6,450	6,520	6,544	6,637	6,603	6,587	6,547	6,567
Clerical workers	18,473	18,564	18,592	18,570	18,336	18,502	18,560	18,436	18,423	18,432	18,155	18,229	18,759	18,482	18,471
Blue-collar workers	31,452	31,261	31,580	31,611	31,266	30,953	30,683	30,344	30,203	30,309	30,416	29,924	29,926	29,716	29,609
Craft and kindred workers	12,787	12,662	12,787	12,724	12,514	12,446	12,411	12,446	12,370	12,454	12,511	12,492	12,316	12,207	12,229
Operatives, except transport	10,565	10,540	10,719	10,658	10,524	10,410	10,220	10,169	9,966	9,955	9,860	9,688	9,585	9,655	9,453
Transport equipment operatives	3,531	3,476	3,526	3,530	3,506	3,580	3,438	3,368	3,415	3,503	3,397	3,400	3,419	3,414	3,439
Nonfarm laborers	4,567	4,583	4,548	4,699	4,722	4,517	4,614	4,361	4,451	4,397	4,648	4,343	4,607	4,441	4,488
Service workers	13,228	13,438	13,526	13,282	13,391	13,525	13,670	13,639	13,709	13,612	13,526	13,555	13,738	13,791	13,634
Farmworkers	2,741	2,749	2,727	2,753	2,743	2,770	2,802	2,680	2,817	2,787	2,710	2,623	2,731	2,660	2,750
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,425	1,464	1,495	1,501	1,461	1,502	1,436	1,352	1,377	1,426	1,416	1,423	1,541	1,431	1,530
Self-employed workers	1,642	1,638	1,583	1,636	1,643	1,631	1,641	1,602	1,674	1,596	1,644	1,664	1,698	1,676	1,674
Unpaid family workers	257	266	244	256	256	261	321	228	380	359	277	270	236	251	250
Nonagricultural industries:															
Wage and salary workers	88,525	89,543	89,971	89,995	89,376	89,460	89,238	88,991	88,759	88,586	88,526	88,322	89,051	88,606	88,541
Government	15,912	15,689	15,637	15,526	15,475	15,491	15,397	15,585	15,578	15,527	15,492	15,453	15,422	15,635	15,443
Private industries	72,612	73,853	74,334	74,469	73,901	73,969	73,841	73,406	73,181	73,059	73,034	72,869	73,629	72,970	73,098
Private households	1,192	1,208	1,216	1,259	1,102	1,162	1,204	1,291	1,248	1,161	1,225	1,192	1,202	1,201	1,200
Other industries	71,420	72,645	73,118	73,210	72,799	72,807	72,637	72,115	71,932	71,898	71,809	71,677	72,427	71,770	71,898
Self-employed workers	7,000	7,097	7,071	7,103	7,217	7,152	7,141	7,057	6,971	7,055	7,126	7,264	7,269	7,319	7,268
Unpaid family workers	413	390	389	387	399	451	425	410	410	408	434	413	382	397	390
PERSONS AT WORK[1]															
Nonagricultural industries	90,209	91,377	92,532	91,569	90,878	91,384	91,323	90,922	90,125	90,892	90,548	90,596	91,282	91,020	90,501
Full-time schedules	73,590	74,339	75,620	74,467	73,794	73,886	73,915	73,360	72,803	73,029	72,649	72,335	73,036	72,662	72,430
Part time for economic reasons	4,064	4,499	4,374	4,350	4,656	5,009	5,026	5,288	5,071	5,563	5,717	5,834	5,763	5,444	5,492
Usually work full time	1,714	1,738	1,680	1,729	1,759	2,006	1,945	2,121	1,783	2,193	2,237	2,223	2,211	2,064	2,001
Usually work part time	2,350	2,761	2,694	2,621	2,897	3,003	3,081	3,167	3,287	3,370	3,480	3,611	3,552	3,380	3,491
Part time for noneconomic reasons	12,555	12,539	12,538	12,752	12,428	12,489	12,382	12,274	12,251	12,300	12,183	12,427	12,483	12,914	12,579

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[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial disputes.

4. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1981						1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
CHARACTERISTIC															
Total, 16 years and over	7.1	7.6	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8
Both sexes, 16 to 1 years	17.8	19.6	18.7	18.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1
Men, 20 years and over	5.9	6.3	5.8	6.0	6.2	6.7	7.1	7.8	7.5	7.6	7.9	8.2	8.4	8.7	8.8
Women, 20 years and over	6.4	6.8	6.7	6.6	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3	8.1	8.4
White, total	6.3	6.7	6.3	6.2	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5	8.4	8.7
Both sexes, 16 to 19 years	15.5	17.3	16.4	16.1	17.2	17.7	19.0	19.0	19.6	20.0	19.0	20.8	20.3	19.4	21.0
Men, 16 to 19 years	16.2	17.9	18.6	16.7	17.5	17.8	19.6	20.2	20.8	20.4	20.2	22.3	21.2	21.1	22.6
Women, 16 to 19 years	14.8	16.6	16.2	15.4	16.8	17.5	18.3	17.7	18.2	19.4	17.8	19.2	19.2	17.5	19.2
Men, 20 years and over	5.3	5.6	5.0	5.2	5.5	5.9	6.4	6.9	6.6	6.7	7.0	7.3	7.5	7.7	7.9
Women, 20 years and over	5.6	5.9	5.8	5.5	5.8	6.1	6.3	6.4	6.3	6.6	6.9	7.2	7.3	7.1	7.3
Black, total	14.3	15.6	14.8	16.3	16.3	16.8	16.8	17.3	18.8	17.3	18.0	18.4	18.7	18.5	18.5
Both sexes, 16 to 19 years	38.5	41.4	40.0	46.0	40.8	45.6	44.1	42.2	41.2	42.3	46.0	48.1	49.8	52.6	49.7
Men, 16 to 19 years	37.5	40.7	41.8	46.0	38.5	41.6	41.9	39.8	38.3	40.7	48.5	48.3	50.6	58.1	48.3
Women, 16 to 19 years	39.8	42.2	37.9	47.8	43.4	49.5	46.6	45.1	46.7	44.2	43.1	47.8	48.9	46.2	51.2
Men, 20 years and over	12.4	13.5	12.7	13.8	14.5	14.7	15.5	16.5	16.3	16.0	16.0	16.8	17.0	17.1	18.8
Women, 20 years and over	11.9	13.4	13.1	13.8	14.0	13.9	13.6	14.1	15.3	14.5	15.4	15.6	15.3	16.0	15.5
Hispanic Origin, total	10.1	10.4	10.0	9.8	9.8	10.7	11.5	11.0	12.0	12.6	12.7	12.5	13.9	13.5	13.8
Married men, spouse present	4.2	4.3	3.8	4.0	4.4	4.8	5.2	5.7	5.3	5.3	5.5	6.0	6.1	6.5	6.8
Married women, spouse present	5.8	6.0	5.7	5.5	6.0	6.1	6.5	6.6	6.2	7.0	7.1	7.8	7.4	7.0	7.4
Women who maintain families	9.2	10.4	11.2	10.1	10.7	10.6	10.8	10.5	10.4	10.2	10.6	11.5	11.8	12.4	12.0
Full-time workers	6.9	7.3	6.8	6.9	7.3	7.7	8.1	8.7	8.4	8.5	8.9	9.2	9.2	9.4	9.5
Part-time workers	8.8	9.4	9.3	9.8	9.6	9.5	10.2	9.2	9.6	10.8	10.0	10.9	10.5	9.8	11.4
Unemployed 15 weeks and over	1.7	2.1	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.5	2.7	2.7	3.0	3.3	3.2
Labor force time lost[1]	7.9	8.5	7.9	7.8	8.5	9.1	9.5	10.1	10.0	9.8	10.4	10.4	11.1	10.2	10.7
OCCUPATION															
White-collar workers	3.7	4.0	4.0	3.9	4.1	4.1	4.2	4.5	4.2	4.6	4.8	4.9	4.8	5.0	4.9
Professional and technical	2.5	2.8	2.8	2.5	2.8	2.6	2.7	3.4	2.9	3.1	3.2	3.2	3.3	3.3	3.3
Managers and administrators, except farm	2.4	2.7	2.6	2.7	2.7	2.8	3.0	3.1	2.7	3.1	3.0	3.3	3.5	3.8	3.7
Salesworkers	4.4	4.6	4.9	4.7	5.0	4.9	5.0	4.9	4.5	4.8	5.8	5.6	5.2	5.8	5.4
Clerical workers	5.3	5.7	5.7	5.7	5.8	6.0	6.0	6.2	6.3	6.7	6.9	7.2	6.8	6.9	6.9
Blue-collar workers	10.0	10.3	9.5	9.5	10.2	10.9	11.8	12.7	12.5	12.5	12.9	13.7	13.5	13.9	14.4
Craft and kindred workers	6.6	7.5	6.9	7.0	7.7	8.3	8.5	9.3	9.0	8.4	9.1	9.8	9.4	10.3	10.9
Operatives, except transport	12.2	12.2	11.1	11.1	11.8	12.8	14.1	15.5	15.4	15.4	15.9	16.9	16.5	16.7	17.4
Transport equipment operatives	8.8	8.7	7.3	8.0	8.7	8.0	10.4	10.5	10.2	10.3	10.4	10.7	11.8	13.0	11.8
Nonfarm laborers	14.6	14.7	14.4	13.2	14.8	15.8	16.0	16.9	16.9	17.9	17.8	19.2	18.3	17.9	18.6
Service workers	7.9	8.9	8.0	8.9	9.0	9.3	8.7	9.6	9.2	9.8	10.2	11.1	11.3	9.9	10.5
Farmworkers	4.6	5.3	4.8	5.4	4.0	6.2	6.2	6.4	6.9	4.9	5.4	5.8	8.3	7.2	8.1
INDUSTRY															
Nonagricultural private wage and salary workers[2]	7.4	7.7	7.2	7.3	7.7	8.1	8.4	9.1	8.8	9.0	9.5	9.9	9.9	10.0	10.2
Construction	14.1	15.6	15.2	16.2	16.3	17.6	17.8	18.1	18.7	18.1	17.9	19.4	18.8	19.2	20.3
Manufacturing	8.5	8.3	7.3	7.0	7.9	8.8	9.4	11.0	10.4	10.6	10.8	11.3	11.6	12.3	12.0
Durable goods	8.9	8.2	7.1	6.5	7.7	8.6	9.5	11.8	11.0	11.3	10.8	11.9	12.2	13.2	12.7
Nondurable goods	7.9	8.4	7.8	7.9	8.3	8.6	9.3	9.8	9.5	9.5	10.8	10.5	10.7	11.0	11.0
Transportation and public utilities	4.9	5.2	4.1	4.8	4.2	4.8	5.5	6.0	6.4	5.9	5.6	7.0	6.5	6.9	6.1
Wholesale and retail trade	7.4	8.1	7.9	7.9	8.5	8.4	8.8	8.9	8.7	9.0	10.3	10.1	10.6	9.7	10.5
Finance and service industries	5.3	5.9	5.7	5.7	6.0	6.2	6.1	6.4	5.9	6.5	6.9	7.0	6.9	6.8	7.0
Government workers	4.1	4.7	4.6	4.5	4.7	4.7	5.2	5.0	4.8	5.2	4.9	5.3	5.0	4.6	4.6
Agricultural wage and salary workers	11.0	12.1	10.7	12.0	11.0	13.4	14.1	14.8	16.2	12.8	14.0	14.6	16.2	16.3	13.8

[1] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

[2] Includes mining, not shown separately.

5. Unemployment rates, by sex and age, seasonally adjusted

Sex and age	Annual average		1981						1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
Total, 16 years and over	7.1	7.6	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8
16 to 19 years	17.8	19.6	18.7	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1
16 to 17 years	20.0	21.4	19.8	20.8	21.4	21.5	22.6	21.9	21.9	22.7	22.7	24.6	25.3	23.7	26.1
18 to 19 years	16.2	18.4	17.8	17.6	18.5	20.0	20.5	21.2	21.3	22.0	21.3	21.9	21.3	21.9	22.8
20 to 24 years	11.5	12.3	11.5	12.1	12.3	12.7	13.0	13.5	13.5	14.1	14.2	14.7	14.3	14.4	14.5
25 years and over	5.1	5.4	5.2	5.2	5.4	5.7	6.0	6.5	6.3	6.4	6.8	7.0	7.1	7.4	7.5
25 to 54 years	5.5	5.8	5.5	5.6	5.8	6.2	6.5	6.9	6.7	6.8	7.3	7.4	7.7	7.7	7.9
55 years and over	3.3	3.6	3.5	3.5	3.6	3.8	3.8	4.1	4.2	4.3	4.6	5.0	4.8	5.4	5.2
Men, 16 years and over	6.9	7.4	6.7	7.1	7.3	7.7	8.3	9.0	8.8	8.7	9.0	9.4	9.6	9.7	9.9
16 to 19 years	18.3	20.1	18.8	19.8	19.9	20.1	21.8	22.3	22.1	22.5	23.5	24.4	24.0	24.2	25.1
16 to 17 years	20.4	22.0	19.9	21.5	21.5	21.1	22.7	22.6	23.0	23.0	24.3	24.7	26.3	25.8	28.1
18 to 19 years	16.7	18.8	17.9	18.3	18.7	19.3	21.0	22.2	21.4	22.1	22.9	24.3	21.9	24.0	23.4
20 to 24 years	12.5	13.2	11.8	12.9	13.1	13.6	14.4	14.8	14.9	15.4	15.7	16.0	15.5	15.8	15.9
25 years and over	4.8	5.1	4.7	4.9	5.0	5.5	5.8	6.5	6.3	6.3	6.6	6.9	6.9	7.5	7.5
25 to 54 years	5.1	5.5	5.0	5.2	5.5	5.9	6.3	6.9	6.7	6.7	7.1	7.2	7.5	8.0	8.1
55 years and over	3.3	3.5	3.4	3.4	3.5	3.7	3.7	4.4	4.3	4.2	4.8	5.1	4.7	5.0	4.8
Women, 16 years and over	7.4	7.9	7.8	7.7	8.0	8.2	8.4	8.5	8.4	8.9	9.0	9.4	9.5	9.1	9.6
16 to 19 years	17.2	19.0	18.6	18.2	19.5	20.7	20.9	20.5	21.2	22.1	20.1	21.3	22.1	20.2	23.1
16 to 17 years	18.6	20.7	19.7	20.0	21.2	21.9	22.5	21.1	20.6	22.5	20.8	24.5	24.1	21.4	24.1
18 to 19 years	15.6	17.9	17.7	16.9	18.3	20.6	19.9	20.0	21.1	21.9	19.6	19.4	20.6	19.7	22.2
20 to 24 years	10.4	11.2	11.3	11.1	11.4	11.5	11.3	12.0	11.9	12.7	12.8	13.3	12.9	12.9	12.9
25 years and over	5.5	5.9	5.8	5.8	6.0	6.1	6.4	6.4	6.3	6.5	7.0	7.2	7.4	7.2	7.4
25 to 54 years	6.0	6.3	6.1	6.0	6.3	6.5	6.8	6.9	6.7	7.0	7.6	7.7	8.0	7.4	7.7
55 years and over	3.2	3.8	3.7	3.7	4.3	4.0	3.8	3.7	4.1	4.3	4.3	4.8	5.0	6.0	6.0

6. Unemployed persons, by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	Annual average		1981						1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
NUMBER OF UNEMPLOYED															
Lost last job	3,947	4,267	3,867	4,106	4,426	4,573	4,905	5,343	5,205	5,153	5,622	5,806	5,901	6,302	6,177
On layoff	1,488	1,430	1,225	1,276	1,452	1,631	1,826	2,042	1,860	1,740	1,828	1,946	1,969	2,071	2,079
Other job losers	2,459	2,837	2,642	2,830	2,974	2,942	3,079	3,301	3,345	3,413	3,794	3,859	3,932	4,231	4,098
Left last job	891	923	926	879	921	976	916	923	835	964	885	937	874	813	813
Reentered labor force	1,927	2,102	2,078	2,034	2,058	2,178	2,339	2,244	2,079	2,277	2,249	2,385	2,438	2,372	2,528
Seeking first job	872	981	940	971	977	1,002	986	1,021	1,055	1,100	1,044	1,081	1,154	1,088	1,249
PERCENT DISTRIBUTION															
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	51.7	51.6	49.5	51.4	52.8	52.4	53.6	56.1	56.7	54.3	57.4	57.4	56.9	59.6	57.4
On layoff	19.5	17.3	15.7	16.0	17.3	18.7	19.9	21.4	20.3	18.3	18.7	18.9	19.0	19.6	19.3
Other job losers	32.1	34.3	33.8	35.4	35.5	33.7	33.6	34.6	36.5	35.9	38.7	38.5	37.9	40.0	38.1
Job leavers	11.7	11.2	11.9	11.0	11.0	11.2	10.0	9.7	9.1	10.2	9.0	9.1	8.4	7.7	7.5
Reentrants	25.2	25.4	26.6	25.5	24.6	25.0	25.5	23.5	22.7	24.0	22.9	23.0	23.5	22.4	23.5
New entrants	11.4	11.9	12.0	12.2	11.7	11.5	10.9	10.7	11.5	11.6	10.7	10.5	11.1	10.3	11.6
PERCENT OF CIVILIAN LABOR FORCE															
Job losers	3.7	3.9	3.6	3.8	4.1	4.2	4.5	4.9	4.8	4.7	5.1	5.4	5.3	5.7	5.6
Job leavers	.8	.8	.9	.8	.8	.9	.8	.8	.8	.9	.8	.9	.8	.7	.7
Reentrants	1.8	1.9	1.9	1.9	1.9	2.0	2.1	2.1	1.9	2.1	2.1	2.2	2.2	2.2	2.3
New entrants	.8	.9	.9	.9	.9	.9	.9	.9	1.0	1.0	1.0	1.0	1.0	1.0	1.1

7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1981						1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
Less than 5 weeks	3,295	3,449	3,323	3,326	3,529	3,707	3,852	4,037	3,852	3,789	3,825	3,958	3,874	3,543	3,990
5 to 14 weeks	2,470	2,539	2,312	2,489	2,585	2,686	2,882	3,016	3,089	3,052	3,078	3,304	3,320	3,458	3,181
15 weeks and over	1,871	2,285	2,170	2,217	2,248	2,292	2,364	2,372	2,399	2,724	2,954	3,015	3,286	3,673	3,580
15 to 26 weeks	1,052	1,122	1,096	1,078	1,146	1,166	1,229	1,189	1,210	1,445	1,606	1,508	1,634	1,826	1,792
27 weeks and over	820	1,162	1,074	1,139	1,102	1,126	1,135	1,183	1,190	1,278	1,348	1,507	1,652	1,847	1,788
Mean duration, in weeks	11.9	13.7	14.1	14.3	13.7	13.6	13.1	12.8	13.5	14.1	13.9	14.2	14.6	16.5	15.6
Median duration, in weeks	6.5	6.9	7.0	7.0	6.9	6.8	6.9	6.7	7.2	7.3	7.6	8.5	9.0	9.8	8.3

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by 177,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

Definitions

Employed persons are all persons who received pay (including holiday and sick pay) for any part of the payroll period including the 12th of the month. Persons holding more than one job (about 5 percent of all persons in the labor force) are counted in each establishment which reports them.

Production workers in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 11-15 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities; in wholesale and retail trade; in finance, insurance, and real estate; and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to reflect the effects of changes in consumer prices. The deflator for this series is derived from the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated to underlying wage-rate developments: fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries.

Hours represent the average weekly hours of production or nonsupervisory workers for which pay was received and are different from standard or scheduled hours. **Overtime hours** represent the portion of gross average weekly hours which were in excess of regular hours and for which overtime premiums were paid.

Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of May 1982 data, published in the July 1982 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Complete comparable historical unadjusted and seasonally adjusted data are published in a Supplement to Employment and Earnings (unadjusted data from April 1977 through February 1982 and seasonally adjusted data from January 1974 through February 1982) and in *Employment and Earnings, United States, 1909-78*, BLS Bulletin 1312-11 (for prior periods).

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9-20. See also *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976).

8. Employment by industry, selected years, 1950–81

[Nonagricultural payroll data, in thousands]

Year	Total	Private sector	Goods-producing				Service-producing									
			Total	Mining	Construction	Manufacturing	Total	Transportation and public utilities	Wholesale and retail trade			Finance, insurance, and real estate	Services	Government		
									Total	Wholesale trade	Retail trade			Total	Federal	State and local
1950	45,197	39,170	18,506	901	2,364	15,241	26,691	4,034	9,386	2,635	6,751	1,888	5,357	6,026	1,928	4,098
1955	50,641	43,727	20,513	792	2,839	16,882	30,128	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1960[1]	54,189	45,836	20,434	712	2,926	16,796	33,755	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1964	58,283	48,686	21,005	634	3,097	17,274	37,278	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	50,689	21,926	632	3,232	18,062	38,839	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	53,116	23,158	627	3,317	19,214	40,743	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	54,413	23,308	613	3,248	19,447	42,495	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	56,058	23,737	606	3,350	19,781	44,160	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	58,189	24,361	619	3,575	20,167	46,023	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	58,325	23,578	623	3,588	19,367	47,302	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	58,331	22,935	609	3,704	18,623	48,278	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	60,341	23,668	628	3,889	19,151	50,007	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	63,058	24,893	642	4,097	20,154	51,897	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	64,095	24,794	697	4,020	20,077	53,471	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	62,259	22,600	752	3,525	18,323	54,345	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	64,511	23,352	779	3,576	18,997	56,030	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	67,344	24,346	813	3,851	19,682	58,125	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	71,026	25,585	851	4,229	20,505	61,113	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	73,876	26,461	958	4,463	21,040	63,363	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,147
1980	90,406	74,166	25,658	1,027	4,346	20,285	64,748	5,146	20,310	5,275	15,035	5,160	17,890	16,241	2,866	13,375
1981	91,105	75,081	25,481	1,132	4,176	20,173	65,625	5,157	20,551	5,359	15,192	5,301	18,592	16,024	2,772	13,253

[1] Data include Alaska and Hawaii beginning in 1959.

9. Employment by State

[Nonagricultural payroll data, in thousands]

State	June 1981	May 1982	June 1982[p]	State	June 1981	May 1982	June 1982[p]
Alabama	1,351.1	1,334.7	1,333.5	Montana	288.3	288.1	288.8
Alaska	184.7	185.4	192.1	Nebraska	633.4	617.1	618.2
Arizona	1,029.7	1,040.1	1,016.7	Nevada	417.7	416.0	417.6
Arkansas	740.4	728.7	719.0	New Hampshire	401.4	393.0	400.5
California	10,112.0	10,026.9	10,042.9	New Jersey	3,136.6	3,069.9	3,110.1
Colorado	1,283.4	1,284.5	1,290.6	New Mexico	478.9	475.6	474.1
Connecticut	1,457.8	1,425.2	1,429.4	New York	7,363.2	7,305.2	7,346.7
Delaware	264.5	258.3	257.9	North Carolina	2,412.6	2,348.4	2,350.6
District of Columbia	614.0	603.3	606.0	North Dakota	251.6	252.8	255.1
Florida	3,726.4	3,785.6	3,763.4	Ohio	4,384.6	4,244.4	4,257.2
Georgia	2,186.4	2,163.1	2,155.0	Oklahoma	1,195.9	1,222.1	1,213.4
Hawaii	406.8	402.7	402.4	Oregon	1,039.6	974.9	982.9
Idaho	329.3	317.4	319.1	Pennsylvania	4,802.3	4,601.2	4,593.5
Illinois	4,800.4	4,639.5	4,637.4	Rhode Island	406.0	391.0	394.4
Indiana	2,135.5	2,046.3	2,034.6	South Carolina	1,210.2	1,180.9	1,178.3
Iowa	1,098.9	1,063.6	1,054.0	South Dakota	244.2	235.4	237.1
Kansas	957.5	939.6	938.2	Tennessee	1,757.8	1,728.1	1,724.4
Kentucky	1,191.7	1,169.8	1,159.8	Texas	6,147.3	6,289.3	6,289.9
Louisiana	1,634.7	1,621.6	1,620.1	Utah	560.4	562.0	565.0
Maine	430.1	409.6	421.0	Vermont	203.4	200.4	200.7
Maryland	1,735.4	1,690.4	1,699.2	Virginia	2,187.1	2,165.8	2,180.7
Massachusetts	2,686.0	2,641.3	2,642.6	Washington	1,628.5	1,566.8	1,578.0
Michigan	3,416.5	3,245.0	3,243.8	West Virginia	627.9	609.2	606.1
Minnesota	1,787.0	1,739.7	1,742.3	Wisconsin	1,937.4	1,875.1	1,879.4
Mississippi	821.8	805.0	793.5	Wyoming	222.8	218.9	221.3
Missouri	1,991.2	1,971.9	1,977.3	Virgin Islands	37.9	35.0	34.8

10. Employment by industry division and major manufacturing group, seasonally adjusted

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual Average		1981						1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June^p	July^p
TOTAL	90,406	91,105	91,396	91,322	91,363	91,224	90,998	90,642	90,460	90,459	90,304	90,083	90,166	89,860	89,843
TOTAL PRIVATE	74,166	75,001	75,432	75,428	75,459	75,307	75,088	74,725	74,596	74,609	74,445	74,231	74,313	74,043	73,993
GOODS-PRODUCING	25,658	25,481	25,718	25,637	25,583	25,393	25,176	24,908	24,684	24,631	24,450	24,289	24,255	23,992	23,878
Mining	1,027	1,132	1,164	1,180	1,192	1,195	1,202	1,206	1,201	1,203	1,197	1,182	1,152	1,121	1,107
Construction	4,346	4,176	4,175	4,146	4,124	4,101	4,071	4,026	3,966	3,974	3,934	3,938	3,988	3,942	3,932
Manufacturing	20,285	20,173	20,379	20,311	20,267	20,097	19,903	19,676	19,517	19,454	19,310	19,169	19,115	18,929	18,839
Production workers	14,214	14,021	14,212	14,136	14,087	13,915	13,717	13,486	13,431	13,290	13,179	13,042	13,008	12,868	12,818
Durable goods	12,187	12,117	12,266	12,228	12,184	12,059	11,901	11,724	11,622	11,575	11,490	11,375	11,332	11,205	11,157
Production workers	8,442	8,301	8,439	8,389	8,345	8,218	8,061	7,885	7,793	7,759	7,685	7,576	7,553	7,458	7,437
Lumber and wood products	690.5	668.7	683	671	661	643	628	615	607	611	607	615	617	616	617
Furniture and fixtures	465.8	467.3	478	475	473	469	462	457	452	449	446	443	443	444	445
Stone, clay, and glass products	662.1	638.2	644	643	638	629	620	610	596	596	590	584	586	580	576
Primary metal industries	1,142.2	1,121.1	1,132	1,134	1,125	1,104	1,082	1,053	1,038	1,024	1,007	976	945	926	923
Fabricated metal products	1,613.1	1,582.4	1,617	1,610	1,604	1,577	1553	1,529	1,515	1,505	1,496	1,481	1,472	1,454	1,448
Machinery, except electrical	2,494.0	2,507.0	2,527	2,532	2,539	2,532	2,511	2,486	2,459	2,446	2,419	2,389	2,377	2,317	2,274
Electric and electronic equipment	2,090.6	2,092.2	2,112	2,116	2,113	2,101	2,077	2,049	2,055	2,046	2,038	2,034	2,034	2,027	2,025
Transportation equipment	1,899.7	1,892.6	1,925	1,901	1,884	1,861	1,830	1,791	1,777	1,778	1,774	1,748	1,755	1,746	1,756
Instruments and related products	711.3	726.8	731	734	734	731	727	725	720	718	716	713	713	709	706
Miscellaneous manufacturing	418.0	410.7	419	412	413	412	411	409	403	400	397	392	390	386	387
Nondurable goods	8,098	8,056	8,113	8,083	8,083	8,038	8,002	7,952	7,895	7,879	7,829	7,794	7,783	7,724	7,682
Production workers	5,772	5,721	5,773	5,747	5,742	5,697	5,656	5,603	5,548	5,531	5,494	5,466	5,455	5,410	5,381
Food and kindred products	1,708.0	1,674.3	1,678	1,659	1,658	1,662	1,664	1,661	1,657	1,663	1,658	1,643	1,652	1,638	1,621
Tobacco manufactures	68.9	69.8	70	70	69	69	69	68	69	68	68	67	67	67	65
Textile mill products	847.7	822.5	835	829	827	814	804	794	780	777	780	773	759	739	744
Apparel and other textile products	1,263.5	1,244.0	1,255	1,253	1,253	1,243	1,235	1,222	1,201	1,201	1,186	1,165	1,165	1,162	1,150
Paper and allied products	692.8	687.8	691	691	695	685	681	677	674	670	668	664	661	658	655
Printing and publishing	1,252.1	1,265.8	1,268	1,271	1,274	1,276	1,276	1,276	1,275	1,276	1,278	1,274	1,274	1,268	1,263
Chemicals and allied products	1,107.4	1,107.3	1,110	1,107	1,110	1,107	1,103	1,100	1,095	1,093	1,088	1,082	1,079	1,072	1,069
Petroleum and coal products	197.9	215.6	217	216	216	215	215	214	210	208	207	206	207	205	204
Rubber and miscellaneous plastics products	726.8	736.1	750	752	746	734	725	716	712	708	703	706	708	705	705
Leather and leather products	232.9	233.0	239	235	235	233	230	224	222	215	213	214	211	210	206
SERVICE-PRODUCING	64,748	65,625	65,678	65,685	65,780	65,831	65,820	65,734	65,776	65,828	65,854	65,794	65,911	65,868	65,965
Transportation and public utilities	5,146	5,157	5,168	5,168	5,181	5,162	5,150	5,128	5,125	5,115	5,100	5,094	5,101	5,081	5,058
Wholesale and retail trade	20,310	20,551	20,620	20,650	20,660	20,654	20,623	20,524	20,630	20,670	20,655	20,584	20,652	20,602	20,629
Wholesale trade	5,275	5,359	5,375	5,387	5,383	5,380	5,375	5,357	5,346	5,343	5,336	5,323	5,331	5,307	5,298
Retail trade	15,035	15,192	15,245	15,263	15,277	15,274	15,248	15,167	15,284	15,327	15,319	15,261	15,321	15,295	15,331
Finance, insurance, and read estate	5,160	5,301	5,311	5,319	5,328	5,325	5,324	5,331	5,326	5,326	5,336	5,335	5,342	5,356	5,362
Services	17,890	18,592	18,615	18,654	18,707	18,773	18,815	18,834	18,831	18,867	18,904	18,929	18,963	19,012	19,066
Government	16,241	16,024	15,964	15,894	15,904	15,917	15,908	15,917	15,864	15,850	15,859	15,852	15,853	15,817	15,850
Federal	2,866	2,772	2,775	2,769	2,764	2,757	2,749	2,756	2,741	2,737	2,736	2,730	2,728	2,739	2,748
State and local	13,375	13,253	13,189	13,125	13,140	13,160	13,159	13,161	13,123	13,113	13,123	13,122	13,125	13,078	13,102

11. Hours and earnings, by industry division, selected years, 1950–81

[Gross averages, production or nonsupervisory workers on nonagricultural payrolls]

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Total private			Mining			Construction			Manufacturing		
1950	$53.13	39.8	$1.335	$67.16	37.9	$1.772	$69.68	37.4	$1.863	$58.32	40.5	$1.440
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1960[1]	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	269.34	40.2	6.70
1980	235.10	35.3	6.66	397.06	43.3	9.17	367.78	37.0	9.94	288.62	39.7	7.27
1981	255.20	35.2	7.25	439.19	43.7	10.05	399.52	36.9	10.80	318.00	39.8	7.99
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950	....	....	....	$44.55	40.5	$1.100	$50.52	37.7	$1.340	....	....	....
1955	....	....	....	55.16	39.4	1.40	63.92	37.6	1.70	....	....	....
1960[1]	....	....	....	66.01	38.6	1.71	75.14	37.2	2.02	....	....	....
1964	$118.78	41.1	$2.89	74.66	37.9	1.97	85.79	37.3	2.30	$70.03	36.1	$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	351.25	39.6	8.87	176.46	32.2	5.48	209.60	36.2	5.79	190.71	32.6	5.85
1981	382.18	39.4	9.70	190.95	32.2	5.93	229.05	36.3	6.31	208.97	32.6	6.41

[1] Data include Alaska and Hawaii beginning in 1959.

12. Weekly hours, by industry division and major manufacturing group, seasonally adjusted

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981						1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June[p]	July[p]
TOTAL PRIVATE	35.3	35.2	35.3	35.2	35.0	35.1	35.1	35.0	34.4	35.0	34.9	34.9	35.0	34.8	34.9
MANUFACTURING	39.7	39.8	40.0	39.9	39.4	39.5	39.3	39.1	37.6	39.4	39.0	39.0	39.1	39.2	39.3
Overtime hours	2.8	2.8	3.0	3.0	2.7	2.7	2.5	2.4	2.3	2.4	2.3	2.4	2.3	2.4	2.4
Durable goods	40.1	40.2	40.5	40.4	39.7	40.0	39.7	39.5	38.2	39.8	39.5	39.5	39.6	39.7	39.7
Overtime hours	2.8	2.8	3.0	3.0	2.7	2.6	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.2
Lumber and wood products	38.5	38.7	38.7	38.4	37.6	37.8	37.7	37.7	35.0	37.9	37.6	37.6	38.5	38.5	38.3
Furniture and fixtures	38.1	38.4	38.6	38.4	37.4	38.0	37.6	37.9	33.6	37.7	37.3	37.4	37.5	37.8	37.9
Stone, clay, and glass products	40.8	40.6	40.8	40.7	40.3	40.1	40.1	39.7	38.6	40.1	40.0	40.0	40.2	40.4	40.6
Primary metal industries	40.1	40.5	40.7	40.8	40.6	40.0	39.6	39.2	38.3	39.4	38.8	38.5	38.5	38.9	38.9
Fabricated metal products	40.4	40.3	40.5	40.4	39.6	40.0	39.7	39.5	38.1	39.7	39.5	39.4	39.5	39.4	39.5
Machinery, except electrical	41.0	40.9	41.2	41.1	40.3	40.8	40.7	40.4	39.3	40.7	40.2	40.1	39.8	39.8	40.0
Electric and electronic equipment	39.8	39.9	40.4	40.3	39.7	39.8	39.4	39.5	38.3	39.8	39.4	39.3	39.4	39.5	39.8
Transportation equipment	40.6	40.9	41.2	41.2	40.1	40.6	40.4	39.7	39.0	40.5	40.4	41.1	41.1	41.8	41.1
Instruments and related products	40.5	40.4	40.5	40.6	40.4	40.3	40.2	39.9	39.0	39.9	39.9	39.9	40.2	40.2	40.0
Miscellaneous manufacturing	38.7	38.8	39.0	38.9	38.4	38.9	39.0	38.5	37.3	38.6	38.6	38.5	38.7	38.5	38.6
Nondurable goods	39.0	39.1	39.2	39.2	38.9	38.9	38.7	38.6	36.8	38.9	38.5	38.4	38.5	38.8	38.6
Overtime hours	2.8	2.8	2.9	2.9	2.8	2.8	2.7	2.6	2.5	2.6	2.5	2.6	2.5	2.5	2.6
Food and kindred products	39.7	39.7	39.5	39.4	39.3	39.5	39.5	39.8	39.1	40.2	39.5	39.4	39.4	39.5	39.5
Textile mill products	40.1	39.6	40.1	39.8	38.8	39.0	38.7	37.8	32.3	38.3	37.6	37.7	37.9	37.9	38.1
Apparel and other textile products	35.4	35.7	35.8	35.9	35.2	35.5	35.5	35.1	31.4	35.5	35.0	34.7	34.8	35.1	35.1
Paper and allied products	42.2	42.5	42.7	42.5	43.0	42.4	42.0	41.8	41.3	42.3	41.8	42.1	41.8	42.0	42.2
Printing and publishing	37.1	37.3	37.3	37.3	37.1	37.1	37.1	37.1	36.9	37.4	37.1	37.1	36.8	37.0	36.9
Chemicals and allied products	41.5	41.6	41.7	41.7	42.2	41.5	41.2	41.3	41.0	41.2	40.7	40.7	41.0	41.1	41.0
Petroleum and coal products	41.8	43.2	43.1	42.9	43.1	42.2	42.5	42.7	44.3	43.5	43.5	44.0	44.1	44.0	43.3
Rubber and miscellaneous plastics products	40.0	40.3	40.5	40.5	39.7	39.9	39.6	39.4	37.9	40.0	39.6	39.8	39.9	40.1	40.2
Leather and leather products	36.7	36.8	36.4	36.7	36.2	36.7	36.5	36.1	34.1	35.6	35.8	35.6	35.6	35.8	35.5
WHOLESALE AND RETAIL TRADE	32.2	32.2	[r]32.2	32.2	32.1	32.0	32.1	32.0	31.7	32.0	31.9	31.8	32.0	31.9	31.9
WHOLESALE TRADE	38.5	38.6	38.6	38.6	38.5	38.4	38.5	38.4	38.1	38.5	38.4	38.3	38.5	38.6	38.4
RETAIL TRADE	30.2	30.1	30.1	30.1	30.1	29.9	30.0	29.9	29.7	29.9	29.8	29.8	30.0	29.8	29.9
SERVICES	32.6	32.6	32.6	32.5	32.5	32.6	32.6	32.6	32.5	32.6	32.6	32.7	32.7	32.6	32.6

NOTE: The industry divisions of mining; construction; tobacco manufactures (a major manufacturing group, nondurable goods); transportation and public utilities; and finance, insurance, and real estate are no longer shown. This is because the seasonal component in these is small relative to the trend-cycle, or irregular components, or both, and consequently cannot be precisely separated.

r = revised.

13. Hourly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981						1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June^p	July^p
TOTAL PRIVATE	$6.66	$7.25	$7.24	$7.30	$7.40	$7.42	$7.47	$7.45	$7.55	$7.54	$7.55	$7.58	$7.63	$7.63	$7.67
Seasonally adjusted	(1)	(1)	7.27	7.34	7.37	7.40	7.45	7.46	7.52	7.53	7.54	7.59	7.65	7.66	7.70
MINING	9.17	10.05	10.09	10.12	10.27	10.25	10.39	10.41	10.65	10.62	10.62	10.65	10.66	10.82	10.86
CONSTRUCTION	9.94	10.80	10.79	10.92	11.07	11.65	11.18	11.26	11.59	11.32	11.33	11.32	11.46	11.41	11.52
MANUFACTURING	7.27	7.99	8.02	8.03	8.16	8.16	8.20	8.27	8.42	8.34	8.37	8.42	8.45	8.50	8.55
Durable goods	7.75	8.53	8.57	8.59	8.70	8.73	8.77	8.83	8.92	8.89	8.91	8.94	9.01	9.06	9.10
Lumber and wood products	6.55	7.00	7.15	7.13	7.16	7.10	7.16	7.16	7.38	7.27	7.28	7.24	7.41	7.54	7.62
Furniture and fixtures	5.49	5.91	5.92	5.99	6.01	6.06	6.05	6.12	6.28	6.19	6.21	6.21	6.23	6.30	6.34
Stone, clay, and glass products	7.50	8.27	8.40	8.41	8.53	8.50	8.54	8.56	8.70	8.62	8.65	8.72	8.80	8.86	8.92
Primary metal industries	9.77	10.81	10.78	10.99	11.22	10.97	11.10	11.08	11.23	11.20	11.15	11.24	11.23	11.32	11.42
Fabricated metal products	7.45	8.20	8.21	8.26	8.33	8.39	8.42	8.53	8.55	8.57	8.64	8.69	8.79	8.82	8.83
Machinery, except electrical	8.00	8.81	8.83	8.84	8.96	9.04	9.08	9.18	9.19	9.20	9.18	9.24	9.26	9.28	9.34
Electric and electronic equipment	6.94	7.62	7.65	7.73	7.75	7.80	7.83	7.90	7.98	7.96	8.01	8.03	8.06	8.11	8.17
Transportation equipment	9.35	10.39	10.44	10.37	10.49	10.74	10.74	10.76	10.79	10.82	10.89	10.88	11.08	11.20	11.20
Instruments and related products	6.80	7.43	7.43	7.55	7.59	7.80	7.68	7.81	7.93	7.94	8.00	8.07	8.16	8.22	8.26
Miscellaneous manufacturing	5.46	5.96	5.97	5.96	6.05	6.05	6.11	6.19	6.27	6.29	6.32	6.35	6.38	6.41	6.41
Nondurable goods	6.55	7.18	7.22	7.23	7.36	7.33	7.38	7.44	7.67	7.54	7.57	7.65	7.66	7.71	7.78
Food and kindred products	6.85	7.43	7.45	7.48	7.56	7.51	7.61	7.67	7.82	7.74	7.79	7.90	7.92	7.91	7.91
Tobacco manufactures	7.74	8.86	9.46	8.70	8.76	8.67	9.04	8.96	9.21	9.56	8.72	10.05	9.93	10.39	10.57
Textile mill products	5.07	5.52	5.50	5.65	5.69	5.72	5.73	5.72	5.76	5.76	5.76	5.79	5.79	5.80	5.81
Apparel and other textile products	4.56	4.96	4.92	4.96	5.04	5.05	5.04	5.04	5.18	5.13	5.15	5.18	5.16	5.18	5.17
Paper and allied products	7.84	8.60	8.73	8.67	8.95	8.82	8.89	8.96	9.06	8.99	9.03	9.11	9.14	9.27	9.40
Printing and publishing	7.53	8.18	8.20	8.25	8.37	8.40	8.42	8.48	8.58	8.56	8.59	8.59	8.61	8.68	8.74
Chemicals and allied products	8.30	9.12	9.16	9.19	9.38	9.37	9.42	9.53	9.68	9.68	9.71	9.81	9.83	9.95	10.04
Petroleum and coal products	10.10	11.38	11.43	11.32	11.55	11.47	11.58	11.50	11.91	12.29	12.32	12.50	12.52	12.52	12.51
Rubber and miscellaneous plastics products	6.52	7.16	7.18	7.23	7.29	7.30	7.31	7.38	7.51	7.49	7.45	7.52	7.56	7.65	7.70
Leather and leather products	4.58	4.99	4.97	4.97	5.09	5.09	5.11	5.15	5.19	5.22	5.24	5.32	5.32	5.36	5.32
TRANSPORTATION AND PUBLIC UTILITIES	8.87	9.70	9.67	9.87	9.95	9.94	10.05	10.06	10.10	10.13	10.07	10.14	10.17	10.19	10.24
WHOLESALE AND RETAIL TRADE	5.48	5.93	5.91	5.94	6.04	6.01	6.04	6.02	6.17	6.16	6.16	6.18	6.20	6.19	6.20
WHOLESALE TRADE	6.96	7.57	7.58	7.65	7.70	7.73	7.79	7.81	7.94	7.94	7.93	7.97	8.03	8.00	8.07
RETAIL TRADE	4.88	5.25	5.24	5.25	5.37	5.29	5.32	5.31	5.43	5.42	5.43	5.44	5.47	5.47	5.46
FINANCE, INSURANCE, AND REAL ESTATE	5.79	6.31	6.28	6.38	6.39	6.43	6.52	6.47	6.56	6.62	6.59	6.64	6.77	6.69	6.75
SERVICES	5.85	6.41	6.34	6.41	6.52	6.58	6.67	6.66	6.79	6.79	6.77	6.81	6.85	6.82	6.88

[1] Not available.

14. Hourly Earnings Index, for production or nonsupervisory workers on private nonagricultural payrolls, by industry division

[1977=100]

Industry	Not seasonally adjusted					Seasonally adjusted						
	July 1981	May 1982	June 1982^p	July 1982^p	Percent change from: July 1981 to July 1982	July 1981	Mar. 1982	Apr. 1982	May 1982	June 1982^p	July 1982^p	Percent change from: June 1982 to July 1982
TOTAL PRIVATE (in current dollars)	138.8	147.4	147.5	148.4	6.9	139.1	145.4	146.3	147.7	148.0	148.7	0.4
Mining	149.0	156.8	159.6	160.5	7.7	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Construction	132.3	139.3	139.1	140.5	6.2	132.2	138.1	138.7	139.9	139.7	140.3	.5
Manufacturing	142.3	151.5	152.4	153.3	7.7	142.4	149.9	150.8	151.8	152.5	153.3	.5
Transportation and public utilities	138.5	147.2	147.2	147.4	6.4	139.0	146.3	146.9	148.2	149.0	148.0	−.7
Wholesale and retail trade	138.2	145.2	144.8	145.1	5.0	138.4	142.8	143.7	145.1	145.2	145.3	.1
Finance, insurance, and real estate	137.5	147.9	146.5	147.8	7.4	137.8	143.8	144.9	146.0	146.8	148.1	.9
Services	136.5	146.5	146.3	147.9	8.3	137.4	143.9	145.1	146.5	147.1	148.8	1.1
TOTAL PRIVATE (in constant dollars)	91.7	93.4	92.3	(2)	(2)	92.2	93.3	93.7	93.7	93.0	(2)	(2)

[1] This series is not seasonally adjusted because the seasonal component is small relative to the trend-cycle, irregular components, or both, and consequently cannot be separated with sufficient precision.

[2] Not available.

15. Weekly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981						1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June p	July p
TOTAL PRIVATE:															
Current dollars	$235.10	$255.20	$257.74	$259.88	$259.74	$261.18	$262.20	$262.24	$255.95	$262.39	$261.99	$262.27	$265.52	$266.70	$269.98
Seasonally adjusted	(1)	(1)	256.63	258.37	257.95	259.74	261.50	261.10	258.69	263.55	263.15	264.89	267.75	266.57	268.73
Constant (1977) dollars	172.74	170.13	170.35	170.84	168.88	169.49	169.71	169.30	164.70	168.31	168.37	167.80	168.16	167.12	(1)
MINING	397.06	439.19	439.92	447.30	450.85	456.13	461.32	468.37	456.89	463.03	465.16	454.76	454.12	462.01	$466.96
CONSTRUCTION	367.78	398.52	407.86	408.41	396.31	419.82	414.78	417.75	385.95	406.39	419.21	415.44	429.75	427.88	437.76
MANUFACTURING															
Current dollars	288.62	318.00	317.59	320.40	322.32	323.95	325.54	329.67	312.38	326.93	327.27	325.85	329.55	334.05	332.60
Constant (1977) dollars	212.06	212.00	209.91	210.37	209.57	210.22	210.71	213.02	201.02	209.70	210.33	208.48	208.71	209.04	(1)
Durable goods	310.78	342.91	342.80	345.32	346.26	350.07	351.68	356.73	336.26	352.93	352.84	350.45	355.90	360.59	$356.72
Lumber and wood products	252.18	270.90	276.71	278.07	271.36	271.22	269.93	272.80	248.71	272.63	273.73	270.05	285.29	294.06	291.85
Furniture and fixtures	209.17	226.94	221.78	231.21	226.58	233.82	230.51	238.07	204.10	231.51	233.50	230.39	231.76	238.77	235.21
Stone, clay, and glass products	306.00	335.76	342.72	344.81	346.32	344.25	345.87	343.26	325.38	337.90	344.27	347.93	355.52	361.49	362.15
Primary metal industries	391.78	437.81	434.43	442.90	457.78	435.51	440.67	438.77	431.23	443.52	434.85	434.98	430.11	440.35	436.67
Fabricated metal products	300.98	330.46	327.58	332.88	330.70	337.28	337.64	345.47	323.19	337.86	342.14	338.91	346.33	349.27	343.49
Machinery except electrical	329.00	360.33	357.62	359.79	361.98	367.93	372.29	381.89	360.25	374.44	370.87	367.75	367.62	369.34	367.08
Electric and electronic equipment	276.21	304.04	303.71	309.20	307.98	311.22	311.63	319.16	304.04	316.81	316.40	313.17	315.56	320.35	319.45
Transportation equipment	379.61	424.95	425.95	421.02	418.55	440.34	438.19	445.46	414.34	437.13	439.96	441.05	455.39	465.92	455.84
Instruments and related products	275.40	300.17	298.46	305.02	308.64	307.04	313.34	317.87	306.10	317.60	320.80	318.77	327.22	330.44	325.44
Miscellaneous manufacturing	211.30	231.25	229.85	231.84	234.14	237.77	241.35	242.03	229.48	241.54	244.58	242.57	245.63	246.79	244.22
Nondurable goods	256.45	280.74	282.30	284.86	287.78	286.60	288.56	291.65	277.65	291.04	289.93	291.47	294.14	298.38	300.31
Food and kindred products	271.95	294.97	295.02	298.45	300.89	298.65	302.88	309.87	302.63	307.29	303.81	306.52	312.05	312.45	313.24
Tobacco manufactures	294.89	344.54	365.16	354.09	352.15	341.60	350.75	341.38	332.48	366.15	362.56	367.83	369.40	397.94	387.92
Textile mill products	203.31	218.59	217.80	225.44	221.34	225.37	224.62	220.79	179.71	219.46	217.15	215.39	219.44	221.58	218.46
Apparel and other textile products	181.42	177.07	177.12	180.05	177.41	180.79	180.43	178.92	155.40	180.58	180.77	178.19	180.08	183.89	182.50
Paper and allied products	330.85	365.50	370.15	367.61	366.64	373.97	376.05	382.59	374.18	377.58	376.55	380.80	379.31	389.34	393.86
Printing and publishing	279.36	305.11	305.04	309.38	313.04	312.48	314.07	321.39	312.31	317.58	318.69	316.11	315.99	319.42	321.63
Chemicals and allied products	344.45	379.39	380.14	380.47	395.84	388.86	391.87	398.35	394.94	397.85	395.20	399.27	401.06	407.95	409.63
Petroleum and coal products	422.18	491.62	499.49	486.76	512.82	494.36	499.10	489.73	514.51	518.64	522.37	550.00	549.63	552.13	549.19
Rubber and miscellaneous plastics products	260.80	288.55	286.48	292.09	289.41	293.46	291.67	295.94	283.89	298.85	295.77	297.04	300.13	306.77	304.92
Leather and leather products	168.09	183.63	181.41	183.39	183.24	186.80	187.03	187.48	172.83	184.27	186.54	187.26	191.52	197.25	188.86
TRANSPORTATION AND PUBLIC UTILITIES	351.25	382.18	383.90	389.87	390.04	388.65	393.96	395.36	388.85	397.10	392.73	393.43	394.60	398.43	400.38
WHOLESALE AND RETAIL TRADE	176.46	190.95	193.85	194.83	194.49	192.32	192.68	194.45	191.89	194.66	194.66	195.91	197.78	199.32	202.12
WHOLESALE TRADE	267.96	292.20	294.10	296.06	296.45	298.38	300.69	302.25	300.13	303.31	303.72	304.45	308.35	308.80	311.50
RETAIL TRADE	147.38	158.03	161.92	162.23	162.17	157.64	158.54	160.89	157.47	159.35	159.64	161.02	163.01	164.65	167.62
FINANCE, INSURANCE, AND REAL ESTATE	209.60	229.05	227.98	232.23	230.04	232.77	236.02	234.21	237.47	239.64	239.22	240.37	245.75	241.51	245.03
SERVICES	190.71	208.97	209.85	210.89	211.25	213.85	216.78	217.12	219.32	220.68	220.03	221.33	222.83	223.01	227.73

[1] Not available.

UNEMPLOYMENT INSURANCE DATA

NATIONAL UNEMPLOYMENT INSURANCE DATA are compiled monthly by the Employment and Training Administration of the U.S. Department of Labor from monthly reports of unemployment insurance activity prepared by State agencies. Railroad unemployment insurance data are prepared by the U.S. Railroad Retirement Board.

Definitions

Data for **all programs** represent an unduplicated count of insured unemployment under State programs, Unemployment Compensation for Ex-Servicemen, and Unemployment Compensation for Federal Employees, and the Railroad Insurance Act.

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

An **application** for benefits is filed by a railroad worker at the beginning of his first period of unemployment in a benefit year; no application is required for subsequent periods in the same year. **Number of payments** are payments made in 14-day registration periods. The **average amount of benefit payment** is an average for all compensable periods, not adjusted for recovery of overpayments or settlement of underpayments. However, **total benefits** paid have been adjusted.

16. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1981							1982					
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June p
All programs:													
Insured unemployment	2,949	3,012	2,874	2,680	2,753	3,228	3,935	4,681	4,723	4,892	4,760	4,388	4,328
State unemployment insurance program:[1]													
Initial claims[2]	1,741	2,114	1,610	1,681	1,996	2,286	3,272	3,329	2,272	2,418	2,347	1,988	2,369
Insured unemployment (average weekly volume)	2,596	2,743	2,656	2,488	2,592	3,061	3,778	4,470	4,376	4,282	4,067	3,729	3,707
Rate of insured unemployment	3.0	3.1	3.0	2.9	3.0	3.5	4.3	5.1	5.0	4.9	4.6	4.3	4.3
Weeks of unemployment compensated	9,929	10,486	9,594	9,565	9,424	10,052	14,592	15,962	15, 631	18,144	16,156	13,670	14,628
Average weekly benefit amount for total unemployment	$99.02	$103.47	$105.94	$107.39	$108.92	$110.52	$112.83	$114.83	$116.95	$117.10	$117.51	$118.07	$118.65
Total benefits paid	$1,012,764	$1,061,889	$1,004,864	$1,001,020	$997,757	$1,080,810	$1,592,546	$1,764,206	$1,781,830	$2,072,642	$1,848,260	$1,572,503	$1,690,109
Unemployment compensation for ex-servicemen:[3]													
Initial claims[1]	19	22	19	15	11	9	11	8	8	10	9	8	10
Insured unemployment (average weekly volume)	42	44	44	34	26	22	19	16	13	11	10	9	8
Weeks of unemployment compensated	192	203	190	153	116	91	93	65	49	48	37	31	29
Total benefits paid	$21,145	$22,785	$21,425	$17,144	$12,952	$10,043	$10,155	$7,098	r$5,304	$5,141	$4,029	$3,416	$3,210
Unemployment compensation for Federal civilian employees:[4]													
Initial claims	13	15	17	18	20	16	17	17	12	13	13	11	14
Insured unemployment (average weekly volume)	25	25	25	29	32	36	39	40	40	38	33	29	28
Weeks of unemployment compensated	105	105	102	100	112	127	174	162	154	172	147	119	122
Total benefits paid	$10,705	$10,805	$9,543	$10,495	$11,719	$13,491	$18,891	$18,040	$17,517	$19,677	$16,821	$13,569	$13,587
Railroad unemployment insurance:													
Applications	26	41	13	15	21	13	19	22	11	9	5	5	36
Insured unemployment (average weekly volume)	30	29	29	34	40	44	54	75	67	65	57	44	44
Number of payments	86	32	63	74	86	83	117	153	140	154	130	95	93
Average amount of benefit payment	$201.06	$199.63	$202.53	$207.98	$197.26	$207.08	$212.33	$213.39	$214.07	$215.71	$209.48	$200.75	$199.15
Total benefits paid	$16,206	$11,541	$7,071	15,046	15,994	$16,377	$25,292	$30,544	$28,011	$33,853	$26,262	$19,110	$18,574
Employment service:[5]													
New applications and renewals	12,868	....	....	16,502	....	....	4,081	....	....	7,439	....	....	9,907
Nonfarm placements	2,446	....	....	3,509	....	....	731	....	....	1,232	....	....	1,892

[1] Initial claims and State insured unemployment include data under the program for Puerto Rican sugarcane workers.

[2] Excludes transition claims under State programs.

[3] Excludes data on claims and payments made jointly with other programs.

[4] Excludes data on claims and payments made jointly with State programs.

[5] Cumulative total for fiscal year (October 1-September 30). Data computed quarterly.

NOTE: Data for Puerto Rico and the Virgin Islands included. Dashes indicate data not available.

r=revised.

PRICE DATA

PRICE DATA are gathered by the Bureau of Labor Statistics from retail and primary markets in the United States. Price indexes are given in relation to a base period (1967 = 100, unless otherwise noted).

Definitions

The **Consumer Price Index** is a monthly statistical measure of the average change in prices in a fixed market basket of goods and services. Effective with the January 1978 index, the Bureau of Labor Statistics began publishing CPI's for two groups of the population. One index, a new CPI for All Urban Consumers, covers 80 percent of the total noninstitutional population; and the other index, a revised CPI for Urban Wage Earners and Clerical Workers, covers about half the new index population. The All Urban Consumers index includes, in addition to wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctor's and dentist's fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items is kept essentially unchanged between major revisions so that only price changes will be measured. Prices are collected from over 18,000 tenants, 24,000 retail establishments, and 18,000 housing units for property taxes in 85 urban areas across the country. All taxes directly associated with the purchase and use of items are included in the index. Because the CPI's are based on the expenditures of two population groups in 1972–73, they may not accurately reflect the experience of individual families and single persons with different buying habits.

Though the CPI is often called the "Cost-of-Living Index," it measures only price change, which is just one of several important factors affecting living costs. Area indexes do not measure differences in the level of prices among cities. They only measure the average change in prices for each area since the base period.

Producer Price Indexes measure average changes in prices received in primary markets of the United States by producers of commodities in all stages of processing. The sample used for calculating these indexes contains about 2,800 commodities and about 10,000 quotations per month selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The universe includes all commodities produced or imported for sale in commercial transactions in primary markets in the United States.

Producer Price Indexes can be organized by stage of processing or by commodity. The stage of processing structure organizes products by degree of fabrication (that is, finished goods, intermediate or semifinished goods, and crude materials). The commodity structure organizes products by similarity of end-use or material composition.

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States, from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire. Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

In calculating Producer Price Indexes, price changes for the various commodities are averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1972. The detailed data are aggregated to obtain indexes for stage of processing groupings, commodity groupings, durability of product groupings, and a number of special composite groupings.

Price indexes for the output of selected SIC industries measure average price changes in commodities produced by particular industries, as defined in the *Standard Industrial Classification Manual 1972* (Washington, U.S. Office of Management and Budget, 1972). These indexes are derived from several price series, combined to match the economic activity of the specified industry and weighted by the value of shipments in the industry. They use data from comprehensive industrial censuses conducted by the U.S. Bureau of the Census and the U.S. Department of Agriculture.

Notes on the data

Beginning with the May 1978 issue of the *Review*, regional CPI's cross classified by population size, were introduced. These indexes will enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes will be published bimonthly. (See table 19.)

For further details about the new and the revised indexes and a comparison of various aspects of these indexes with the old unrevised CPI, see *Facts About the Revised Consumer Price Index*, a pamphlet in the Consumer Price Index Revision 1978 series. See also *The Consumer Price Index: Concepts and Content Over the Years*, Report 517, revised edition (Bureau of Labor Statistics, May 1978).

For interarea comparisons of living costs at three hypothetical standards of living, see the family budget data published in the *Handbook of Labor Statistics, 1977*, Bulletin 1966 (Bureau of Labor Statistics, 1977), tables 122–133. Additional data and analysis on price changes are provided in the *CPI Detailed Report* and *Producer Prices and Price Indexes*, both monthly publications of the Bureau.

As of January 1976, the Wholesale Price Index (as it was then called) incorporated a revised weighting structure reflecting 1972 values of shipments. From January 1967 through December 1975, 1963 values of shipments were used as weights.

For a discussion of the general method of computing consumer, producer, and industry price indexes, see *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976), chapters 13–15. See also John F. Early, "Improving the measurement of producer price change," *Monthly Labor Review*, April 1978, pp. 7–15. For industry prices, see also Bennett R. Moss, "Industry and Sector Price Indexes," *Monthly Labor Review*, August 1965, pp. 974–82.

17. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967–81

[1967=100]

Year	All items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	116.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.2	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	6.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	267.2	11.3	203.7	8.5	213.6	8.8
1981	272.3	10.2	267.8	7.7	293.2	11.4	186.6	5.2	281.3	12.3	295.1	10.4	219.0	7.5	233.3	9.2

18. Consumer Price Index for All Urban Consumers and revised CPI for Urban Wage Earners and Clerical Workers, U.S. city average—general summary and groups, subgroups, and selected items

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
All items	271.3	282.5	283.4	283.1	284.3	287.1	290.6	271.4	282.1	282.9	282.5	283.7	286.5	290.1
Food and beverages	266.5	273.6	275.8	275.6	276.5	278.1	280.2	267.0	273.9	276.0	275.9	276.8	278.4	280.5
Housing	292.2	306.1	307.3	306.7	309.4	313.8	317.5	291.9	305.6	306.7	306.2	309.2	313.7	317.5
Apparel and upkeep	185.6	187.3	189.0	191.1	191.9	191.5	190.8	185.8	186.5	187.3	190.5	191.2	190.6	189.6
Transportation	279.9	289.9	288.0	285.1	282.9	285.6	292.8	281.0	291.6	289.6	286.6	284.3	287.1	294.5
Medical care	291.5	313.4	316.2	318.8	321.7	323.8	326.4	292.9	312.0	314.9	317.4	320.2	322.3	324.8
Entertainment	220.8	229.2	231.2	232.8	233.9	234.4	235.6	218.3	226.1	228.1	229.5	230.5	231.1	232.3
Other goods and services	233.4	248.4	250.3	252.2	253.8	255.0	255.8	231.4	245.0	247.1	249.3	250.9	252.4	253.1
Commodities	253.2	258.8	259.5	258.8	258.9	261.5	265.1	253.8	258.3	259.9	259.1	259.2	261.7	265.4
Commodities less food and beverages	243.1	248.0	248.1	247.1	247.0	249.8	254.0	243.8	248.7	248.6	247.5	247.2	250.1	254.5
Nondurables less food and beverages	263.5	265.6	265.3	263.4	259.7	261.0	266.3	266.3	267.8	267.5	265.3	261.3	262.6	268.2
Durables	226.6	233.4	233.7	233.5	235.8	239.8	243.2	225.2	232.4	232.5	232.4	234.8	238.9	242.3
Services	303.5	323.9	325.3	325.5	328.4	331.8	334.9	303.9	324.3	325.5	325.8	329.1	332.4	335.7
Rent, residential	206.8	217.8	218.6	219.6	220.1	221.8	222.6	206.4	217.4	218.1	219.1	219.6	221.3	222.1
Household services less rent	366.7	392.4	393.7	392.5	397.3	403.0	407.7	307.1	396.5	397.7	396.6	402.3	408.2	413.3
Transportation services	269.6	286.6	287.6	288.8	290.3	291.3	294.7	268.2	285.9	286.7	287.9	289.2	290.0	293.2
Medical care services	314.4	339.4	342.4	345.1	348.0	350.2	353.0	315.8	337.5	340.6	343.0	345.8	348.0	350.7
Other services	236.3	251.7	253.0	254.0	255.3	255.9	257.0	235.6	250.0	251.3	252.4	253.8	254.4	255.5
Special indexes:														
All items less food	269.5	281.4	282.1	281.7	282.9	286.0	289.7	269.7	281.3	281.7	281.3	282.5	285.6	289.4
All items less mortgage interest costs	256.9	266.1	267.1	267.2	267.9	270.3	273.6	257.5	266.4	267.2	267.3	267.9	270.3	273.7
Commodities less food	241.1	245.9	246.0	245.2	245.0	247.8	251.9	241.8	246.6	246.6	245.6	245.3	248.1	252.4
Nondurables less food	258.0	260.2	260.1	258.4	255.0	256.2	261.2	260.7	262.4	262.2	260.2	256.6	257.8	263.0
Nondurables less food and apparel	298.0	301.0	300.5	298.6	291.4	293.4	301.0	300.0	302.6	302.0	297.8	292.3	294.4	302.4
Nondurables	266.2	270.8	271.7	270.7	269.3	270.7	274.4	267.6	271.9	272.8	271.6	270.1	271.5	275.4
Services less rent	321.9	344.2	345.7	345.7	349.1	352.8	356.5	322.6	345.0	346.3	346.4	350.2	353.8	357.7
Services less medical care	300.1	320.0	321.1	321.1	324.0	327.5	330.7	300.4	320.5	321.6	321.6	324.9	328.3	331.7
Domestically produced farm foods	255.9	262.4	265.1	263.8	264.5	267.1	270.3	255.3	261.4	264.0	262.7	263.5	266.0	269.2
Selected beef cuts	271.6	269.6	271.7	272.0	275.1	281.6	289.1	274.3	271.1	273.1	273.3	276.4	283.1	290.6
Energy	414.0	416.4	413.0	406.1	395.7	402.1	418.6	417.3	419.0	415.4	407.9	398.9	403.1	420.4
All items less energy	260.2	272.1	273.4	273.6	275.7	278.3	280.7	259.3	270.9	272.1	272.3	274.5	277.0	279.4
All items less food and energy	255.6	268.5	269.5	269.8	272.2	274.9	277.3	254.5	267.1	268.0	268.3	270.9	273.6	276.0
Commodities less food and energy	217.5	223.7	224.5	225.3	227.2	229.9	232.1	216.6	222.8	223.6	224.5	226.4	229.1	231.3
Energy commodities	453.1	446.4	440.1	424.5	406.6	410.2	430.8	453.7	447.0	440.7	425.0	406.9	410.5	431.6
Services less energy	299.8	320.5	321.9	321.5	324.5	327.2	329.9	300.2	321.0	322.2	321.8	325.2	327.9	330.6
Purchasing power of the consumer dollar, 1967 = $1	$0.369	$0.354	$0.353	$0.353	$0.352	$0.348	$0.344	$0.368	$0.354	$0.353	$0.354	$0.352	$0.349	$0.345

18. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
FOOD AND BEVERAGES	266.5	273.6	275.8	275.6	276.5	278.1	280.2	267.0	273.9	276.0	275.9	276.8	278.4	280.5
Food	273.6	281.0	283.3	283.0	283.9	285.5	287.8	274.0	281.1	283.4	283.1	284.1	285.7	288.0
Food at home	269.7	275.3	278.0	277.1	277.9	279.8	282.6	269.2	274.4	277.0	276.2	277.0	278.8	281.6
Cereals and bakery products	271.5	279.8	280.9	281.3	281.7	283.3	283.6	270.7	278.6	279.8	280.0	280.4	282.0	282.3
Cereals and cereal products (12/77 = 100)	148.3	153.0	154.0	153.9	153.6	154.5	154.5	150.0	153.9	155.0	154.8	154.6	155.4	155.5
Flour and prepared flour mixes (12/77 = 100)	139.0	139.1	139.1	139.2	139.7	141.8	142.1	141.4	139.6	139.6	139.6	140.1	142.1	142.5
Cereal (12/77 = 100)	152.4	163.1	164.8	165.2	165.4	165.7	166.1	154.0	165.1	166.8	167.2	167.4	167.8	168.2
Rice, pasta, and cornmeal (12/77 = 100)	150.9	151.1	152.4	151.2	149.6	150.2	149.4	152.7	152.4	153.6	152.4	150.8	151.5	150.6
Bakery products (12/77 = 100)	142.1	146.4	146.8	147.1	147.5	148.3	148.6	141.0	145.3	145.7	146.0	146.3	147.2	147.4
White bread	236.0	243.3	243.8	242.3	242.8	243.8	242.4	233.1	239.4	240.0	238.3	238.8	240.0	238.3
Other breads (12/77 = 100)	140.2	143.9	143.7	145.1	145.2	146.3	145.6	142.5	145.7	145.5	147.0	147.1	148.2	147.5
Fresh biscuits, rolls, and muffins (12/77 = 100)	141.7	146.5	146.4	148.4	147.6	149.7	149.9	139.7	142.5	142.8	144.6	143.8	146.0	148.2
Fresh cakes and cupcakes (12/77 = 100)	142.3	147.2	147.0	148.0	148.4	149.0	149.2	141.2	145.8	145.8	146.4	146.8	147.4	147.5
Cookies (12/77 = 100)	143.3	148.1	149.2	149.4	150.2	150.5	150.7	143.3	148.9	150.1	150.2	151.2	151.4	151.5
Crackers, bread, and cracker products (12/77 = 100)	130.7	133.4	135.4	135.3	137.3	139.6	140.9	131.5	134.7	136.8	138.5	138.7	141.0	142.3
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	142.9	146.2	147.0	146.3	146.8	147.3	148.9	142.3	148.9	149.3	148.7	149.3	149.9	151.5
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	146.1	151.2	151.5	153.5	153.4	153.6	156.3	140.3	144.7	144.8	146.8	146.5	146.7	149.4
Meats, poultry, fish, and eggs	248.7	253.7	256.8	256.9	258.3	261.0	266.0	248.4	253.3	256.4	256.4	257.8	260.7	265.8
Meats, poultry, and fish	255.0	259.1	261.2	262.1	264.2	268.2	274.3	254.5	258.6	260.7	261.5	263.6	267.7	273.9
Meats	254.2	257.8	260.2	261.2	263.6	269.7	277.2	253.9	257.3	259.7	260.6	262.8	269.0	276.5
Beef and veal	271.1	269.4	271.5	271.7	274.8	281.1	288.2	273.0	270.1	272.2	272.3	275.3	281.9	289.0
Ground beef other than canned	264.6	262.2	265.0	265.8	266.9	269.4	274.6	267.9	263.7	266.3	266.9	267.9	270.7	275.9
Chuck roast	281.0	278.6	285.8	284.3	285.4	287.2	295.4	288.9	288.5	295.0	293.1	294.1	296.2	304.9
Round roast	246.2	241.6	245.3	243.0	244.9	252.4	257.0	249.5	244.7	248.9	245.9	247.9	255.9	260.1
Round steak	255.1	257.5	256.1	258.8	262.8	269.2	278.8	253.6	256.1	254.4	256.4	260.8	267.8	277.2
Sirloin steak	274.6	258.2	257.1	260.6	271.1	282.3	294.1	278.6	258.9	257.8	262.2	272.4	283.8	295.5
Other beef and veal (12/77 = 100)	159.9	160.9	161.4	161.5	163.7	168.0	173.3	158.2	159.3	158.7	159.8	162.1	167.5	171.9
Pork	221.2	234.7	238.9	239.5	241.6	249.9	259.9	221.3	234.4	238.5	238.9	241.0	249.2	258.9
Bacon	216.5	235.5	245.6	249.6	255.9	267.7	280.7	220.5	239.3	249.3	253.3	250.7	271.9	285.3
Chops	209.8	219.2	222.1	216.3	223.4	230.0	241.2	209.8	217.6	220.2	214.7	221.7	228.2	239.6
Ham other than canned (12/77 = 100)	98.0	107.3	107.0	109.2	105.4	111.1	112.6	95.1	104.8	104.7	106.5	102.8	108.3	109.6
Sausage	278.9	297.6	300.0	305.8	305.7	313.3	326.3	278.7	298.8	301.0	306.6	306.3	314.2	327.2
Canned ham	229.8	245.4	246.1	247.6	245.6	249.8	253.2	230.1	249.0	249.9	251.2	248.9	253.2	256.4
Other pork (12/77 = 100)	126.7	129.5	133.8	132.6	135.2	138.9	145.4	127.7	128.8	133.1	131.7	134.5	138.2	144.7
Other meats	255.9	258.1	258.1	262.4	262.8	264.0	268.5	253.1	257.3	257.4	261.7	261.8	263.2	267.8
Frankfurters	250.7	256.7	258.0	260.5	259.5	262.7	268.8	249.8	256.1	257.1	260.0	258.4	261.8	269.3
Bologna, liverwurst, and salami (12/77 = 100)	143.9	145.4	146.1	149.2	150.2	150.7	154.6	141.9	145.4	146.2	149.4	150.3	150.7	154.6
Other lunchmeats (12/77 = 100)	127.6	132.2	131.7	133.7	133.2	134.3	135.5	126.0	130.2	129.7	131.7	131.2	132.3	133.4
Lamb and organ meats (12/77 = 100)	146.5	138.6	137.7	141.0	142.6	141.2	143.1	147.1	141.4	141.0	144.2	145.6	144.4	148.5
Poultry	196.8	194.2	195.7	194.7	193.3	196.0	197.5	194.4	192.4	193.8	192.8	191.5	194.1	195.8
Fresh whole chicken	193.8	193.1	196.3	195.1	194.1	196.8	199.1	190.3	190.9	194.4	192.8	192.0	194.7	197.0
Fresh and frozen chicken parts (12/77 = 100)	128.3	128.5	129.9	127.5	127.6	128.3	129.3	127.0	126.9	127.1	125.9	125.9	126.5	127.5
Other poultry (12/77 = 100)	128.9	123.2	123.2	123.9	121.3	124.3	124.6	128.2	123.0	122.6	123.3	120.8	123.9	124.3
Fish and seafood	352.1	373.3	373.8	376.3	382.0	366.3	365.2	349.8	372.4	373.2	375.5	381.4	365.0	364.2
Canned fish and seafood (12/77 = 100)	139.3	140.6	140.9	141.0	141.5	139.8	139.9	137.9	140.0	140.4	140.5	140.8	139.2	139.4
Fresh and frozen fish and seafood (12/77 = 100)	131.0	143.2	143.2	144.7	147.9	139.4	138.6	130.4	143.0	143.2	144.6	148.0	138.9	138.3
Eggs	172.1	189.4	205.1	195.2	186.9	172.3	162.5	173.0	190.6	206.1	196.3	187.9	173.4	163.4
Dairy products	243.8	245.8	246.5	246.5	247.5	247.0	246.3	243.9	245.2	245.8	245.9	246.8	246.3	245.7
Fresh milk and cream (12/77 = 100)	134.8	135.1	135.5	135.3	135.9	135.7	135.2	134.5	134.6	134.9	134.8	135.3	135.1	134.7
Fresh whole milk	220.7	221.2	221.5	221.7	222.2	222.0	221.3	220.0	220.2	220.5	220.8	221.3	221.1	220.4
Other fresh milk and cream (12/77 = 100)	134.6	135.1	135.8	135.1	136.2	135.7	135.4	135.1	134.7	135.5	134.6	135.7	135.2	134.9
Processed dairy products (12/77 = 100)	142.0	144.4	144.8	144.9	145.6	145.2	144.9	142.9	144.7	145.1	145.3	145.9	145.5	145.2
Butter	245.1	249.3	248.9	250.1	250.1	251.1	250.9	248.7	252.0	251.4	252.7	252.7	253.7	253.4
Cheese (12/77 = 100)	140.5	142.0	142.8	143.3	143.7	144.0	143.2	140.9	142.3	143.1	143.6	144.0	144.3	143.6
Ice cream and related products (12/77 = 100)	146.4	150.8	150.0	149.5	150.9	148.7	149.6	147.8	149.9	149.1	148.9	150.2	147.9	148.7
Other dairy products (12/77 = 100)	136.3	138.4	140.0	139.5	139.9	139.7	138.7	136.8	139.1	140.8	140.3	140.8	140.4	139.4
Fruits and vegetables	278.1	294.7	301.5	293.1	294.0	297.9	305.6	275.3	291.3	297.4	289.1	290.3	293.6	301.0
Fresh fruits and vegetables	285.2	308.0	319.6	302.1	304.1	311.7	325.9	281.0	303.1	313.4	296.1	298.9	305.1	318.6
Fresh fruits	278.9	276.7	291.2	297.8	306.7	318.8	340.8	272.1	267.0	280.1	287.3	295.5	306.9	327.0
Apples	239.9	273.0	279.5	288.7	287.5	299.8	321.4	241.0	272.6	279.9	288.5	287.8	300.1	321.9
Bananas	260.5	253.5	251.0	263.0	268.5	261.6	267.9	259.0	251.1	247.9	261.1	266.1	259.3	265.5
Oranges	287.1	283.1	313.1	316.3	330.8	362.1	406.8	274.0	255.1	281.1	285.9	300.2	328.3	367.5
Other fresh fruits (12/77 = 100)	154.4	145.9	154.5	157.2	163.4	168.2	177.1	149.9	141.0	149.0	151.8	157.6	162.4	170.3
Fresh vegetables	291.1	337.3	348.2	306.1	301.8	305.1	311.9	289.0	335.8	343.5	304.2	302.0	303.7	311.1
Potatoes	414.3	288.8	297.4	301.0	306.1	320.3	344.9	402.7	282.7	291.5	294.8	300.8	313.6	339.7
Lettuce	238.7	514.4	408.9	270.9	355.2	291.6	268.1	237.1	515.8	408.0	271.3	358.6	293.5	270.0
Tomatoes	205.2	245.6	288.5	258.1	220.5	226.5	275.8	200.8	248.8	293.2	261.8	224.9	230.6	279.9
Other fresh vegetables (12/77 = 100)	151.8	174.8	199.1	185.0	168.3	179.3	177.5	153.6	173.9	187.2	184.0	166.7	178.6	177.0
Processed fruits and vegetables	272.8	282.7	284.2	285.8	285.5	285.4	285.9	271.4	280.6	282.0	283.7	283.3	283.3	283.9
Processed fruits (12/77 = 100)	142.0	146.4	147.9	149.0	148.2	148.3	148.0	142.1	146.0	147.4	148.6	147.7	147.9	147.6
Frozen fruit and fruit juices (12/77 = 100)	143.4	143.5	147.8	149.2	147.1	145.7	144.4	142.3	142.8	146.6	148.2	146.1	144.6	143.4
Fruit juices other than frozen (12/77 = 100)	145.5	151.4	151.5	152.4	151.5	152.2	151.7	145.8	150.1	150.3	151.4	150.4	151.0	150.7
Canned and dried fruits (12/77 = 100)	137.1	143.6	144.3	145.3	145.6	148.4	147.0	137.9	144.0	144.8	145.9	146.2	147.0	147.6
Processed vegetables (12/77 = 100)	132.1	137.6	137.7	138.2	138.6	138.5	139.3	131.2	136.5	136.6	137.2	137.5	137.4	138.2
Frozen vegetables (12/77 = 100)	130.8	140.7	141.7	142.0	144.0	143.9	145.6	131.9	141.8	143.1	143.4	145.3	145.2	148.9

18. Continued—Consumer Price Index—U.S. city average

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
FOOD AND BEVERAGES — Continued														
Food — Continued														
Food at home — Continued														
Fruits and vegetables — Continued														
Cut corn and canned beans except lima (12/77=100)	134.6	139.9	140.7	141.2	140.5	140.7	141.1	133.6	137.5	138.3	138.8	137.9	138.5	138.8
Other canned and dried vegetables (12/77=100)	131.4	135.0	134.1	134.8	135.0	134.8	135.2	129.7	133.5	132.8	133.3	133.5	133.2	133.8
Other foods at home	323.6	329.7	330.7	331.7	331.6	332.6	332.6	324.5	329.6	331.5	332.6	332.6	333.5	333.5
Sugar and sweets	361.3	361.6	364.2	365.5	365.3	365.7	366.8	363.0	361.6	364.1	365.4	365.2	365.6	366.9
Candy and chewing gum (12/77=100)	145.2	150.1	150.0	150.3	150.9	150.0	150.4	146.5	150.0	149.8	150.1	150.8	149.9	150.5
Sugar and artificial sweeteners (12/77=100)	168.2	155.6	160.0	161.0	159.9	160.5	161.4	169.3	157.0	161.3	162.4	161.1	161.8	162.8
Other sweets (12/77=100)	142.6	147.1	146.9	147.4	147.2	148.9	148.9	140.8	145.2	145.1	145.5	145.3	147.0	148.8
Fats and oils (12/77=100)	269.6	261.6	260.5	259.6	260.4	260.6	260.7	269.5	261.5	260.6	259.7	260.4	260.6	260.7
Margarine	256.1	257.8	258.7	256.7	259.6	259.7	261.2	258.0	257.2	258.1	258.1	259.1	259.3	260.8
Nondairy substitutes and peanut butter (12/77=100)	161.8	157.7	157.8	158.1	157.3	156.0	156.5	160.5	156.0	156.3	154.4	155.6	154.2	154.9
Other fats, oils, and salad dressings (12/77=100)	129.6	130.5	129.8	129.5	129.0	129.6	129.1	129.6	131.0	130.2	130.0	129.5	130.2	129.7
Nonalcoholic beverages	412.8	418.7	423.4	424.8	424.1	425.6	424.8	414.6	420.5	425.0	426.6	428.0	427.3	426.6
Cola drinks, excluding diet cola	297.0	302.4	304.6	306.6	304.9	306.1	305.9	294.1	300.0	302.0	303.8	302.4	303.6	303.3
Carbonated drinks, including diet cola (12/77=100)	140.8	141.9	143.8	143.4	143.4	144.3	143.1	139.3	139.7	141.7	141.4	141.5	142.3	141.2
Roasted coffee	353.1	353.3	364.4	366.6	366.6	369.3	365.1	348.5	348.8	359.9	362.2	365.0	364.3	360.1
Freeze dried and instant coffee	335.2	336.9	342.8	343.6	343.4	344.3	344.3	337.1	336.5	342.5	343.4	343.0	343.9	343.8
Other noncarbonated drinks (12/77=100)	134.5	138.0	138.4	138.9	138.7	138.9	140.0	134.4	138.2	138.6	139.1	138.9	139.1	140.2
Other prepared foods	254.4	264.6	265.3	266.5	266.6	267.5	267.8	255.8	266.3	268.9	268.1	269.3	269.3	269.5
Canned and packaged soup (12/77=100)	132.6	134.3	135.9	135.6	135.7	135.7	136.3	133.5	136.4	137.9	137.8	137.8	137.7	138.3
Frozen prepared foods (12/77=100)	142.2	147.8	148.2	147.0	147.2	147.8	147.3	140.8	147.4	145.6	148.5	148.7	147.3	148.8
Snacks (12/77=100)	147.2	152.6	153.4	153.4	152.9	153.5	153.2	149.1	154.6	155.2	155.4	155.0	155.6	155.2
Seasonings, olives, pickles, and relish (12/77=100)	141.1	149.7	151.3	153.2	153.6	152.8	153.3	140.3	148.6	150.3	152.2	152.7	151.9	152.4
Other condiments (12/77=100)	140.8	146.4	148.9	148.2	148.7	150.2	150.6	143.2	148.0	148.4	149.9	150.4	151.9	152.4
Miscellaneous prepared foods (12/77=100)	139.3	146.9	147.0	147.7	147.6	148.5	148.3	138.9	147.0	147.1	147.9	147.7	148.7	148.5
Other canned and packaged prepared foods (12/77=100)	137.7	142.5	143.0	143.2	143.3	143.5	144.5	138.5	143.9	144.5	144.5	144.6	144.9	145.8
Food away from home	290.6	299.8	301.2	302.4	303.6	304.8	305.9	293.5	302.8	304.2	305.4	306.7	307.8	309.0
Lunch (12/77=100)	141.5	146.1	146.6	147.0	147.5	148.2	148.9	142.8	147.7	148.2	148.6	149.1	149.8	150.5
Dinner (12/77=100)	140.7	144.8	145.2	145.7	146.3	147.1	147.4	142.6	146.4	146.8	147.3	147.9	148.8	149.1
Other meals and snacks (12/77=100)	140.3	145.4	146.9	147.9	148.6	148.5	149.2	141.3	146.2	147.6	148.7	149.3	149.2	149.9
Alcoholic beverages	199.6	204.0	205.6	206.6	207.4	208.0	208.4	202.1	206.0	207.6	208.8	209.5	210.1	210.4
Alcoholic beverages at home (12/77=100)	129.7	132.2	133.3	134.0	134.6	135.0	135.0	131.5	133.4	134.6	135.4	136.0	136.2	136.3
Beer and ale	202.0	205.0	207.4	209.2	210.5	210.3	210.6	202.4	204.3	206.5	208.3	208.6	209.4	209.6
Whiskey	143.0	145.9	146.8	147.0	147.2	148.2	148.3	144.0	146.8	147.7	147.8	148.0	149.0	149.1
Wine	224.6	232.2	234.2	235.3	236.4	236.9	235.3	233.4	239.8	241.6	243.3	244.4	244.9	242.7
Other alcoholic beverages (12/77=100)	116.1	117.5	117.8	118.1	118.2	119.0	119.7	115.7	117.5	117.8	118.0	118.0	118.9	118.6
Alcoholic beverages away from home (12/77=100)	133.1	137.0	137.6	138.2	138.4	139.1	140.3	133.4	138.6	139.1	139.7	139.9	140.6	141.6
HOUSING	292.2	306.1	307.3	306.7	309.4	313.8	317.5	291.9	305.6	306.7	308.2	309.2	313.7	317.5
Shelter	312.6	328.3	329.5	327.6	331.4	336.7	340.9	313.7	329.4	330.3	328.5	332.8	338.3	342.6
Rent, residential	206.8	217.8	218.6	219.6	220.1	221.8	222.6	206.4	217.4	218.1	219.1	219.6	221.3	222.1
Other rental costs	299.5	313.6	316.9	320.1	323.7	323.6	327.3	299.7	312.3	315.6	318.9	322.8	322.6	326.3
Lodging while out of town	311.8	331.1	335.9	340.9	348.6	348.6	352.2	310.6	328.4	333.0	337.9	343.9	344.0	349.4
Tenants' insurance (12/77=100)	133.1	141.8	143.5	144.1	144.9	144.4	145.5	133.4	142.0	143.6	144.3	144.7	143.8	144.8
Homeownership	350.4	367.5	368.7	365.7	370.6	377.4	382.8	352.7	369.9	370.8	367.9	373.6	380.5	388.0
Home purchase	266.6	269.3	270.4	269.2	272.3	279.3	285.6	266.2	267.4	268.3	267.1	270.5	278.1	284.4
Financing, taxes, and insurance	467.2	506.0	507.2	500.9	508.4	516.2	521.8	473.8	512.2	513.2	507.0	516.0	523.8	529.7
Property insurance	386.6	393.0	393.7	394.1	393.6	396.7	400.6	388.1	395.6	396.0	396.5	398.0	399.2	402.7
Property taxes	200.3	212.9	215.1	216.6	217.2	218.3	218.8	202.2	214.5	217.2	218.5	219.1	220.2	220.7
Contracted mortgage interest cost	610.4	665.2	666.1	655.5	667.1	678.5	686.7	612.9	666.3	668.6	656.4	670.2	681.4	690.0
Mortgage interest rates	226.4	244.4	243.9	240.7	242.1	240.2	238.3	227.2	245.7	245.4	242.3	244.4	242.1	240.2
Maintenance and repairs	315.5	326.7	328.2	327.2	331.6	334.5	336.1	308.2	323.3	324.6	323.7	328.3	330.9	332.4
Maintenance and repair services	344.4	358.2	358.4	357.6	363.6	367.0	369.1	338.7	358.2	360.1	358.6	365.0	368.0	370.0
Maintenance and repair commodities	247.6	252.5	254.6	255.0	256.2	257.8	258.3	241.5	248.4	248.2	248.6	249.7	251.3	252.1
Paint and wallpaper, supplies, tools, and equipment (12/77=100)	145.3	149.4	150.9	151.8	153.1	154.2	153.3	138.4	142.3	143.7	144.7	145.8	147.0	148.0
Lumber, awnings, glass, and masonry (12/77=100)	124.7	124.6	124.6	123.9	124.5	124.5	124.7	122.7	121.9	121.7	121.2	121.9	121.9	122.1
Plumbing, electrical, heating, and cooling supplies (12/77=100)	131.2	131.9	133.8	133.4	133.4	135.1	136.2	128.5	131.8	133.4	133.1	133.1	134.9	136.0
Miscellaneous supplies and equipment (12/77=100)	128.5	133.6	134.8	135.1	135.6	136.3	138.4	131.7	135.7	136.9	137.1	137.4	138.2	140.6
Fuel and other utilities	320.2	336.2	337.1	339.3	339.2	345.4	352.2	321.2	337.0	337.9	340.2	340.3	346.5	353.6
Fuels	411.7	426.9	427.6	430.5	428.2	438.0	448.4	411.2	426.2	426.8	429.9	427.8	437.4	448.3
Fuel oil, coal, and bottled gas	682.0	686.0	683.1	664.0	641.3	644.6	656.6	685.1	688.9	686.0	666.7	644.0	647.7	659.7
Fuel oil	715.7	716.8	713.8	692.3	668.2	670.6	684.8	718.4	719.3	716.3	694.4	668.4	673.3	687.5
Other fuels (6/78 = 100)	164.3	170.9	170.0	169.0	166.4	165.7	165.6	165.5	172.1	171.4	169.5	167.9	167.1	166.9
Gas (piped) and electricity	350.2	367.4	369.7	375.9	377.8	388.6	398.5	349.0	366.0	367.3	374.8	376.8	387.4	397.8
Electricity	296.7	306.6	308.8	313.3	312.8	314.9	327.5	296.6	305.3	305.5	312.3	311.8	314.4	327.7
Utility (piped) gas	416.9	447.2	450.8	458.6	465.3	493.4	496.0	413.2	445.2	448.7	456.6	463.6	489.7	492.7

18. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
HOUSING—Continued														
Fuel and other utilities—Continued														
Other utilities and public services	177.1	182.7	183.9	185.0	187.7	198.9	200.4	177.3	183.1	184.3	185.4	188.2	199.5	201.1
Telephone services	143.5	157.2	157.9	158.5	160.8	161.6	163.2	143.8	157.3	158.0	158.6	161.0	161.9	163.5
Local charges (12/77 = 100)	114.9	124.0	125.3	125.6	127.9	128.9	131.2	115.1	124.2	125.4	125.7	128.1	129.2	131.6
Interstate toll calls (12/77 = 100)	101.8	116.8	116.6	117.7	118.9	120.0	119.6	101.9	116.9	116.7	117.8	120.2	120.4	120.1
Intrastate toll calls (12/77 = 100)	101.5	109.2	109.1	109.0	108.9	109.3	109.8	101.3	109.0	108.8	108.7	108.7	109.0	109.4
Water and sewerage maintenance	291.2	308.8	313.3	316.8	320.7	323.5	324.9	292.5	312.2	315.7	319.7	323.6	326.7	328.0
Household furnishings and operations	221.1	228.4	230.2	231.6	232.6	233.4	233.7	217.8	224.9	226.7	228.0	229.1	230.0	230.4
Housefurnishings	185.2	188.8	191.4	192.7	193.8	194.7	194.7	182.8	187.7	189.3	190.4	191.7	192.5	192.6
Textile housefurnishings	202.5	210.1	216.0	217.7	218.7	220.9	220.2	204.4	212.5	218.5	219.9	221.4	223.9	223.3
Household linens (12/77 = 100)	125.1	127.3	131.0	134.7	135.8	136.4	134.8	125.7	128.6	132.1	135.6	137.0	136.8	135.9
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	127.4	134.8	138.5	136.7	135.9	140.1	140.1	129.5	137.0	141.0	138.7	138.1	142.8	143.0
Furniture and bedding	204.6	208.5	209.4	212.1	214.7	215.1	214.4	200.1	205.8	205.5	208.2	211.0	211.3	210.9
Bedroom furniture (12/77 = 100)	134.6	139.7	140.5	140.8	142.3	144.5	143.0	129.2	136.5	137.1	137.2	138.9	140.7	139.7
Sofas (12/77 = 100)	118.2	117.3	116.4	118.0	119.3	119.1	117.5	116.0	117.6	116.5	118.2	119.6	118.4	118.2
Living room chairs and tables (12/77 = 100)	116.9	118.9	118.6	121.6	123.2	122.8	123.2	118.2	119.0	118.8	121.6	123.3	122.9	123.3
Other furniture (12/77 = 100)	135.4	138.5	138.1	140.5	142.3	141.6	142.3	130.5	133.8	133.4	135.8	137.9	137.0	137.7
Appliances including TV and sound equipment	148.3	148.8	149.9	150.1	150.6	151.4	151.4	145.6	148.5	148.6	149.7	150.3	151.1	151.2
Television and sound equipment (12/77 = 100)	108.2	108.8	109.2	109.1	108.7	108.8	108.6	107.3	107.9	108.4	108.2	107.7	107.9	107.7
Television	105.3	104.4	104.5	104.7	104.2	104.3	104.4	104.3	103.1	103.3	103.5	103.0	103.0	103.1
Sound equipment (12/77 = 100)	111.9	113.8	114.5	114.0	113.7	113.9	113.5	110.9	113.0	113.8	113.2	112.8	113.0	112.7
Household appliances	173.2	178.0	178.7	180.3	182.1	183.6	183.8	172.6	178.1	178.9	180.4	182.3	183.8	184.2
Refrigerators and home freezers	172.4	180.8	182.6	183.7	184.8	186.2	187.7	177.1	186.1	187.9	189.3	190.6	191.8	193.2
Laundry equipment (12/77 = 100)	128.0	132.2	133.5	133.3	136.4	136.6	136.7	127.1	132.4	133.8	133.5	136.6	136.8	136.9
Other household appliances (12/77 = 100)	118.9	120.6	121.6	122.2	122.9	124.3	123.9	116.6	118.5	119.7	120.0	120.7	122.3	122.3
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	118.4	118.4	121.0	121.9	122.3	123.7	123.1	116.5	117.4	118.9	119.3	118.7	121.4	121.6
Office machines, small electric appliances, and air conditioners (12/77 = 100)	119.4	121.9	122.4	122.5	123.5	124.9	124.8	116.7	118.7	120.5	120.7	121.8	123.3	123.0
Other household equipment (12/77 = 100)	131.0	134.9	136.7	137.3	137.8	138.3	139.0	129.3	132.8	134.7	135.3	135.6	136.0	136.9
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	132.1	136.3	138.1	140.9	140.3	141.4	142.3	125.3	128.6	131.0	133.3	132.9	133.9	134.9
Clocks, lamps, and decor items (12/77 = 100)	124.6	128.6	129.6	129.0	130.2	131.4	132.2	121.9	124.8	126.0	125.4	126.5	127.4	128.2
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	139.5	142.3	143.3	143.1	145.0	144.4	145.6	136.0	138.2	139.5	139.0	140.6	139.8	141.4
Lawn equipment, power tools, and other hardware (12/77 = 100)	122.6	127.8	130.3	132.1	130.8	132.1	131.9	127.1	133.2	135.5	137.3	136.0	137.4	137.1
Housekeeping supplies	268.8	279.1	282.4	284.2	284.9	285.5	286.5	268.9	275.7	278.8	280.4	281.2	281.8	283.1
Soaps and detergents	266.0	275.5	278.0	278.5	280.0	278.8	280.8	263.6	272.0	274.4	275.7	276.3	275.2	277.0
Other laundry and cleaning products (12/77 = 100)	133.4	138.6	141.0	142.1	142.7	143.3	143.8	132.3	138.4	138.8	140.9	141.6	142.3	142.7
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	137.6	145.1	145.7	145.7	146.4	146.0	146.5	138.2	145.1	145.6	145.4	148.2	145.6	146.1
Stationery, stationery supplies, and gift wrap (12/77 = 100)	125.8	128.8	130.4	130.7	131.4	132.0	132.5	127.2	131.7	133.4	133.8	134.6	135.3	136.0
Miscellaneous household products (12/77 = 100)	139.5	146.2	146.9	147.5	147.5	149.3	150.2	136.1	141.2	141.8	142.4	142.4	144.1	144.9
Lawn and garden supplies (12/77 = 100)	138.4	137.1	141.8	144.7	144.7	144.8	144.0	131.3	129.2	134.1	136.7	138.8	136.6	136.7
Housekeeping services	292.9	307.4	308.1	309.9	310.4	311.3	311.7	291.7	305.9	308.8	308.2	309.2	310.2	310.9
Postage	308.0	337.5	337.5	337.5	337.5	337.5	337.5	308.1	337.5	337.5	337.5	337.5	337.5	337.5
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	141.9	148.4	148.4	150.8	152.1	153.1	154.2	141.8	148.0	149.1	150.6	152.2	153.3	154.5
Appliance and furniture repair (12/77 = 100)	126.3	133.6	134.2	135.0	135.6	136.6	137.0	125.4	132.2	132.8	133.5	134.1	135.1	135.5
APPAREL AND UPKEEP	185.8	187.3	188.0	191.1	191.9	191.5	190.8	185.6	186.5	187.3	190.5	191.2	190.6	189.6
Apparel commodities	176.4	177.0	177.6	180.8	181.4	180.9	180.0	177.0	176.7	177.4	180.8	181.3	180.5	179.4
Apparel commodities less footwear	172.5	172.8	173.4	176.8	177.4	176.7	175.6	173.0	172.2	173.0	176.6	177.1	176.0	174.7
Men's and boys'	176.6	178.7	179.3	181.7	183.1	183.8	183.1	177.2	178.6	179.4	181.6	182.9	183.7	183.2
Men's (12/77 = 100)	111.0	112.9	113.0	114.5	115.5	115.9	115.4	111.6	113.3	113.5	114.7	115.7	116.2	115.8
Suits, sport coats, and jackets (12/77 = 100)	104.3	104.3	104.8	107.2	107.6	108.1	107.3	98.4	97.8	98.2	100.4	101.1	101.4	100.6
Coats and jackets (12/77 = 100)	98.1	98.4	95.8	98.1	99.1	99.9	99.5	101.2	97.6	97.2	98.7	100.7	101.5	101.1
Furnishings and special clothing (12/77 = 100)	129.7	133.6	134.7	136.8	138.2	138.7	138.0	124.1	129.8	131.1	133.1	134.5	135.3	134.7
Shirts (12/77 = 100)	117.9	120.7	119.3	119.9	121.3	121.2	121.5	120.4	123.3	121.8	122.3	123.4	123.1	123.8
Dungarees, jeans, and trousers (12/77 = 100)	105.0	108.2	108.6	108.6	109.7	110.3	109.7	111.8	113.8	114.1	114.2	115.1	115.6	115.2
Boys' (12/77 = 100)	115.4	114.6	116.0	117.8	118.3	118.8	118.5	114.3	112.9	114.3	116.1	116.5	117.1	116.9
Coats, jackets, sweaters, and shirts (12/77 = 100)	108.7	104.7	105.9	109.4	111.2	111.5	110.7	109.8	105.3	106.3	108.7	111.5	112.0	111.5
Furnishings (12/77 = 100)	123.9	127.3	129.2	128.7	130.3	131.2	131.9	119.5	123.3	124.2	124.7	126.0	127.2	128.0
Suits, trousers, sport coats, and jackets (12/77 = 100)	117.3	117.2	118.1	120.1	119.0	119.6	119.4	115.9	114.7	116.7	117.8	116.8	117.3	117.1
Women's and girls'	155.4	154.3	154.7	160.3	160.9	159.1	157.3	158.1	156.4	157.1	163.0	163.4	160.8	158.4
Women's (12/77 = 100)	102.7	102.3	102.9	106.8	107.1	105.7	104.4	104.9	103.9	104.8	109.0	109.1	107.1	105.4
Coats and jackets	149.5	158.4	158.4	162.0	163.4	158.3	156.4	148.9	161.6	163.1	173.1	172.9	165.7	162.9
Dresses	163.7	153.1	152.8	163.1	166.6	162.0	160.1	158.6	140.7	140.9	148.1	151.1	147.1	145.4
Separates and sportswear (12/77 = 100)	98.0	96.7	98.3	100.3	100.1	101.2	100.2	101.0	97.3	98.8	101.2	101.0	101.9	101.0
Underwear, nightwear, and hosiery (12/77 = 100)	118.8	124.0	126.2	127.1	127.4	128.1	127.9	120.0	123.7	126.0	126.8	127.3	127.9	127.6
Suits (12/77 = 100)	86.3	84.2	87.0	92.7	89.4	83.4	78.6	103.6	104.0	105.6	114.1	111.0	100.6	92.7
Girls' (12/77 = 100)	106.4	104.4	102.7	105.6	106.7	106.3	105.8	106.2	104.2	103.1	108.0	108.9	106.2	105.2
Coats, jackets, dresses, and suits (12/77 = 100)	100.4	93.4	92.6	98.2	98.8	98.9	95.1	98.1	91.2	91.5	97.2	97.6	95.0	92.4
Separates and sportswear (12/77 = 100)	105.9	106.3	103.4	104.6	105.4	105.8	106.0	108.1	108.2	106.0	106.9	107.6	108.0	107.7
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	117.2	119.2	118.0	119.6	122.0	122.4	122.9	118.2	118.2	117.0	118.7	121.0	121.5	121.9

18. Continued — Consumer Price Index — U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
APPAREL AND UPKEEP — Continued														
Apparel commodities — Continued														
Apparel commodities less footwear — Continued														
Infants' and toddlers'	260.0	259.6	262.2	264.7	267.0	269.0	268.7	273.0	270.1	271.4	275.4	278.2	279.3	278.2
Other apparel commodities	212.2	212.9	214.3	212.7	210.8	209.7	209.9	204.8	201.4	202.8	201.6	199.5	198.8	198.9
Sewing materials and notions (12/77 = 100)	114.5	116.2	117.6	118.1	118.5	119.3	119.2	113.2	114.3	115.9	116.5	116.9	117.7	117.6
Jewelry and luggage (12/77 = 100)	146.8	146.7	147.4	145.7	143.8	142.5	142.8	141.2	137.5	138.1	136.7	134.5	133.5	133.6
Footwear	200.4	202.8	202.8	204.9	205.6	206.5	206.6	200.6	203.1	203.3	205.2	206.1	206.9	206.7
Men's (12/77 = 100)	127.7	130.3	130.7	132.5	132.3	132.4	132.1	129.5	132.2	132.6	134.5	134.4	134.5	134.1
Boys' and girls' (12/77 = 100)	129.1	130.1	129.5	129.2	130.4	131.5	132.1	129.6	132.5	132.3	132.1	133.6	134.6	134.8
Women's (12/77 = 100)	121.6	122.6	122.7	124.7	125.1	125.8	125.8	120.2	118.9	119.0	120.8	121.1	121.6	121.6
Apparel services	257.8	267.6	269.4	271.3	273.4	274.7	275.3	255.7	265.5	267.2	269.0	271.0	272.3	273.0
Laundry and drycleaning other than coin operated (12/77 = 100)	153.2	160.0	161.4	162.4	163.5	164.4	164.8	152.5	158.5	158.9	160.9	162.0	162.8	163.3
Other apparel services (12/77 = 100)	136.0	138.4	139.8	141.1	142.5	142.9	143.1	135.0	139.9	140.3	141.5	142.7	143.1	143.4
TRANSPORTATION	279.9	289.9	288.0	285.1	282.9	285.6	292.8	281.0	291.6	289.6	286.6	284.3	287.1	294.5
Private	277.9	286.6	284.5	281.3	278.8	281.5	288.9	279.7	289.0	286.9	283.7	281.2	284.0	291.6
New cars	182.2	197.4	195.5	194.4	196.0	197.5	198.1	182.5	197.3	195.3	194.2	195.9	197.3	197.9
Used cars	252.9	280.5	279.7	280.9	285.1	291.4	298.2	252.9	280.5	279.7	280.9	285.2	291.4	298.2
Gasoline	414.4	406.0	399.1	383.9	366.7	370.4	392.3	415.6	407.5	400.6	385.4	367.9	371.7	393.8
Automobile maintenance and repair	291.9	305.5	307.7	310.2	311.9	313.6	316.0	292.6	306.2	308.4	311.1	312.8	314.4	316.8
Body work (12/77 = 100)	142.3	151.5	153.7	154.5	155.0	156.7	158.3	142.2	149.8	152.1	152.7	153.3	154.0	154.7
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	138.9	145.7	146.5	148.7	149.5	150.8	151.6	141.7	149.5	150.2	152.8	153.7	154.9	155.7
Maintenance and servicing (12/77 = 100)	137.1	142.0	142.7	143.9	144.5	145.0	146.8	136.9	141.5	142.3	143.4	144.0	144.4	146.2
Power plant repair (12/77 = 100)	139.2	146.2	147.3	148.0	149.1	150.1	150.8	138.3	145.7	146.8	147.5	148.6	149.6	150.3
Other private transportation	241.0	253.3	253.4	254.5	255.1	255.7	258.7	243.9	256.9	256.8	257.8	258.2	258.8	261.8
Other private transportation commodities	208.5	215.5	214.8	215.6	214.9	216.9	217.5	211.1	218.0	217.3	218.2	217.3	219.4	220.0
Motor oil, coolant, and other products (12/77 = 100)	144.5	148.2	149.3	150.2	150.7	149.9	150.7	142.7	146.9	147.8	148.7	149.2	148.4	149.0
Automobile parts and equipment (12/77 = 100)	133.4	138.1	137.4	137.9	137.2	138.8	139.2	135.5	140.0	139.4	139.9	139.2	140.9	141.2
Tires	186.1	192.8	191.3	191.7	190.1	192.3	192.8	189.9	196.5	195.1	195.5	193.7	196.0	196.4
Other parts and equipment (12/77 = 100)	130.2	134.3	134.6	135.7	136.2	138.0	138.3	130.7	134.5	134.9	135.9	136.6	138.4	138.6
Other private transportation services	252.0	265.8	266.1	267.2	268.2	268.4	272.2	255.0	269.7	269.8	270.8	271.6	271.8	275.5
Automobile insurance	257.4	266.8	268.1	269.8	270.4	271.6	274.0	256.9	266.6	268.0	269.6	270.2	271.3	273.5
Automobile finance charges (12/77 = 100)	178.5	190.9	188.9	188.9	187.2	186.3	192.0	177.2	190.3	188.3	188.2	186.7	185.9	191.2
Automobile rental, registration, and other fees (12/77 = 100)	117.8	127.6	128.9	129.7	133.3	133.3	133.3	118.2	128.4	129.5	130.1	133.7	133.7	133.8
State registration	148.0	166.9	167.1	168.5	174.2	174.2	174.3	148.1	166.2	166.5	167.8	173.8	173.8	173.9
Drivers' licenses (12/77 = 100)	105.8	117.3	121.7	122.9	123.0	127.7	127.7	105.6	117.1	121.7	123.0	123.0	127.9	127.9
Vehicle inspection (12/77 = 100)	125.7	129.2	129.3	129.3	129.0	126.7	126.7	126.5	130.5	130.6	130.6	130.4	128.3	128.3
Other vehicle-related fees (12/77 = 100)	136.3	142.5	144.8	145.3	148.5	149.2	149.3	142.6	150.4	152.4	152.5	156.4	156.2	156.3
Public	303.9	334.9	336.8	336.7	338.3	342.1	345.6	293.6	329.4	331.0	331.0	333.3	335.1	337.9
Airline fare	360.7	375.5	379.3	379.0	382.7	388.9	395.0	359.3	372.7	376.3	376.3	379.8	385.2	392.4
Intercity bus fare	337.6	367.3	365.7	365.6	367.0	366.0	363.7	336.8	368.9	367.4	367.0	368.7	367.5	365.4
Intracity mass transit	253.5	305.9	306.7	306.6	308.1	308.3	309.2	251.5	305.1	305.8	305.7	307.2	307.1	307.9
Taxi fare	281.7	296.3	296.7	297.2	297.6	297.6	298.0	289.2	305.6	306.1	306.6	307.3	307.2	307.6
Intercity train fare	304.1	318.1	314.0	314.1	332.1	337.9	338.2	304.6	317.9	314.5	314.5	332.1	337.9	338.2
MEDICAL CARE	291.5	313.4	316.2	318.8	321.7	323.8	326.4	292.9	312.0	314.9	317.4	320.2	322.3	324.8
Medical care commodities	186.3	195.9	197.7	200.0	202.4	204.1	205.6	187.3	196.4	198.3	200.6	203.0	204.8	206.3
Prescription drugs	172.3	181.9	183.7	186.1	188.8	190.4	191.8	173.5	182.8	184.7	187.0	189.7	191.4	192.7
Anti-infective drugs (12/77 = 100)	132.2	138.2	138.4	139.3	140.9	142.5	143.3	134.3	140.1	140.4	141.1	142.5	144.1	145.1
Tranquilizers and sedatives (12/77 = 100)	137.3	145.4	146.8	148.6	152.0	153.8	154.9	136.5	144.0	146.5	148.3	151.8	153.8	154.7
Circulatories and diuretics (12/77 = 100)	125.5	132.2	134.0	135.7	136.7	137.0	138.4	126.8	132.1	134.0	135.6	136.6	136.8	138.2
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	157.2	165.6	168.4	170.8	173.3	175.4	177.2	158.1	166.9	169.7	172.0	174.6	176.9	178.6
Pain and symptom control drugs (12/77 = 100)	137.7	147.3	148.8	150.8	153.1	153.7	154.6	138.9	148.7	150.3	152.3	154.6	155.2	156.0
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	131.1	138.8	139.9	142.7	144.7	145.9	146.3	132.0	138.8	139.9	142.7	144.8	146.0	146.4
Nonprescription drugs and medical supplies (12/77 = 100)	133.5	139.9	141.1	142.5	143.9	145.1	146.3	134.4	140.4	141.6	143.2	144.6	145.9	147.1
Eyeglasses (12/77 = 100)	125.3	128.3	128.9	129.5	130.1	130.9	131.6	124.7	127.1	127.6	128.1	128.7	129.7	130.4
Internal and respiratory over-the-counter drugs	211.5	222.8	225.1	228.1	231.1	233.4	235.2	212.6	223.9	226.4	229.6	232.5	235.0	236.8
Nonprescription medical equipment and supplies (12/77 = 100)	128.6	135.9	137.1	138.1	138.9	139.5	141.1	130.7	136.6	137.7	138.8	139.7	140.4	142.0
Medical care services	314.4	339.4	342.4	345.1	348.0	350.2	353.0	315.8	337.5	340.6	343.0	345.8	348.0	350.7
Professional services	275.8	292.0	294.2	295.8	297.8	299.2	301.2	278.4	292.2	294.3	295.9	297.9	299.3	301.3
Physicians' services	297.5	315.5	318.8	320.3	322.2	324.0	326.4	302.4	318.6	321.7	323.2	325.2	327.0	329.4
Dental services	260.2	275.8	276.8	278.6	281.1	282.1	283.9	264.0	274.1	274.9	276.6	279.2	280.3	282.1
Other professional services (12/77 = 100)	134.2	140.3	141.5	142.4	142.5	143.4	143.8	132.6	137.2	138.5	139.4	139.4	140.2	140.7
Other medical care services	381.1	396.8	400.8	404.7	408.7	411.9	415.7	380.3	393.8	398.0	401.6	405.4	408.5	412.1
Hospital and other medical services (12/77 = 100)	148.6	165.6	167.1	168.5	169.8	170.6	171.6	148.6	164.0	165.7	166.9	168.3	169.1	170.0
Hospital room	470.4	529.4	533.8	538.5	542.2	543.8	548.8	467.1	522.0	527.0	531.0	535.2	538.7	539.4
Other hospital and medical care services (12/77 = 100)	148.7	162.2	163.8	165.2	166.4	167.6	168.5	147.6	161.2	163.0	164.2	165.5	166.6	167.5

18. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	June	Jan.	Feb.	Mar.	Apr.	May.	June	June	Jan.	Feb.	Mar.	Apr.	May	June
ENTERTAINMENT	220.8	229.2	231.2	232.8	233.9	234.4	235.6	218.3	226.1	228.1	229.5	230.5	231.1	232.3
Entertainment commodities	225.4	232.0	234.3	236.6	238.0	238.8	239.6	220.8	226.7	228.9	230.8	232.0	232.8	233.8
Reading materials (12/77 = 100)	136.2	142.9	144.1	146.1	146.8	148.5	149.4	136.1	142.1	143.3	145.3	146.1	147.7	148.6
Newspapers	264.9	270.5	273.1	276.4	280.1	281.6	283.9	264.8	270.1	272.8	276.0	279.7	281.2	283.4
Magazines, periodicals, and books (12/77 = 100)	137.9	149.0	149.9	152.4	151.6	154.4	155.0	138.2	148.8	149.7	152.2	151.4	154.2	154.8
Sporting goods and equipment (12/77 = 100)	126.8	129.5	131.5	132.3	132.9	132.8	132.7	120.4	122.4	123.8	124.3	124.7	124.9	125.3
Sport vehicles (12/77 = 100)	128.7	(¹)	133.9	135.4	136.1	135.4	135.7	118.4	(¹)	121.9	122.5	122.8	122.6	123.9
Indoor and warm weather sport equipment (12/77 = 100)	116.9	120.1	119.6	119.9	120.4	121.0	119.6	116.9	118.2	117.7	118.1	118.6	119.2	117.1
Bicycles	191.0	194.8	197.3	197.6	198.9	199.4	197.6	192.0	196.2	198.9	198.9	200.2	200.7	198.8
Other sporting goods and equipment (12/77 = 100)	122.7	125.3	127.0	125.6	126.3	127.6	127.9	122.2	125.2	127.4	126.0	126.5	127.9	128.3
Toys, hobbies, and other entertainment (12/77 = 100)	129.3	132.2	133.2	134.5	135.4	135.5	136.1	128.1	131.2	132.3	133.5	134.3	134.4	134.9
Toys, hobbies, and music equipment (12/77 = 100)	127.9	130.8	131.7	133.4	134.1	134.8	135.9	125.3	127.7	128.6	130.2	130.7	131.4	132.4
Photographic supplies and equipment (12/77 = 100)	126.2	125.2	126.9	128.3	129.8	130.0	130.3	126.5	126.3	127.9	129.5	131.0	131.2	131.5
Pet supplies and expenses (12/77 = 100)	134.2	139.7	140.6	140.8	141.9	141.0	140.6	134.3	140.5	141.6	141.7	142.7	141.8	141.5
Entertainment services	214.7	225.5	227.1	227.8	228.5	228.7	230.5	215.1	226.1	227.8	228.4	229.2	229.2	230.9
Fees for participant sports (12/77 = 100)	131.3	139.6	140.9	141.9	142.0	141.6	142.5	131.4	141.2	142.5	143.5	143.7	142.9	143.8
Admissions (12/77 = 100)	124.9	131.2	131.6	131.2	132.2	133.0	133.5	124.8	130.1	130.6	130.3	131.2	132.1	132.6
Other entertainment services (12/77 = 100)	122.2	124.2	125.0	125.1	125.2	125.7	127.9	123.4	124.7	125.9	125.9	125.9	126.4	128.7
OTHER GOODS AND SERVICES	233.4	248.4	250.3	252.2	253.8	255.0	255.8	231.4	245.0	247.1	249.3	250.9	252.4	253.1
Tobacco products	219.1	227.1	230.7	234.1	235.1	237.4	237.8	218.4	226.2	229.8	233.2	234.0	236.6	237.0
Cigarettes	221.4	230.0	233.6	237.3	238.0	240.4	240.7	220.8	229.1	232.7	236.3	236.9	239.6	239.9
Other tobacco products and smoking accessories (12/77 = 100)	132.3	134.7	136.8	138.1	139.9	141.0	141.8	132.7	135.0	136.9	138.2	140.1	141.1	142.0
Personal care	232.1	240.9	242.3	243.7	245.9	246.5	247.8	229.7	238.8	240.4	241.8	244.1	244.7	246.0
Toilet goods and personal care appliances	228.6	236.4	238.5	240.6	243.8	244.5	246.3	227.2	236.9	239.2	241.5	244.7	245.4	247.0
Products for the hair, hairpieces, and wigs (12/77 = 100)	132.8	137.2	138.4	140.8	142.9	142.1	143.2	130.4	136.4	137.8	140.0	142.3	141.7	142.6
Dental and shaving products (12/77 = 100)	139.4	144.0	145.6	148.0	149.0	150.1	150.5	136.6	142.6	144.2	146.6	147.6	148.6	148.9
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	129.0	134.1	135.0	135.1	136.5	137.6	139.6	128.0	134.5	135.8	136.1	137.5	138.5	140.1
Other toilet goods and small personal care appliances (12/77 = 100)	132.0	135.9	137.0	137.4	140.3	140.5	140.8	135.4	138.9	140.2	140.7	143.5	144.0	144.4
Personal care services	236.0	245.7	246.5	247.3	248.7	249.2	250.1	232.5	241.0	241.8	242.6	244.0	244.4	245.4
Beauty parlor services for women	237.7	246.9	247.7	248.9	250.7	251.3	252.3	232.7	240.5	241.3	242.5	244.3	245.0	245.9
Haircuts and other barber shop services for men (12/77 = 100)	131.9	138.0	138.4	138.4	138.8	138.9	139.4	131.3	136.8	137.2	137.2	137.6	137.7	138.2
Personal and educational expenses	257.8	288.1	289.2	290.4	291.9	292.8	293.3	258.5	288.9	290.2	291.7	293.5	294.6	295.2
Schoolbooks and supplies	230.9	260.7	262.9	263.3	263.8	264.2	264.6	234.7	264.8	267.1	267.5	268.0	268.4	268.8
Personal and educational services	264.2	294.8	295.8	297.1	298.7	299.8	300.3	264.6	295.2	296.3	298.0	300.0	301.4	302.0
Tuition and other school fees	132.9	150.5	150.6	151.1	151.4	151.4	151.5	133.1	150.7	150.9	151.7	152.0	152.0	152.1
College tuition (12/77 = 100)	132.4	149.9	150.1	150.7	151.0	151.0	151.2	132.4	149.6	149.8	150.9	151.3	151.3	151.4
Elementary and high school tuition (12/77 = 100)	134.4	152.1	152.2	152.2	152.2	152.2	152.2	134.4	152.8	152.9	152.9	152.9	152.9	152.9
Personal expenses (12/77 = 100)	146.3	154.3	156.1	157.4	160.9	163.6	164.5	144.8	153.7	155.3	156.7	160.5	163.6	164.6
Special indexes:														
Gasoline, motor oil, coolant, and other products	408.4	400.5	393.9	379.3	362.6	366.1	367.3	409.5	401.8	395.3	380.6	363.7	367.2	368.6
Insurance and finance	393.4	423.9	424.8	420.9	426.3	431.5	436.5	393.1	422.8	423.5	419.9	425.9	430.9	436.0
Utilities and public transportation	278.5	297.7	299.1	302.7	305.1	310.8	316.4	276.7	296.4	297.7	301.5	304.0	309.6	315.5
Housekeeping and home maintenance services	328.6	343.0	344.0	344.0	347.5	349.8	351.2	325.1	343.3	344.2	344.0	348.2	350.4	351.8

[1] Not available.

19. Consumer Price Index for All Urban Consumers: Cross classification of region and population size class by expenditure category and commodity and service group

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000-1.250 million)			Size class C (75,000-385,000)			Size class D (75,000 or less)		
	1982			1982			1982			1982		
	Feb.	Apr.	June	Feb.	Apr.	June	Feb.	Apr.	June	Feb.	Apr.	June
	Northeast											
EXPENDITURE CATEGORY												
All items	144.2	143.8	147.7	150.7	150.0	155.5	158.1	158.6	163.5	151.4	151.9	156.9
Food and beverages	143.3	143.7	145.9	142.7	142.2	144.1	145.7	147.4	148.8	140.4	140.4	142.9
Housing	148.0	144.5	151.6	155.7	155.3	165.2	172.5	173.3	182.1	159.5	160.5	169.3
Apparel and upkeep	117.0	119.1	118.6	120.5	122.5	122.8	123.1	127.4	128.3	119.9	125.1	123.4
Transportation	156.5	153.7	157.2	164.2	160.0	164.6	161.6	158.6	162.2	161.7	158.1	161.2
Medical care	145.1	146.4	147.5	147.0	148.9	150.2	148.7	150.4	152.7	144.8	151.5	155.4
Entertainment	133.3	135.5	136.5	132.4	136.2	137.5	136.1	135.8	136.4	137.6	139.0	141.1
Other goods and services	136.9	139.0	139.8	140.6	141.1	142.1	142.9	145.3	146.7	140.6	142.9	144.0
COMMODITY AND SERVICE GROUP												
Commodities	142.1	140.8	144.6	147.9	146.6	151.5	150.1	149.6	153.8	147.6	146.5	150.6
Commodities less food and beverages	141.4	139.0	143.8	150.5	148.7	155.1	152.2	150.6	156.2	151.0	149.4	154.3
Services	146.9	147.4	151.8	155.1	155.4	161.9	171.0	173.4	179.1	157.3	160.4	166.8
	North Central region											
EXPENDITURE CATEGORY												
All items	153.6	155.2	159.6	151.9	155.1	155.3	149.1	151.2	155.2	151.0	153.3	156.4
Food and beverages	141.6	141.9	144.1	140.8	141.7	142.8	143.1	143.1	145.0	144.7	146.2	148.7
Housing	164.9	168.6	175.1	159.9	167.2	163.3	152.7	157.2	162.1	155.5	160.7	164.0
Apparel and upkeep	112.7	114.8	114.0	121.1	122.7	123.0	121.8	125.8	124.7	119.5	123.5	120.5
Transportation	161.1	158.7	165.1	159.7	156.9	163.2	161.0	158.4	165.7	160.3	157.2	163.1
Medical care	148.4	150.9	153.0	150.8	152.8	155.2	150.3	153.6	156.6	154.5	157.0	158.3
Entertainment	137.1	137.0	137.1	126.4	130.3	129.5	136.1	138.1	139.2	132.5	130.9	131.5
Other goods and services	138.8	140.3	141.4	145.1	146.5	152.5	137.3	139.0	141.2	144.6	146.4	148.3
COMMODITY AND SERVICE GROUP												
Commodities	145.2	145.4	149.4	145.4	146.4	148.5	143.5	144.3	148.8	142.1	143.7	147.9
Commodities less food and beverages	146.9	147.0	151.9	147.3	148.3	150.9	143.6	144.8	150.5	141.0	142.6	147.6
Services	166.1	169.8	174.8	162.6	169.3	166.2	158.4	162.4	165.6	165.0	166.7	169.8
	South											
EXPENDITURE CATEGORY												
All items	152.6	152.9	156.3	157.2	155.7	158.4	154.0	152.3	157.6	152.3	153.5	156.5
Food and beverages	144.2	145.0	146.7	144.8	144.9	146.9	144.1	144.0	146.0	146.1	145.9	147.7
Housing	160.2	161.1	165.2	168.3	165.2	167.2	162.7	159.1	167.0	158.8	161.5	164.6
Apparel and upkeep	122.6	125.6	124.9	121.1	124.3	123.6	117.0	120.2	118.6	105.7	111.1	109.4
Transportation	161.5	157.5	163.4	162.8	159.7	167.0	160.7	157.1	165.1	159.9	155.8	163.3
Medical care	145.9	149.5	152.8	150.5	152.3	154.5	155.4	160.1	162.5	162.5	165.1	166.6
Entertainment	129.3	130.1	132.0	140.0	141.2	143.1	140.4	141.1	142.7	140.4	145.7	145.2
Other goods and services	141.2	142.8	144.1	140.7	142.4	143.3	142.0	143.7	144.5	147.9	150.2	150.4
COMMODITY AND SERVICE GROUP												
Commodities	146.8	146.3	149.1	148.4	147.6	150.9	146.0	144.3	149.2	145.0	146.0	149.7
Commodities less food and beverages	148.0	146.9	150.1	149.9	148.8	152.6	148.8	144.5	150.6	144.6	146.0	150.5
Services	160.7	162.1	166.5	170.4	167.8	169.8	166.3	164.5	170.6	163.3	164.8	166.8
	West											
EXPENDITURE CATEGORY												
All items	157.9	158.5	160.8	157.1	157.0	158.6	150.2	151.1	149.7	153.3	157.9	159.9
Food and beverages	143.9	144.5	146.4	147.9	147.6	148.9	143.4	143.5	145.1	148.1	148.5	149.9
Housing	167.2	168.1	170.1	164.9	164.8	165.6	154.4	156.3	150.3	153.9	163.5	165.5
Apparel and upkeep	121.7	120.6	120.0	126.4	126.8	125.2	118.8	119.7	122.3	131.9	140.4	140.5
Transportation	164.2	162.9	167.7	163.6	161.7	165.9	160.9	158.3	163.5	164.5	160.5	162.8
Medical care	157.8	160.7	164.4	153.7	156.0	159.5	154.8	157.3	159.6	157.9	162.4	166.2
Entertainment	135.1	137.7	138.5	135.5	136.8	139.4	130.4	133.9	134.2	147.8	148.9	150.6
Other goods and services	144.5	147.5	147.0	145.3	148.9	149.1	137.1	139.5	139.9	147.6	149.8	153.3
COMMODITY AND SERVICE GROUP												
Commodities	146.0	145.5	147.8	148.4	149.1	149.5	145.2	146.4	147.5	147.5	148.9	151.3
Commodities less food and beverages	146.9	145.9	148.4	148.6	148.3	149.7	145.9	147.5	148.5	147.3	149.1	152.0
Services	173.7	175.9	178.1	169.1	169.3	171.1	157.3	157.9	152.8	161.8	171.2	172.5

20. Consumer Price Index—U.S. city average, and selected areas

[1967 = 100 unless otherwise specified]

Area[1]	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
U.S. city average[2]	271.3	282.5	283.4	283.1	284.3	287.1	290.6	271.4	282.1	282.9	282.5	283.7	286.5	290.1
Anchorage, Alaska (10/67 = 100)	...	253.0	...	260.0	...	263.8	...	...	248.6	...	254.5	...	258.0	...
Atlanta, Ga.	269.2	...	279.8	...	280.2	...	291.1	268.8	...	282.7	...	282.9	...	282.9
Baltimore, Md.	...	282.1	...	281.9	...	283.6	...	...	282.3	...	282.2	...	283.7	...
Boston, Mass.	...	274.0	...	269.8	...	272.5	...	...	273.4	...	269.8	...	272.0	...
Buffalo, N.Y.	257.2	...	259.9	...	258.3	...	265.8	256.1	...	258.0	...	256.4	...	264.1
Chicago, Ill.-Northwestern Ind.	269.1	275.4	274.9	276.4	280.2	287.7	291.8	267.9	275.9	275.4	276.5	280.0	287.0	291.5
Cincinnati, Ohio-Ky.-Ind.	...	285.7	...	284.9	...	288.7	...	...	288.4	...	287.2	...	291.2	...
Cleveland, Ohio	285.3	...	285.9	...	286.5	...	297.8	283.8	...	285.0	...	285.7	...	297.0
Dallas-Ft. Worth, Tex.	286.0	...	293.6	...	297.2	...	304.8	284.0	...	289.8	...	292.7	...	300.5
Denver-Boulder, Colo.	...	305.4	...	309.2	...	313.4	...	...	310.5	...	315.0	...	319.5	...
Detroit, Mich.	280.5	280.8	277.8	278.2	283.7	285.9	289.1	275.9	277.8	274.8	275.1	280.3	282.7	286.0
Honolulu, Hawaii	252.8	...	262.2	...	263.8	...	269.5	253.8	...	263.2	...	264.7	...	269.5
Houston, Tex.	292.9	...	304.1	...	304.9	...	313.9	290.4	...	300.3	...	302.1	...	310.9
Kansas City, Mo.-Kansas	270.5	...	276.0	...	274.0	...	281.6	269.1	...	274.1	...	272.1	...	280.1
Los Angeles-Long Beach, Anaheim, Calif.	267.9	285.8	285.6	286.6	286.8	287.1	290.1	271.7	289.8	289.4	290.4	290.5	290.6	293.9
Miami, Fla. (11/77 = 100)	...	155.2	...	155.1	...	155.7	...	...	156.4	...	156.4	...	157.0	...
Milwaukee, Wis.	...	291.3	...	289.3	...	292.9	...	...	295.3	...	292.5	...	296.0	...
Minneapolis-St. Paul, Minn.-Wis.	376.1	...	306.0	...	301.7	...	304.1	278.6	...	305.3	...	301.2	...	303.8
New York, N.Y.-Northeastern N.J.	258.6	268.5	269.0	267.4	268.2	270.9	276.7	257.9	267.5	267.8	265.9	266.5	269.4	275.3
Northeast, Pa. (Scranton)	...	272.5	...	267.2	...	270.2	...	...	274.5	...	268.4	...	272.1	...
Philadelphia, Pa.-N.J.	265.4	275.7	275.5	274.7	275.1	275.1	279.7	265.6	275.1	275.1	274.3	274.5	274.7	279.1
Pittsburgh, Pa.	271.3	...	278.6	...	275.3	...	285.1	273.0	...	280.0	...	276.7	...	285.9
Portland, Oreg.-Wash.	...	288.4	...	286.7	...	282.1	...	...	285.5	...	283.9	...	279.7	...
St. Louis, Mo.-Ill.	...	278.4	...	280.7	...	285.7	...	...	277.1	...	279.3	...	284.5	...
San Diego, Calif.	...	323.1	...	319.0	...	329.2	...	...	317.4	...	313.9	...	323.3	...
San Francisco-Oakland, Calif.	274.0	...	295.8	...	298.8	...	304.6	274.3	...	294.9	...	297.8	...	303.4
Seattle-Everett, Wash.	...	295.9	...	293.4	...	301.2	...	...	291.9	...	289.6	...	297.1	...
Washington, D.C.-Md.-Va.	...	278.0	...	278.8	...	278.4	...	...	281.8	...	283.8	...	283.3	...

[1] The areas listed include not only the central city but the entire portion of the Standard Metropolitan Statistical Area, as defined for the 1970 Census of Population, except that the Standard Consolidated Area is used for New York and Chicago.

[2] Average of 85 cities.

21. Producer Price Indexes, by stage of processing

[1967=100]

Commodity grouping	Annual average 1981	1981						1982						
		July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.[1]	Apr.	May	June	July
FINISHED GOODS														
Finished goods	[r]269.8	271.8	271.5	271.5	274.3	274.7	275.4	277.9	277.9	[r]277.3	276.9	277.7	279.9	281.7
Finished consumer goods	[r]271.3	273.5	273.0	273.1	275.1	275.2	275.8	278.3	278.6	[r]277.7	276.9	277.6	280.0	282.0
Finished consumer foods	[r]253.6	257.6	256.3	256.2	254.0	252.7	252.9	256.4	258.2	257.1	259.8	262.3	263.4	260.7
Crude	[r]263.8	262.7	256.9	253.5	253.8	260.0	273.9	280.6	282.5	[r]263.3	266.1	259.4	254.3	240.6
Processed	250.6	255.0	254.2	254.4	252.0	249.9	249.0	252.1	254.0	[r]254.5	257.1	260.4	262.0	260.4
Nondurable goods less foods	[r]319.6	322.5	322.1	324.2	324.3	325.4	326.3	329.3	330.3	[r]328.8	324.9	324.1	328.1	334.7
Durable goods	[r]218.6	218.1	218.3	215.8	224.5	224.7	225.4	226.2	224.0	[r]223.9	223.8	224.7	226.2	227.0
Consumer nondurable goods less food and energy	[r]208.8	209.5	210.4	211.8	212.6	213.6	213.9	217.4	219.6	[r]220.5	221.4	222.9	222.9	223.3
Capital equipment	264.3	265.4	265.8	265.3	271.5	273.0	274.1	276.2	275.0	[r]275.8	277.1	278.3	279.6	280.9
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	306.0	308.5	310.1	309.7	309.4	309.0	309.4	311.0	311.1	[r]310.6	310.1	309.8	310.0	311.4
Materials and components for manufacturing	[r]286.1	287.9	289.8	290.2	290.2	289.5	289.3	290.4	290.9	[r]290.4	290.9	291.5	290.0	289.6
Materials for food manufacturing	[r]260.4	260.5	261.0	254.6	250.9	246.8	245.6	250.7	252.8	252.0	254.3	260.0	260.9	260.0
Materials for nondurable manufacturing	[r]285.8	289.2	291.0	291.2	290.9	289.4	288.8	289.0	289.3	[r]288.8	288.1	288.1	285.8	283.6
Materials for durable manufacturing	[r]312.1	314.4	316.0	317.1	316.7	314.9	314.0	313.6	313.1	[r]310.9	311.2	310.6	307.3	308.2
Components for manufacturing	[r]259.3	259.5	261.8	263.8	265.1	266.9	267.8	269.8	270.9	[r]271.8	272.9	273.8	273.9	274.2
Materials and components for construction	[r]287.6	290.4	290.7	290.0	290.1	290.2	291.1	292.0	293.0	293.3	293.8	293.4	294.2	294.0
Processed fuels and lubricants	[r]595.4	602.0	607.8	601.4	596.9	595.1	598.1	604.4	596.8	[r]593.0	579.8	569.9	581.2	601.6
Manufacturing industries	[r]498.6	500.3	508.3	500.5	497.5	496.4	499.0	505.9	497.8	[r]496.1	487.6	482.3	492.0	508.4
Nonmanufacturing industries	[r]680.8	692.0	695.6	690.5	684.7	682.2	685.6	691.3	684.2	[r]678.3	660.9	646.7	650.3	683.4
Containers	[r]276.1	278.8	280.3	280.6	280.9	280.6	280.2	282.5	285.5	[r]286.3	287.4	287.1	286.7	286.4
Supplies	[r]263.8	266.0	266.1	266.1	266.6	267.2	268.3	269.8	270.4	[r]270.6	272.3	273.6	273.6	273.5
Manufacturing industries	[r]253.1	255.0	256.0	256.8	258.2	259.2	261.0	262.6	263.3	[r]264.5	265.6	267.2	267.3	267.3
Nonmanufacturing industries	269.6	272.0	271.6	271.1	271.2	271.6	272.4	273.8	274.4	[r]274.1	276.0	277.2	277.1	277.0
Feeds	230.4	232.8	229.1	221.3	215.9	212.0	214.6	214.8	212.0	[r]208.1	212.9	214.2	213.1	211.1
Other supplies	276.4	278.7	279.3	280.7	282.3	283.7	284.1	285.7	287.3	[r]287.9	289.1	290.2	290.4	290.7
CRUDE MATERIALS														
Crude materials for further processing	[r]329.0	337.3	333.0	327.4	319.9	313.9	311.5	318.4	321.6	[r]320.0	322.8	328.1	325.7	323.4
Foodstuffs and feedstuffs	257.4	267.2	261.8	253.4	245.7	238.3	233.7	242.6	248.3	247.9	254.3	262.3	259.8	255.5
Nonfood materials	[r]482.3	487.2	485.3	486.0	479.2	476.3	478.6	481.5	479.3	[r]475.2	470.4	470.4	467.9	470.0
Nonfood materials except fuel	[r]413.7	413.1	413.9	410.2	404.1	397.8	396.2	399.5	394.8	[r]387.1	379.0	376.6	370.0	369.1
Manufacturing industries	[r]429.4	428.7	429.6	425.4	418.6	411.7	409.8	413.2	407.5	[r]398.4	389.0	386.4	378.9	378.4
Construction	[r]261.8	262.6	263.1	263.6	264.7	264.8	265.2	267.6	270.5	[r]273.2	275.3	274.0	273.7	270.4
Crude fuel	[r]751.2	781.2	786.7	788.7	779.0	792.5	813.0	812.9	824.5	[r]839.7	853.7	866.1	885.2	903.1
Manufacturing industries	[r]864.9	902.6	883.0	911.4	898.4	915.8	942.5	940.3	954.4	[r]974.7	992.4	1,008.2	1,033.6	1,056.0
Nonmanufacturing industries	[r]674.0	698.1	687.8	704.8	697.8	708.2	724.0	725.6	735.4	[r]746.6	757.6	767.4	781.7	796.0
SPECIAL GROUPINGS														
Finished goods excluding foods	[r]273.3	274.7	274.6	274.7	279.1	280.0	280.9	283.0	282.4	[r]281.9	280.6	280.9	283.4	286.7
Finished consumer goods excluding foods	[r]276.5	277.9	277.7	277.9	281.6	282.4	283.2	285.2	284.9	[r]284.0	281.7	281.6	284.6	288.7
Finished consumer goods less energy	233.6	235.0	235.0	234.9	237.2	237.2	237.6	240.5	241.3	[r]241.3	242.4	244.1	244.9	244.5
Intermediate materials less foods and feeds	310.1	312.7	314.5	314.6	314.6	314.5	314.9	316.4	316.4	[r]316.0	315.3	314.6	314.8	316.4
Intermediate materials less energy	285.2	287.2	288.5	288.7	288.8	288.5	288.7	289.9	290.7	[r]290.5	291.2	291.7	290.9	290.6
Intermediate foods and feeds	[r]250.3	251.1	250.2	243.5	239.3	235.2	235.2	238.8	239.4	[r]237.7	240.7	245.0	245.3	244.1
Crude materials less agricultural products	[r]545.6	550.6	549.1	551.4	543.4	540.7	543.5	546.1	543.9	[r]538.4	532.2	531.7	529.4	531.8
Crude materials less energy	254.0	261.8	258.0	250.4	243.2	235.8	231.6	239.1	243.4	242.8	247.3	252.5	248.6	245.0

[1] Data for March 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r=revised.

22. Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981						1982						
			July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.[1]	Apr.	May	June	July
	All commodities	293.4	296.2	296.4	295.7	296.1	295.5	295.8	298.3	298.6	r298.0	297.9	298.6	299.4	300.6
	All commodities (1957-59 = 100)	311.3	314.3	314.5	313.7	314.2	313.5	313.8	316.5	316.8	r316.2	316.1	316.8	317.7	318.9
	Farm products and processed foods and feeds	251.5	256.8	254.2	250.3	246.0	242.5	241.0	246.0	248.4	247.5	251.4	255.6	255.3	252.5
	Industrial commodities	304.1	306.2	307.2	307.4	309.0	309.3	310.0	311.8	311.6	311.0	309.9	309.5	310.7	313.0
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	254.9	263.3	257.9	251.1	243.1	237.4	234.6	242.2	247.1	r244.7	250.6	256.1	252.7	246.5
01-1	Fresh and dried fruits and vegetables	267.3	265.6	258.1	252.8	248.8	254.0	280.5	289.2	290.1	r257.3	266.7	270.7	263.8	238.4
01-2	Grains	r248.4	257.4	242.7	227.0	227.6	226.5	213.6	225.2	223.2	220.9	226.0	228.2	225.7	212.8
01-3	Livestock	248.0	268.5	262.0	257.3	244.5	231.1	225.0	236.8	251.2	255.6	267.6	282.9	277.5	270.3
01-4	Live poultry	201.2	215.3	210.3	196.7	185.7	175.0	171.4	186.8	197.3	197.7	186.2	192.7	207.2	212.5
01-5	Plant and animal fibers	242.0	251.3	232.5	206.5	211.7	198.5	188.4	198.2	193.5	r199.5	207.4	214.1	203.1	220.8
01-6	Fluid milk	287.4	284.3	285.0	287.3	294.3	288.2	286.7	287.6	285.8	282.5	280.3	278.8	278.9	279.0
01-7	Eggs	187.1	185.1	180.7	193.2	193.8	209.7	195.5	187.0	200.6	204.0	192.1	184.3	159.3	171.7
01-8	Hay, hayseeds, and oilseeds	274.1	290.0	284.3	267.2	230.4	221.1	218.8	218.4	217.6	213.7	222.8	224.3	219.3	220.0
01-9	Other farm products	r273.8	250.2	283.9	268.9	263.3	273.1	280.2	280.1	273.7	273.0	274.2	273.9	271.8	265.5
02	Processed foods and feeds	248.7	252.2	251.2	248.9	246.6	244.3	243.6	247.1	248.1	248.1	250.8	254.4	255.8	254.8
02-1	Cereal and bakery products	255.5	258.3	257.7	258.5	256.9	256.5	255.1	256.6	253.3	r253.3	253.8	253.9	253.3	253.6
02-2	Meats, poultry, and fish	246.2	257.1	254.4	253.3	246.6	240.0	236.1	243.7	247.9	r250.0	257.1	267.1	271.1	266.1
02-3	Dairy products	r245.6	245.1	245.3	245.5	246.8	246.9	247.2	247.7	248.0	248.0	248.4	248.5	248.7	248.8
02-4	Processed fruits and vegetables	r261.2	265.9	267.3	270.0	271.7	270.5	271.8	273.2	276.3	r275.9	274.5	273.4	275.4	275.9
02-5	Sugar and confectionery	r275.9	266.0	267.3	246.8	246.7	244.1	247.6	256.8	257.2	255.0	256.4	265.8	269.5	276.1
02-6	Beverages and beverage materials	r248.0	249.0	249.4	249.1	250.0	251.4	251.9	253.9	255.1	r256.4	256.6	256.7	256.5	256.7
02-7	Fats and oils	r227.4	234.8	229.5	224.3	223.4	221.5	219.1	216.6	216.8	r213.7	218.6	222.2	222.0	221.4
02-8	Miscellaneous processed foods	250.1	252.2	252.1	253.0	249.9	250.1	250.1	251.0	250.9	r249.5	249.5	248.0	248.6	248.0
02-9	Prepared animal feeds	r230.2	232.2	228.9	222.9	218.1	214.7	217.2	217.4	214.9	r211.4	216.1	217.4	216.4	214.6
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	r199.7	201.3	202.4	202.9	204.0	203.6	203.4	205.0	205.6	205.0	204.7	205.1	204.5	204.1
03-1	Synthetic fibers (12/75 = 100)	r156.3	159.7	161.2	161.0	162.7	161.6	161.5	162.9	163.2	r161.3	162.1	164.3	163.8	162.4
03-2	Processed yarns and threads (12/75 = 100)	r138.0	140.3	142.0	142.3	144.4	140.3	139.6	139.2	140.7	r140.5	140.4	141.0	139.4	139.2
03-3	Gray fabrics (12/75 = 100)	r146.8	148.2	149.0	149.1	148.0	147.4	147.2	148.2	147.3	r146.6	145.8	145.5	145.8	144.8
03-4	Finished fabrics (12/75 = 100)	125.2	126.0	126.8	126.8	126.7	126.5	125.6	126.8	127.1	r125.6	125.5	125.4	124.0	123.8
03-81	Apparel	r186.0	187.2	187.8	188.0	189.9	190.8	191.0	192.7	193.2	r193.4	192.2	192.7	193.0	193.1
03-82	Textile housefurnishings	r226.7	227.1	228.8	232.2	233.0	233.4	233.6	237.6	240.6	r241.4	246.5	246.4	244.4	243.0
04	Hides, skins, leather, and related products	r260.9	261.1	261.3	261.7	260.0	259.8	260.7	261.8	261.6	r260.6	264.4	263.4	262.7	261.3
04-2	Leather	r319.8	319.0	313.7	313.2	313.7	311.3	312.3	319.0	317.7	r313.3	313.2	309.5	306.7	307.4
04-3	Footwear	r240.9	242.4	242.5	242.9	239.6	239.8	240.1	238.9	238.6	r239.8	243.7	242.5	243.8	241.7
04-4	Other leather and related products	r241.8	242.9	245.1	245.0	245.0	245.4	245.4	247.5	248.1	r248.1	253.2	253.2	250.5	252.0
05	Fuels and related products and power	r694.5	704.9	704.3	703.5	698.1	698.1	702.5	705.1	697.8	r689.7	671.2	661.9	677.4	701.8
05-1	Coal	r497.2	505.5	507.0	510.2	510.8	512.7	515.2	525.3	529.9	r529.6	532.5	534.4	534.1	538.6
05-2	Coke	r456.4	469.7	469.7	469.7	469.7	469.7	469.7	469.7	469.7	r467.5	468.1	468.2	462.7	463.9
05-3	Gas fuels[2]	r939.4	969.4	949.3	976.6	965.6	983.0	1,003.7	987.9	987.6	r990.5	996.6	1,003.4	1,029.7	1,055.4
05-4	Electric power	r367.2	374.6	385.8	383.8	378.4	378.3	384.2	392.8	392.9	r403.7	406.7	405.5	406.6	416.9
05-61	Crude petroleum[3]	r803.5	798.9	796.8	796.8	788.2	785.9	787.2	787.2	770.3	r744.8	718.0	718.2	718.5	718.7
05-7	Petroleum products, refined[4]	r805.9	816.3	813.4	806.1	802.3	798.3	798.6	801.9	789.7	r770.6	733.4	712.7	738.5	777.1
06	Chemicals and allied products	r287.6	291.3	293.3	293.3	292.4	292.0	291.8	292.9	293.6	294.6	294.5	296.2	293.5	291.6
06-1	Industrial chemicals[5]	r363.3	370.4	371.5	371.8	367.9	363.7	362.8	362.9	362.2	r361.4	359.6	358.1	352.9	349.7
06-21	Prepared paint	r249.8	250.7	250.7	250.7	250.7	254.5	256.4	258.9	258.9	r258.9	259.3	265.1	265.1	265.1
06-22	Paint materials	r300.1	304.5	308.5	308.0	308.1	308.3	305.8	306.6	306.4	r306.8	306.8	306.2	304.2	304.3
06-3	Drugs and pharmaceuticals	r193.5	195.5	195.0	197.8	198.5	198.2	198.9	202.2	204.4	r205.9	208.6	209.4	209.6	209.9
06-4	Fats and oils, inedible	295.6	290.9	305.6	285.6	277.7	282.5	280.4	272.8	274.2	r290.1	282.6	288.4	287.5	278.2
06-5	Agricultural chemicals and chemical products	r285.0	288.9	293.4	292.6	293.1	295.7	294.9	296.8	298.0	r297.1	296.3	294.9	294.0	291.5
06-6	Plastic resins and materials	289.2	295.9	297.5	296.8	290.5	293.2	294.2	296.1	287.3	r285.5	286.1	285.4	281.9	280.6
06-7	Other chemicals and allied products	r254.2	254.8	257.3	257.4	256.9	259.9	260.0	263.8	264.9	r268.5	269.0	275.9	273.0	270.7
07	Rubber and plastic products	r232.6	232.1	234.1	235.7	237.3	238.0	238.3	237.3	239.3	r240.8	241.9	242.9	243.3	243.1
07-1	Rubber and rubber products	r256.2	254.7	256.9	260.3	262.9	264.4	264.6	262.5	266.0	r266.7	268.7	271.2	271.5	271.6
07-11	Crude rubber	r281.8	284.2	284.7	283.1	279.8	279.0	280.8	281.8	282.1	r283.5	283.2	283.6	282.4	280.2
07-12	Tires and tubes	r250.6	246.8	249.9	256.5	257.1	255.9	255.4	253.6	256.7	r253.7	254.4	255.0	255.3	255.6
07-13	Miscellaneous rubber products	r251.4	251.4	253.1	253.9	261.1	266.7	267.2	263.8	268.8	r274.3	278.8	284.6	285.4	286.1
07-2	Plastic products (6/78 = 100)	r128.5	128.7	129.8	129.9	130.3	130.3	130.6	130.5	131.0	r132.3	132.4	132.3	132.6	132.3
08	Lumber and wood products	292.8	296.5	294.5	289.3	284.3	282.1	285.4	285.5	285.2	r285.3	286.1	283.9	288.7	288.3
08-1	Lumber	r325.1	332.4	329.9	320.2	311.7	306.6	309.9	310.0	308.1	r308.2	311.5	309.2	315.2	319.2
08-2	Millwork	273.4	273.6	272.3	271.4	271.3	271.8	273.7	277.1	278.6	r276.5	276.4	275.8	280.1	281.8
08-3	Plywood	245.7	247.8	245.6	240.8	234.3	233.5	239.7	237.4	235.1	r236.5	234.1	230.6	238.9	232.4
08-4	Other wood products	r239.1	240.7	239.8	240.5	239.9	239.3	239.4	238.2	238.7	r238.6	237.7	237.3	237.1	236.0

See footnotes at end of table.

22. Continued—Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981 July	1981 Aug.	1981 Sept.	1981 Oct.	1981 Nov.	1981 Dec.	1982 Jan.	1982 Feb.	1982 Mar.[1]	1982 Apr.	1982 May	1982 June	1982 July
	INDUSTRIAL COMMODITIES—Continued														
09	Pulp, paper, and allied products	r273.8	274.9	275.9	277.8	279.2	280.4	281.0	285.5	286.3	r287.4	287.9	289.1	289.3	288.9
09-1	Pulp, paper, and products, excluding building paper and board	r270.8	272.3	273.7	274.8	275.7	275.8	275.6	276.1	276.8	r276.6	276.4	275.4	274.6	272.9
09-11	Woodpulp	r397.1	394.2	394.2	394.2	402.3	413.7	413.7	410.3	410.3	r411.6	392.3	388.2	380.3	370.5
09-12	Wastepaper	175.7	182.1	182.1	179.5	165.1	144.5	143.4	135.2	128.8	129.2	128.1	121.5	115.2	115.6
09-13	Paper	r279.8	279.7	282.1	285.9	287.8	287.4	287.2	289.2	289.8	r289.6	291.7	288.8	288.2	287.0
09-14	Paperboard	r258.1	259.4	260.8	261.6	261.7	261.6	260.0	258.7	261.4	261.1	261.2	258.8	255.9	255.0
09-15	Converted paper and paperboard products	r258.8	261.2	262.4	262.8	263.2	263.1	263.2	263.9	264.7	r264.5	265.0	264.7	265.0	264.6
09-2	Building paper and board	r231.7	235.5	234.2	234.2	233.3	232.1	230.3	233.8	231.4	r238.6	235.5	239.5	239.4	239.2
10	Metals and metal products	300.4	302.0	304.1	304.9	305.3	304.2	303.3	304.7	304.2	r302.9	303.8	303.4	300.1	300.2
10-1	Iron and steel	333.8	338.8	339.9	339.8	341.3	340.0	339.9	343.1	342.9	r342.5	342.6	341.2	338.3	337.4
10-17	Steel mill products	337.6	344.9	344.9	345.3	348.7	348.6	348.9	350.6	350.3	350.5	352.2	352.1	348.9	349.1
10-2	Nonferrous metals	r285.8	282.8	287.3	289.4	285.4	281.1	277.1	274.4	273.6	r267.2	266.1	263.5	253.7	256.1
10-3	Metal containers	r315.6	315.2	318.7	318.8	318.2	318.1	316.8	324.3	326.2	r327.2	329.7	330.1	330.2	329.9
10-4	Hardware	r263.2	263.8	265.3	267.8	269.5	271.5	272.0	274.1	274.8	r278.2	276.2	276.7	277.9	278.9
10-5	Plumbing fixtures and brass fittings	r267.5	270.9	271.2	271.6	272.9	273.1	274.0	274.6	276.4	r279.1	280.3	281.0	282.5	283.0
10-6	Heating equipment	r224.2	226.4	227.9	228.5	229.0	228.8	229.9	233.4	233.1	r235.4	235.8	237.3	238.6	239.1
10-7	Fabricated structural metal products	r295.5	297.9	299.3	300.0	302.6	303.2	303.0	303.4	304.0	304.5	305.0	304.8	305.2	303.8
10-8	Miscellaneous metal products	r270.5	272.0	272.9	273.7	276.1	278.0	278.3	281.2	278.7	r279.0	285.3	290.0	290.5	288.8
11	Machinery and equipment	r263.3	264.8	266.2	268.1	269.3	270.4	272.0	274.1	275.4	r276.2	277.3	278.1	278.4	279.4
11-1	Agricultural machinery and equipment	r288.3	288.1	290.3	292.8	295.5	300.8	302.8	303.1	304.6	r306.4	306.1	307.0	308.8	310.2
11-2	Construction machinery and equipment	320.8	323.8	325.0	326.5	328.3	329.8	332.0	337.0	337.9	r339.2	341.4	343.4	343.7	346.1
11-3	Metalworking machinery and equipment	r301.3	302.9	303.5	305.3	306.8	307.9	312.9	315.9	317.2	r317.8	318.7	320.3	320.8	321.9
11-4	General purpose machinery and equipment	r288.7	290.6	292.3	293.9	295.1	296.2	297.9	300.0	301.3	r302.0	302.9	303.3	303.1	304.4
11-6	Special industry machinery and equipment	r307.9	311.0	310.3	312.8	314.6	315.0	316.4	320.4	320.7	r321.3	323.1	324.1	324.7	327.1
11-7	Electrical machinery and equipment	r220.2	221.1	222.8	224.2	225.3	226.0	227.0	228.7	229.5	r230.3	231.6	231.7	231.9	232.0
11-9	Miscellaneous machinery	r252.6	254.0	256.0	258.5	259.0	259.8	260.4	261.4	264.0	r264.9	265.4	267.2	268.0	268.9
12	Furniture and household durables	r198.5	199.5	199.6	201.0	201.3	202.1	202.9	203.5	204.6	r205.5	205.6	206.1	206.6	206.8
12-1	Household furniture	r219.7	220.0	220.7	222.2	222.8	225.1	226.6	227.5	227.4	r227.6	230.6	230.9	231.1	230.9
12-2	Commercial furniture	r257.5	258.7	259.1	261.6	262.1	263.3	263.9	268.7	271.2	r273.6	274.5	275.5	276.2	277.8
12-3	Floor coverings	r178.7	182.8	181.9	181.7	180.9	182.3	181.4	180.3	180.6	r180.6	180.3	180.5	180.7	180.1
12-4	Household appliances	r187.3	188.6	189.1	190.1	190.8	190.9	191.3	193.4	195.3	r197.3	196.3	197.8	198.5	199.3
12-5	Home electronic equipment	r89.2	87.4	87.6	87.8	88.1	88.0	88.6	88.3	88.6	r89.1	88.2	88.1	88.2	88.2
12-6	Other household durable goods	r281.0	282.1	280.9	285.8	285.8	285.3	286.2	283.4	283.7	r285.0	283.5	283.1	284.6	283.6
13	Nonmetallic mineral products	309.5	314.3	314.1	313.2	313.3	313.7	313.5	315.6	319.0	r319.9	320.0	319.1	318.7	320.3
13-11	Flat glass	r212.6	218.3	218.3	218.3	218.5	218.5	218.1	216.2	216.2	216.2	216.2	216.2	216.2	226.1
13-2	Concrete ingredients	296.3	297.7	298.0	298.5	298.4	298.5	298.7	306.2	308.4	r309.8	309.2	310.7	310.9	310.6
13-3	Concrete products	291.2	293.4	293.4	292.9	293.3	293.4	293.6	295.5	295.9	r296.3	297.3	297.1	297.9	298.2
13-4	Structural clay products, excluding refractories	r249.6	250.9	250.9	255.3	256.2	256.5	257.5	257.5	257.7	r257.7	260.7	258.1	258.4	258.8
13-5	Refractories	r302.4	307.1	307.1	307.1	307.8	308.9	311.3	318.8	335.1	r337.4	339.7	[illegible]	340.9	340.9
13-6	Asphalt roofing	r407.5	421.9	420.9	401.6	402.9	410.2	405.6	401.3	400.4	r394.4	385.2	384.0	388.8	392.3
13-7	Gypsum products	256.2	259.7	255.3	252.9	252.4	251.3	249.7	250.4	255.0	260.7	262.8	259.4	258.4	255.8
13-8	Glass containers	r328.7	335.5	335.5	335.5	335.5	335.5	335.5	335.4	352.2	r356.0	357.4	357.4	357.4	357.4
13-9	Other nonmetallic minerals	r463.8	476.2	475.3	474.3	473.3	473.5	474.7	474.7	478.7	r479.6	478.8	472.1	465.2	466.4
14	Transportation equipment (12/68 = 100)	235.4	235.0	235.9	231.8	244.5	248.3	248.8	248.6	245.2	r245.2	245.6	247.2	249.6	250.4
14-1	Motor vehicles and equipment	r237.6	237.4	238.4	232.8	247.8	248.9	249.5	250.8	248.8	r248.8	248.6	248.7	251.5	252.5
14-4	Railroad equipment	r336.1	338.1	338.7	338.7	338.7	341.3	340.1	345.8	345.8	r348.3	353.9	349.6	349.6	349.3
15	Miscellaneous products	r265.7	263.2	262.6	267.0	268.5	269.5	267.6	268.3	273.5	r272.7	273.3	272.3	271.6	273.8
15-1	Toys, sporting goods, small arms, ammunition	r211.9	213.2	212.7	213.6	213.0	212.7	213.3	218.4	220.1	r220.7	221.9	222.7	222.9	222.9
15-2	Tobacco products	268.3	268.8	268.8	274.5	278.2	278.2	278.2	278.2	306.6	r306.6	306.5	306.7	306.7	311.3
15-3	Notions	r259.8	267.5	267.7	267.8	269.7	269.7	269.7	270.3	270.4	r271.5	271.8	280.3	280.3	280.3
15-4	Photographic equipment and supplies	r210.0	211.4	207.1	208.7	208.9	209.0	209.1	209.9	210.5	r212.1	214.6	210.9	210.8	210.6
15-5	Mobile homes (12/74 = 100)	156.8	158.1	158.3	158.7	159.1	159.3	159.3	159.5	159.6	r161.9	162.0	162.1	162.5	162.5
15-9	Other miscellaneous products	r347.4	333.1	334.6	345.5	348.5	344.8	344.6	342.2	341.1	r334.5	333.5	330.8	329.0	333.1

[1] Data for March 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Prices for natural gas are lagged 1 month.

[3] Includes only domestic production.

[4] Most prices for refined petroleum products are lagged 1 month.

[5] Some prices for industrial chemicals are lagged 1 month.

r=revised.

23. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1981	1981						1982						
		July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.[1]	Apr.	May	June	July
All commodities — less farm products	295.7	298.0	298.7	298.5	299.5	299.4	300.0	302.0	301.9	301.4	300.9	301.1	302.3	304.1
All foods	r251.8	255.2	253.7	251.7	249.1	247.4	247.6	251.6	253.2	r251.6	254.4	257.9	259.0	258.8
Processed foods	r252.1	256.0	255.0	252.8	250.0	247.8	248.5	250.5	251.9	252.1	254.9	259.0	260.9	259.8
Industrial commodities less fuels	263.7	265.0	266.1	266.4	268.7	269.0	269.4	271.1	271.5	r271.7	272.2	272.8	272.5	272.7
Selected textile mill products (Dec. 1975 = 100)	r135.8	136.8	137.2	138.1	138.2	138.4	137.9	139.3	139.7	139.0	138.9	138.9	138.1	137.5
Hosiery	134.3	135.8	135.3	135.5	136.5	136.5	136.7	136.9	136.6	137.5	138.1	138.5	138.5	138.5
Underwear and nightwear	r203.4	204.7	204.7	204.7	204.7	205.7	208.3	213.9	215.6	r215.9	216.4	216.3	217.8	218.0
Chemicals and allied products, including synthetic rubber and fibers and yarns	r278.4	282.3	284.0	284.4	283.8	283.2	283.1	284.3	285.1	r285.6	285.7	287.3	284.8	283.0
Pharmaceutical preparations	r186.9	189.0	188.4	191.6	192.8	192.5	193.3	196.6	199.3	r201.1	204.4	205.3	205.3	205.7
Lumber and wood products, excluding millwork	r303.0	308.7	306.2	298.0	290.1	286.4	290.7	288.9	287.9	r288.5	288.9	287.2	294.0	294.6
Steel mill products, including fabricated wire products	337.6	344.9	344.9	345.3	348.7	348.6	348.9	350.6	350.3	350.5	352.2	352.1	349.9	348.7
Finished steel mill products, excluding fabricated wire products	336.2	343.3	343.3	343.7	347.4	347.2	347.5	349.3	348.9	349.2	351.0	350.9	348.6	347.7
Finished steel mill products, including fabricated wire products	336.2	343.3	343.3	343.7	347.4	347.2	347.5	349.3	348.8	349.2	351.0	350.9	348.6	347.4
Special metals and metal products	279.4	280.2	281.9	280.1	286.7	286.8	286.6	287.9	288.0	285.3	285.7	286.4	285.8	286.3
Fabricated metal products	280.0	281.7	283.1	283.9	286.0	287.0	287.1	289.4	289.0	r289.9	292.5	294.3	294.6	294.0
Copper and copper products	r203.8	202.5	206.2	205.1	201.9	198.9	195.4	194.5	194.1	r190.8	190.5	191.6	190.0	179.5
Machinery and motive products	256.7	257.4	258.6	257.7	264.3	265.8	266.9	268.9	268.1	r268.5	269.3	270.5	271.8	272.8
Machinery and equipment, except electrical	r288.5	290.4	291.7	293.8	295.0	296.4	298.4	300.7	302.3	r303.1	304.1	305.2	305.7	307.2
Agricultural machinery, including tractors	r297.3	295.6	298.2	301.6	305.7	312.5	314.7	315.1	316.0	r318.4	317.7	318.2	319.8	320.5
Metalworking machinery	r329.7	330.1	331.4	333.9	336.7	338.3	341.2	343.8	344.9	346.4	348.8	349.4	350.3	352.7
Numerically controlled machine tools (Dec. 1971 = 100)	r239.3	241.7	241.8	241.8	241.8	242.2	242.0	240.1	238.8	r239.9	240.2	240.3	240.3	239.6
Total tractors	r324.7	325.5	327.8	330.7	338.3	342.2	342.3	346.9	346.9	r349.1	351.7	352.4	353.2	354.2
Agricultural machinery and equipment less parts	r289.8	288.6	291.1	294.0	297.6	303.5	305.8	306.5	307.4	r309.7	309.2	309.6	311.0	311.8
Farm and garden tractors less parts	r300.1	298.0	301.4	305.5	313.0	319.6	319.7	319.7	319.7	r323.5	322.3	322.9	324.3	324.2
Agricultural machinery, excluding tractors less parts	r295.2	293.9	295.8	298.7	299.9	303.5	310.9	311.6	313.2	r314.6	314.3	314.7	316.5	317.7
Industrial valves	r315.9	317.5	319.8	322.7	322.4	323.4	325.3	328.6	330.2	r330.5	327.7	327.9	327.2	329.2
Industrial fittings	302.1	303.0	303.0	304.3	304.1	304.1	304.1	304.1	304.1	304.1	309.1	309.1	309.1	310.2
Construction materials	283.0	285.7	285.5	284.4	284.6	284.1	285.2	286.6	286.9	r287.5	288.1	287.9	288.1	289.0

[1] Data for March 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

24. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1981	1981						1982						
		July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.[1]	Apr.	May	June	July
Total durable goods	269.8	270.8	271.9	271.8	275.0	275.4	276.0	277.6	277.4	r277.4	278.1	278.4	278.4	279.1
Total nondurable goods	312.4	316.8	316.2	315.0	312.8	311.4	311.4	314.7	315.4	314.2	313.5	314.5	316.0	317.7
Total manufactures	r286.0	288.0	288.6	288.3	290.8	289.7	289.9	291.9	292.0	r291.4	290.9	291.3	292.4	293.9
Durable	269.7	270.6	271.7	271.7	275.1	275.8	276.5	278.0	277.8	277.8	278.7	279.1	279.4	280.1
Nondurable	303.6	306.9	306.9	306.3	305.5	304.5	304.3	306.8	307.2	r305.8	303.9	304.1	306.2	308.6
Total raw or slightly processed goods	330.7	337.9	335.8	332.7	326.4	323.3	323.6	328.9	330.6	r329.7	332.2	334.9	333.6	333.3
Durable	r271.2	271.2	275.9	270.4	263.7	253.4	247.8	253.8	253.7	r250.1	245.9	239.4	225.2	225.0
Nondurable	334.0	341.8	339.1	336.3	330.0	327.4	328.2	333.4	336.2	r334.5	337.5	340.8	340.6	340.2

[1] Data for March 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

25. Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981						1982						
			July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.[1]	Apr.	May	June	July
	MINING														
1011	Iron ores (12/75 = 100)	r167.6	168.1	168.1	168.1	168.1	171.3	171.3	171.3	171.3	171.3	171.3	177.1	177.1	177.1
1092	Mercury ores (12/75 = 100)	346.0	358.3	365.4	364.5	354.1	354.1	343.7	347.9	313.7	325.0	327.0	308.3	307.5	306.2
1211	Bituminous coal and lignite	r493.7	502.1	503.4	506.0	506.2	507.8	510.3	520.9	525.8	r524.9	527.2	529.4	529.8	533.5
1311	Crude petroleum and natural gas	r898.6	911.5	900.3	913.6	900.8	907.5	921.7	918.7	913.9	r905.4	894.9	902.0	915.1	925.3
1442	Construction sand and gravel	r277.4	278.4	278.2	279.2	279.7	279.8	280.7	287.4	289.9	r293.1	292.2	294.4	295.2	295.3
1455	Kaolin and ball clay (6/76 = 100)	138.7	137.1	137.1	137.1	143.4	143.4	143.4	149.6	149.6	149.6	151.7	151.7	151.7	151.7
	MANUFACTURING														
2011	Meatpacking plants	243.1	252.6	250.9	252.7	244.1	237.0	234.1	237.6	244.4	r247.3	253.3	264.3	265.7	258.4
2013	Sausages and other prepared meats	r241.4	246.0	254.0	253.9	252.2	248.9	247.0	245.6	251.0	r248.6	253.4	265.9	273.7	272.2
2016	Poultry dressing plants	192.0	203.6	201.2	188.8	175.5	172.8	166.7	(2)	(2)	(2)	(2)	(2)	(2)	(2)
2021	Creamery butter	274.8	273.8	273.7	275.0	279.2	279.5	275.0	275.0	276.4	276.8	275.3	274.9	274.9	275.0

See footnotes at end of table.

25. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981						1982						
			July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.[1]	Apr.	May	June	July
	MANUFACTURING—Continued														
2022	Cheese, natural and processed (12/72 = 100)	r215.7	213.8	214.5	215.0	215.4	215.9	218.4	218.6	217.9	r216.7	216.8	217.1	217.9	218.6
2024	Ice cream and frozen desserts (12/72 = 100)	211.9	212.7	212.7	212.7	212.5	212.5	212.7	212.8	212.8	210.9	214.2	214.2	214.2	213.6
2033	Canned fruits and vegetables	248.5	251.6	252.9	254.3	257.0	256.4	258.9	260.8	262.6	r262.4	261.5	262.3	264.6	265.5
2034	Dehydrated food products (12/73 = 100)	177.6	180.5	178.7	183.4	182.1	181.4	182.1	184.0	181.8	181.5	181.5	178.5	178.5	180.4
2041	Flour mills (12/71 = 100)	r196.0	196.5	191.0	195.3	191.1	191.5	189.2	191.5	187.5	187.3	192.5	188.4	189.1	185.5
2044	Rice milling	277.2	297.4	284.3	268.2	247.3	235.4	215.1	205.9	192.2	183.5	177.9	183.0	180.3	177.6
2048	Prepared foods, n.e.c. (12/75 = 100)	r124.5	125.9	124.8	119.6	117.3	116.4	116.0	116.0	115.9	r114.6	115.4	116.7	115.7	115.4
2061	Raw cane sugar	273.5	272.2	254.6	212.3	219.9	224.3	230.8	247.6	245.1	233.0	242.9	269.2	286.7	311.5
2063	Beet sugar	r314.3	274.1	267.5	270.7	250.3	230.4	250.5	266.4	272.2	r272.2	272.6	280.2	280.2	290.5
2067	Chewing gum	309.8	303.1	303.2	303.2	303.2	303.2	303.2	303.3	303.3	r303.3	303.4	303.4	303.4	303.3
2074	Cottonseed oil mills	199.0	212.0	206.0	182.3	172.0	167.2	182.4	184.9	170.5	r158.1	164.6	167.9	170.2	174.6
2075	Soybean oil mills	245.8	253.7	245.8	234.2	229.7	221.2	221.9	223.1	220.4	r216.6	225.0	232.0	226.4	224.1
2077	Animal and marine fats and oils	r288.0	288.6	294.1	281.2	274.0	272.3	266.6	260.4	262.6	271.8	273.3	271.5	272.3	264.3
2083	Malt	282.5	286.1	286.1	275.4	275.4	275.4	275.4	267.1	267.1	267.1	259.1	259.8	259.8	259.8
2085	Distilled liquor, except brandy (12/75 = 100)	134.7	134.6	135.5	135.5	135.5	137.9	137.9	140.1	137.9	140.2	140.2	139.8	139.8	139.8
2091	Canned and cured seafoods (12/73 = 100)	187.8	187.4	188.4	188.8	188.2	188.3	188.5	187.2	187.0	187.7	188.2	188.0	188.4	187.8
2092	Fresh or frozen packaged fish	r369.1	367.6	347.1	353.5	356.9	360.8	369.5	396.8	389.2	r419.1	433.8	427.5	442.8	418.9
2095	Roasted coffee (12/72 = 100)	r238.1	236.4	235.7	237.3	238.2	239.2	240.4	245.1	247.7	r248.8	250.7	247.9	247.6	247.0
2098	Macaroni and spaghetti	252.0	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5
2111	Cigarettes	277.7	278.3	278.3	284.2	288.4	288.4	288.4	288.4	319.7	319.7	319.7	319.8	319.8	324.9
2121	Cigars	r170.0	169.7	169.7	174.5	174.5	174.5	174.5	174.5	178.6	r178.6	176.8	176.6	176.6	176.6
2131	Chewing and smoking tobacco	r320.7	321.0	321.3	325.3	326.1	326.1	326.1	326.1	349.4	349.4	349.4	353.6	353.6	358.3
2211	Weaving mills, cotton (12/72 = 100)	r232.7	234.7	237.4	236.0	233.2	229.8	227.6	227.3	227.1	r226.4	226.1	227.7	226.0	222.0
2221	Weaving mills, synthetic (12/77 = 100)	r136.7	138.0	139.3	139.5	139.4	139.8	139.5	139.8	139.7	r140.0	139.2	138.9	138.0	137.5
2251	Women's hosiery, except socks (12/75 = 100)	113.5	115.5	115.0	115.0	115.2	115.1	115.2	115.6	115.6	r116.1	116.3	117.0	117.0	117.0
2254	Knit underwear mills	210.2	210.7	210.8	210.9	210.9	212.8	213.0	225.2	225.2	r225.9	235.6	226.0	228.7	230.8
2257	Circular knit fabric mills (6/76 = 100)	r110.9	111.0	112.0	111.9	112.0	112.4	111.8	112.4	113.2	r110.7	110.1	109.7	108.2	108.6
2261	Finishing plants, cotton (6/76 = 100)	144.9	146.3	146.2	145.4	144.9	143.5	141.4	140.5	140.3	140.8	141.6	141.4	141.3	140.2
2262	Finishing plants, synthetics, silk (6/76 = 100)	126.5	127.1	127.8	129.0	129.1	129.1	128.6	129.4	129.9	r128.5	128.1	128.2	127.2	126.7
2272	Tufted carpets and rugs	r154.2	158.3	157.4	157.3	155.7	157.0	156.7	155.5	155.7	155.7	156.1	156.4	156.9	156.1
2281	Yarn mills, except wool (12/71= 100)	r221.7	225.1	225.4	223.8	222.4	219.9	217.2	216.3	215.7	r215.4	214.6	214.9	214.0	213.7
2282	Throwing and winding mills (6/76 = 100)	r139.3	142.7	146.8	148.0	154.5	145.6	146.0	145.7	150.3	r150.0	150.9	152.6	149.3	149.0
2284	Thread mills (6/76 = 100)	151.4	151.1	151.1	154.8	157.0	157.0	156.8	156.8	156.8	156.8	156.7	156.6	156.5	156.5
2298	Cordage and twine (12/77 = 100)	134.8	134.3	134.3	139.3	139.3	139.3	140.7	141.0	141.0	141.0	141.0	141.0	141.0	141.0
2311	Men's and boys' suits and coats	r224.0	225.9	226.2	226.5	227.4	228.4	230.5	233.7	233.6	r233.8	234.3	234.6	235.3	237.2
2321	Men's and boys' shirts and nightwear	r209.5	210.5	210.6	211.5	212.4	212.6	213.4	173.4	215.9	r216.9	193.1	173.6	215.7	216.0
2322	Men's and boys' underwear	230.6	230.8	230.8	230.8	230.8	233.0	233.0	246.9	246.9	247.4	247.4	247.4	251.2	251.2
2323	Men's and boys' neckwear (12/75 = 100)	114.6	113.9	113.9	113.9	113.9	113.9	113.9	115.3	117.3	117.3	117.3	117.3	121.3	121.3
2327	Men's and boys' separate trousers	r186.2	186.4	186.4	186.4	186.8	186.9	187.1	188.4	188.4	r188.4	190.0	194.9	195.0	195.6
2328	Men's and boys' work clothing	r248.6	250.8	251.1	251.2	253.1	253.2	253.3	252.5	254.2	r254.9	253.8	253.7	254.1	252.9
2331	Women's and misses' blouses and waists (6/78 = 100)	r120.6	121.0	121.2	121.3	126.4	126.7	126.7	126.5	126.5	r126.5	123.8	123.7	123.7	123.6
2335	Women's and misses' dresses (12/77 = 100)	r121.3	123.0	124.3	123.5	123.4	124.1	122.7	123.0	123.0	r123.1	122.9	122.9	123.1	123.7
2341	Women's and children's underwear (12/72 = 100)	r169.7	170.6	170.6	170.6	170.6	171.6	171.6	174.7	174.8	r175.0	175.7	177.2	179.4	179.4
2342	Brassieres and allied garments (12/75 = 100)	r136.7	138.8	138.8	138.8	138.8	138.9	140.1	145.1	148.8	r148.8	149.2	148.5	148.5	148.4
2361	Children's dresses and blouses (12/77 = 100)	r120.9	121.6	121.7	121.7	122.0	122.5	123.2	123.2	123.2	r123.2	121.0	121.0	121.0	118.4
2381	Fabric dress and work gloves	289.3	289.2	289.2	289.2	289.2	289.2	289.2	293.8	297.4	295.5	295.5	295.5	294.5	294.5
2394	Canvas and related products (12/77 = 100)	r132.0	130.1	133.1	134.6	137.6	137.6	139.7	144.9	144.9	r147.2	146.3	146.5	143.8	143.8
2396	Automotive and apparel trimmings (12/77 = 100)	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
2421	Sawmills and planing mills (12/71 = 100)	228.2	233.5	231.2	225.2	219.5	216.5	218.6	218.0	216.9	r216.9	218.4	216.8	219.7	221.6
2436	Softwood veneer and plywood (12/75 = 100)	142.0	143.8	139.6	135.4	129.3	129.0	134.5	132.5	130.5	r131.8	129.2	126.0	133.3	129.6
2439	Structural wood members, n.e.c. (12/75 = 100)	156.6	157.6	156.9	156.6	154.8	154.2	153.2	153.9	153.5	r152.6	152.9	151.5	152.9	154.5
2448	Wood pallets and skids (12/75 = 100)	152.5	153.1	152.9	152.8	152.0	150.4	149.9	149.8	149.0	r148.2	145.8	144.6	144.2	144.1
2451	Mobile homes (12/74 = 100)	r156.9	158.1	158.3	158.7	159.2	159.3	160.3	160.4	160.5	162.7	162.9	163.1	163.4	163.4
2492	Particleboard (12/75 = 100)	r173.6	179.6	173.6	170.5	168.0	166.9	170.3	172.6	170.7	r177.7	176.8	176.7	176.9	175.4
2511	Wood household furniture (12/71 = 100)	197.4	198.6	199.2	200.1	201.0	202.0	202.8	203.6	204.3	r206.1	207.0	207.3	207.6	208.1
2512	Upholstered household furniture (12/71 = 100)	r174.0	175.1	175.1	175.3	175.6	179.5	182.1	184.4	179.3	r179.3	184.6	185.1	185.1	184.1
2515	Mattresses and bedsprings	r192.3	191.3	194.6	195.2	195.2	197.5	198.0	204.4	205.6	r205.6	210.1	210.3	210.3	210.1
2521	Wood office furniture	r254.2	254.7	254.7	257.1	257.1	257.0	257.6	261.9	270.7	r270.8	271.9	271.9	271.9	272.0
2611	Pulp mills (12/73 = 100)	r252.4	251.3	251.3	251.3	255.0	262.5	262.5	258.6	258.6	r260.7	255.8	254.8	246.5	238.5
2621	Paper mills, except building (12/74 = 100)	r158.2	157.0	157.4	158.8	159.8	159.7	159.6	162.0	162.0	r162.0	161.8	160.5	160.8	160.7
2631	Paperboard mills (12/74 = 100)	r151.7	151.7	152.4	153.7	153.6	153.5	152.7	152.5	153.4	r153.0	153.0	151.5	150.0	149.1
2647	Sanitary paper products	r343.4	344.2	344.3	344.3	344.0	344.1	344.6	344.6	344.6	r344.5	345.5	344.7	347.3	348.4
2654	Sanitary food containers	r244.8	246.0	252.9	253.2	253.4	253.3	253.3	254.0	256.9	r260.0	261.4	261.4	261.4	261.4
2655	Fiber cans, drums, and similar products (12/75 = 100)	163.0	163.2	163.2	163.2	167.6	167.6	170.0	176.4	176.5	176.5	176.5	176.7	176.7	176.7
2812	Alkalies and chlorine (12/73 = 100)	r305.9	306.2	310.4	318.0	317.7	317.0	324.8	329.4	335.2	r335.6	322.1	338.2	338.2	324.4
2821	Plastics materials and resins (6/76 = 100)	150.8	155.0	155.6	156.0	156.3	153.7	154.3	150.7	152.6	r151.0	151.2	151.9	150.7	150.2
2822	Synthetic rubber	r293.3	297.3	299.4	299.3	301.0	301.4	302.7	303.9	306.1	r306.7	306.6	307.1	303.8	301.8
2824	Organic fiber, noncellulosic	r156.6	159.2	160.3	160.6	164.2	162.5	161.9	161.8	162.9	r161.6	161.7	161.7	161.3	160.5
2873	Nitrogenous fertilizers (12/75 = 100)	r142.8	143.5	143.9	142.1	142.9	144.2	142.9	142.4	142.6	142.2	142.7	141.1	139.5	136.1
2874	Phosphatic fertilizers	254.1	249.4	260.0	259.4	259.4	258.5	259.0	261.0	263.5	r261.6	258.5	256.2	257.6	256.6
2875	Fertilizers, mixing only	r270.7	275.3	273.0	272.0	273.8	273.7	270.5	274.3	276.8	r278.4	278.4	278.5	278.8	278.6
2892	Explosives	r311.9	315.7	319.8	318.5	318.7	318.5	315.6	314.9	317.6	r320.5	322.2	321.4	319.6	318.4
2911	Petroleum refining (6/76 = 100)	294.4	299.1	297.5	295.8	294.6	293.3	293.1	293.0	289.1	r281.7	267.5	259.2	267.7	281.4
2951	Paving mixtures and blocks (12/75 = 100)	194.3	197.1	196.3	196.0	196.3	196.4	196.0	197.0	196.0	r198.1	197.1	196.6	195.1	194.8
2952	Asphalt felts and coatings (12/75 = 100)	r176.9	182.8	182.3	174.3	174.9	176.1	176.1	174.2	173.8	r171.2	167.4	167.7	169.8	171.3
3011	Tires and inner tubes (12/73 = 100)	r215.8	213.1	215.5	220.6	221.0	220.1	221.2	222.0	222.4	r220.3	220.9	221.2	221.5	221.7

25. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981						1982						
			July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.[1]	Apr.	May	June	July
3021	Rubber and plastic footwear (12/71 = 100)	184.4	185.0	185.4	185.3	185.0	185.0	185.2	186.1	188.4	188.1	189.0	186.7	187.0	187.0
3031	Reclaimed rubber (12/73 =100)	r194.1	192.9	200.3	200.3	200.3	200.3	200.3	200.3	200.4	r207.2	206.9	207.2	208.4	207.7
3079	Miscellaneous plastic products (6/78 = 100)	r128.9	129.2	130.2	130.3	130.8	130.8	131.0	131.1	131.8	r132.8	132.9	132.7	132.9	132.8
3111	Leather tanning and finishing (12/77 = 100)	r150.7	151.3	148.5	148.3	148.2	146.8	147.5	150.8	149.3	r147.9	147.5	147.3	146.9	147.5
3143	Men's footwear, except athletic (12/75 = 100)	r169.3	170.7	171.4	170.9	170.5	170.6	171.3	173.1	172.2	r173.5	174.9	175.1	175.2	171.6
3144	Women's footwear, except athletic	r217.1	218.9	217.8	218.2	212.5	212.7	212.4	208.5	209.8	r210.3	215.6	213.4	215.2	216.3
3171	Women's handbags and purses (12/75 = 100)	155.5	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.5
3211	Flat glass (12/71 = 100)	r175.3	180.0	180.0	180.0	180.1	180.1	177.4	177.5	177.5	177.5	177.5	177.5	177.5	187.7
3221	Glass containers	r328.6	335.4	335.4	335.4	335.4	335.4	335.4	335.3	352.1	r355.8	357.3	357.3	357.3	357.3
3241	Cement, hydraulic	r329.6	331.6	331.6	332.0	330.3	330.3	330.3	339.6	341.5	r341.5	337.9	338.6	338.7	337.8
3251	Brick and structural clay tile	r296.5	298.9	298.9	299.9	299.9	300.5	300.5	298.9	299.4	r299.4	295.9	305.8	306.4	307.2
3253	Ceramic wall and floor tile (12/75 = 100)	r133.4	132.1	132.1	140.4	140.4	140.4	140.4	140.4	140.4	r140.4	137.1	138.0	138.0	138.0
3255	Clay refractories	r310.2	312.3	312.3	312.5	313.9	315.2	319.9	329.6	354.4	r355.6	357.0	357.2	357.1	357.2
3259	Structural clay products, n.e.c.	r222.6	223.9	223.9	227.5	231.7	231.7	236.6	225.6	226.0	r225.9	202.4	216.4	216.5	216.4
3261	Vitreous plumbing fixtures	254.9	258.7	259.6	259.0	259.0	259.3	260.1	261.1	260.6	r260.8	261.9	265.4	265.5	264.2
3262	Vitreous china food utensils	335.0	336.6	336.6	336.8	336.8	344.7	344.7	347.7	347.7	347.3	336.2	345.2	349.8	349.8
3263	Fine earthenware food utensils	r309.1	309.6	309.6	313.8	313.8	315.0	315.0	315.1	315.1	r315.0	312.8	314.1	314.8	314.8
3269	Pottery products, n.e.c. (12/75 = 100)	160.1	160.7	160.7	161.8	161.8	163.7	163.7	164.3	164.3	r164.2	161.4	163.6	164.8	164.7
3271	Concrete block and brick	270.4	271.2	274.0	274.2	274.3	274.2	275.1	274.9	276.4	r276.4	276.4	276.6	277.0	277.1
3273	Ready-mixed concrete	298.7	300.7	300.0	299.2	299.5	298.4	298.6	301.9	301.9	r302.5	303.3	303.9	304.7	305.4
3274	Lime (12/75 = 100)	172.5	173.1	173.9	173.7	173.7	173.5	173.8	178.8	183.7	r185.7	186.6	188.1	188.4	188.1
3275	Gypsum products	r256.9	261.8	258.9	252.9	251.5	252.5	250.6	250.9	253.9	260.5	262.2	258.8	256.2	256.5
3291	Abrasive products (12/71 = 100)	r232.9	235.0	235.1	237.3	237.6	241.0	241.0	241.3	248.3	r249.8	248.9	251.2	252.1	252.0
3297	Nonclay refractories (12/74 = 100)	185.3	189.7	189.7	189.7	189.7	190.2	190.3	191.2	198.3	r200.4	202.4	203.2	203.9	203.8
3312	Blast furnaces and steel mills	342.8	350.1	350.0	350.3	353.1	353.0	353.3	354.7	354.4	r354.4	356.1	355.9	353.6	352.9
3313	Electrometallurgical products (12/75 = 100)	121.8	121.2	121.5	121.4	125.4	125.4	125.3	125.3	123.4	120.3	120.3	120.3	120.4	120.4
3316	Cold finishing of steel shapes	316.2	325.0	325.7	326.2	326.4	326.4	326.7	327.0	327.0	327.0	327.6	327.8	325.6	325.2
3317	Steel pipes and tubes	341.5	348.2	350.6	350.5	362.0	362.3	363.0	363.7	364.1	r365.8	365.8	365.8	365.7	364.0
3321	Gray iron foundries (12/68 = 100)	r299.7	298.8	299.9	302.0	303.3	305.2	306.1	307.9	310.0	r311.5	310.4	311.4	311.6	311.3
3333	Primary zinc	r326.3	335.4	353.8	355.9	337.0	337.5	315.7	308.6	311.2	r292.0	273.4	259.9	258.7	266.4
3334	Primary aluminum	r333.1	334.2	334.4	333.6	333.5	332.5	332.8	324.1	320.2	r320.8	316.5	313.8	308.4	305.7
3351	Copper rolling and drawing	r212.3	206.4	212.9	214.1	212.3	209.2	207.1	204.8	203.9	r198.4	196.6	197.5	189.8	189.2
3353	Aluminum sheet, plate, and foil (12/75 = 100)	r175.8	177.3	177.4	178.0	179.9	180.2	180.8	181.8	181.7	r181.2	180.1	178.7	178.0	178.2
3354	Aluminum extruded products (12/75 = 100)	180.1	181.2	181.3	181.2	181.3	181.4	181.1	180.8	180.8	180.5	179.9	180.2	180.1	179.5
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	159.1	157.2	157.2	157.7	163.0	166.2	166.1	166.1	166.5	r166.3	162.9	163.0	165.4	164.7
3411	Metal cans	r305.1	305.5	306.7	306.8	307.0	306.0	304.9	310.8	314.0	r313.6	319.6	320.4	319.3	318.6
3425	Hand saws and saw blades (12/72 = 100)	r201.4	204.1	204.2	204.6	204.8	206.0	206.0	211.6	214.8	r214.9	214.9	220.8	220.9	221.0
3431	Metal sanitary ware	r265.5	269.2	269.7	270.2	270.3	271.6	271.8	271.3	272.8	r275.1	275.8	275.7	276.0	276.1
3465	Automotive stampings (12/75 = 100)	r146.0	146.2	146.4	146.9	147.4	149.7	149.1	150.1	144.7	r144.2	152.7	153.0	153.0	153.0
3482	Small arms ammunition (12/75 = 100)	r159.0	157.8	159.9	159.9	159.9	159.9	163.9	167.5	167.5	r167.5	171.9	171.9	175.9	175.9
3493	Steel springs, except wire	r245.9	243.7	248.9	252.4	253.9	254.1	256.1	255.8	257.4	r256.4	256.0	255.3	255.2	253.1
3494	Valves and pipe fittings (12/71 = 100)	r248.9	250.0	251.0	252.7	252.9	253.5	255.7	257.7	258.9	r259.1	258.6	259.2	259.0	260.1
3498	Fabricated pipe and fittings	r361.3	364.6	370.0	375.1	377.7	378.6	379.3	378.6	377.7	r379.8	385.5	385.4	385.4	383.8
3519	Internal combustion engines, n.e.c.	r311.9	312.0	314.2	322.1	323.2	326.4	325.4	329.4	332.0	r332.6	332.6	337.0	337.7	339.6
3531	Construction machinery (12/76 = 100)	r156.8	158.0	159.5	160.1	161.0	161.6	159.7	162.5	162.4	r163.3	164.1	165.2	165.3	166.5
3532	Mining machinery (12/72 = 100)	r282.5	282.7	285.3	286.9	288.5	290.8	292.9	295.5	297.8	r300.9	301.4	302.7	303.5	304.0
3533	Oilfield machinery and equipment	r395.8	401.3	406.5	411.3	415.6	418.2	420.3	427.2	429.2	r435.8	436.2	435.8	437.8	438.4
3534	Elevators and moving stairways	r253.9	252.1	252.8	254.6	257.0	260.7	265.6	264.3	269.8	r271.6	270.8	271.6	273.5	275.5
3542	Machine tools, metal forming types (12/71 = 100)	r306.9	307.6	309.5	312.0	311.7	312.3	319.3	319.7	322.8	324.5	325.5	325.6	326.5	333.6
3546	Power driven hand tools (12/76 = 100)	r147.3	148.2	148.4	148.6	149.5	149.5	150.0	153.3	153.2	r153.9	154.0	156.1	156.4	157.4
3552	Textile machinery (12/69 = 100)	r243.5	246.2	245.4	248.2	248.0	247.9	249.9	252.3	253.5	r255.0	256.2	258.5	258.1	259.8
3553	Woodworking machinery (12/72 = 100)	r225.0	224.0	225.4	228.9	228.9	229.1	229.1	233.7	232.9	r233.4	235.0	234.7	234.4	230.0
3576	Scales and balances, excluding laboratory	226.2	226.6	226.6	226.1	226.2	226.3	226.5	228.3	228.8	229.8	229.6	229.5	230.6	231.9
3592	Carburetors, pistons, rings, valves (6/76 = 100)	r178.0	180.8	181.3	182.1	185.4	187.2	187.3	185.3	189.6	r190.4	192.6	195.2	195.7	196.6
3612	Transformers	r209.9	210.7	212.8	214.5	217.3	222.0	222.0	220.5	222.2	222.4	223.2	224.7	224.8	224.7
3623	Welding apparatus, electric (12/72 = 100)	r227.5	228.3	229.6	231.6	232.5	233.2	235.8	236.8	236.9	r232.3	232.9	232.9	233.1	236.9
3631	Household cooking equipment (12/75 = 100)	r141.2	140.5	141.5	141.6	141.6	141.9	142.6	146.0	146.8	r147.2	146.2	146.8	146.9	148.2
3632	Household refrigerators, freezers (6/76 = 100)	r132.8	135.5	135.5	136.4	137.8	137.9	137.9	140.1	141.1	r142.3	142.5	143.2	144.3	145.5
3633	Household laundry equipment (12/73 = 100)	r174.3	174.1	174.6	177.2	177.0	178.4	178.8	180.1	180.5	186.2	186.9	188.6	189.0	189.1
3635	Household vacuum cleaners	r159.1	158.6	158.8	158.8	161.3	161.0	160.8	165.6	165.2	r165.7	158.2	158.3	158.4	158.4
3636	Sewing machines (12/75 = 100)	r146.8	153.8	153.8	153.8	156.0	156.0	156.0	156.0	155.8	r155.8	153.7	153.7	153.7	153.7
3641	Electric lamps	r277.3	275.2	280.0	283.1	285.9	284.8	281.3	282.1	286.1	r283.6	290.7	294.5	293.9	291.9
3644	Noncurrent-carrying wiring devices (12/72 = 100)	r249.6	253.3	253.8	258.5	258.7	262.1	262.1	257.9	259.0	r258.1	259.5	263.0	261.1	260.7
3646	Commercial lighting fixtures (12/75 = 100)	r154.8	154.4	155.5	157.6	158.8	159.3	159.2	159.2	161.1	r162.4	163.6	167.5	167.2	166.5
3648	Lighting equipment, n.e.c. (12/75 = 100)	r155.9	153.8	161.3	161.7	162.0	162.4	163.1	162.8	167.8	168.8	170.2	170.4	170.9	171.1
3671	Electron tubes receiving type	309.7	327.4	327.5	327.5	327.5	327.8	342.2	374.1	374.2	r374.4	375.2	375.0	375.1	376.0
3674	Semiconductors and related devices	r90.9	89.2	89.2	91.4	91.6	92.0	91.7	90.9	90.2	r90.0	90.1	89.6	89.7	90.8
3675	Electronic capacitors (12/75 = 100)	170.3	171.4	178.8	172.4	171.5	168.1	166.6	167.4	169.7	r168.4	167.8	166.6	166.8	166.7
3676	Electronic resistors (12/75 = 100)	r141.4	142.1	142.5	142.7	142.7	143.0	142.8	143.7	144.0	r143.4	144.7	145.2	144.9	144.4
3678	Electronic connectors (12/75 = 100)	r154.9	155.0	155.8	156.5	156.8	155.8	155.8	155.9	156.2	r156.7	156.7	158.1	158.3	157.6
3692	Primary batteries, dry and wet	182.2	181.6	182.7	182.7	182.7	182.7	182.7	182.0	184.3	r190.5	195.4	194.9	195.8	196.3
3711	Motor vehicles and car bodies (12/75 = 100)	r150.3	150.3	150.1	143.4	158.6	158.7	159.1	159.8	155.0	r154.9	154.5	156.7	159.6	159.7
3942	Dolls (12/75 = 100)	r131.3	130.9	130.9	130.9	130.9	130.9	130.9	135.5	136.6	r136.6	136.5	136.5	136.5	136.5
3944	Games, toys, and children's vehicles	r221.3	222.0	222.0	222.2	222.2	222.6	223.9	228.4	232.5	r234.1	231.4	231.7	231.7	231.8
3955	Carbon paper and inked ribbons (12/75 = 100)	r138.5	140.4	140.6	140.6	140.2	140.2	140.3	140.3	140.3	140.3	140.3	140.5	140.6	140.5
3995	Burial caskets (6/76 = 100)	139.5	138.3	140.6	143.4	143.4	143.4	142.7	142.7	143.8	145.3	145.3	149.3	149.3	150.8
3996	Hard surface floor coverings (12/75 = 100)	151.8	153.3	153.6	153.7	153.7	153.7	153.7	155.1	155.2	156.1	156.1	158.3	154.3	155.0

[1] Data for March 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

r = revised.

PRODUCTIVITY DATA

Productivity data are compiled by the Bureau of Labor Statistics from establishment data and from estimates of compensation and output supplied by the U.S. Department of Commerce and the Federal Reserve Board.

Definitions

Output is the constant dollar gross domestic product produced in a given period. Indexes of **output per hour of labor input**, or labor productivity, measure the value of goods and services produced per hour of labor. **Compensation per hour** includes wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. The data also include an estimate of wages, salaries, and supplementary payments for the self-employed, except for nonfinancial corporations, in which there are no self-employed. **Real compensation per hour** is compensation per hour adjusted by the Consumer Price Index for All Urban Consumers.

Unit labor cost measures the labor compensation cost required to produce one unit of output and is derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from the current dollar gross domestic product and dividing by output. In these tables, **unit nonlabor costs** contain all the components of unit nonlabor payments except unit profits. **Unit profits** include corporate profits and inventory valuation adjustments per unit of output.

The **implicit price deflator** is derived by dividing the current dollar estimate of gross product by the constant dollar estimate, making the deflator, in effect, a price index for gross product of the sector reported.

The use of the term "man hours" to identify the labor component of productivity and costs, in tables 26 through 29, has been discontinued. **Hours of all persons** is now used to describe the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all-employee hour** is now used to describe labor productivity in nonfinancial corporations where there are no self-employed.

Notes on the data

In the business sector and the nonfarm business sector, the basis for the output measure employed in the computation of output per hour is Gross Domestic Product rather than Gross National Product. Computation of hours includes estimates of nonfarm and farm proprietor hours.

Output data are supplied by the Bureau of Economic Analysis, U.S. Department of Commerce, and the Federal Reserve Board. Quarterly manufacturing output indexes are adjusted by the Bureau of Labor Statistics to annual estimates of output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are from the Bureau of Economic Analysis and the Bureau of Labor Statistics.

Beginning with the September 1982 issue of the *Review*, all of the productivity and cost measures contained in these tables are based on revised output and compensation measures released by the Bureau of Economic Analysis in July as part of the regular revision cycle of the National Income and Product Accounts. Measures of labor input have been revised to reflect results of the 1980 census, and seasonal factors have been recomputed for use in the preparation of quarterly measures. The word "private" will no longer be used as part of the series title of one of the two business sector measures prepared by BLS; no change has been made in the definition or content of the measures as a result of this change.

26. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950–81

[1977 = 100]

Item	1950[r]	1955[r]	1960[r]	1965[r]	1970[r]	1974[r]	1975[r]	1976[r]	1977[r]	1978[r]	1979[r]	1980[r]	1981[r]
Business sector:													
Output per hour of all persons	50.4	58.3	65.2	78.3	86.2	89.8	91.8	97.6	100.0	100.6	99.6	98.9	100.7
Compensation per hour	20.0	26.4	33.9	41.7	58.2	78.0	85.5	92.9	100.0	108.6	119.1	131.4	144.1
Real compensation per hour	50.5	58.6	69.5	80.1	90.8	95.9	96.3	98.9	100.0	100.9	99.4	96.7	96.0
Unit labor cost	39.7	45.2	52.0	53.3	67.5	86.9	93.2	95.1	100.0	108.0	119.5	132.9	143.1
Unit nonlabor payments	43.4	47.6	50.6	57.6	63.2	80.9	93.1	94.0	100.0	106.7	112.8	119.3	135.2
Implicit price deflator	41.0	46.0	51.6	54.7	66.0	84.8	93.2	94.7	100.0	107.5	117.2	128.3	140.0
Nonfarm business sector:													
Output per hour of all persons	56.3	62.8	68.3	80.5	86.8	90.1	91.9	97.8	100.0	100.6	99.3	98.5	99.9
Compensation per hour	21.8	28.3	35.7	42.8	58.7	78.5	86.0	93.0	100.0	108.6	118.8	130.9	143.6
Real compensation per hour	55.0	64.0	73.0	82.2	91.5	96.4	96.8	99.0	100.0	100.9	99.2	96.3	95.7
Unit labor cost	38.8	45.0	52.2	53.2	67.6	87.1	93.6	95.1	100.0	108.0	119.6	133.0	143.8
Unit nonlabor payments	42.7	47.8	50.4	58.0	63.7	78.2	91.3	93.5	100.0	105.3	110.3	119.1	134.8
Implicit price deflator	40.1	46.0	51.6	54.8	66.3	84.1	92.8	94.6	100.0	107.1	116.5	128.3	140.8
Nonfinancial corporations:													
Output per hour of all employees	(1)	(1)	66.6	80.2	85.7	91.7	94.8	97.8	100.0	101.0	101.2	100.8	102.7
Compensation per hour	(1)	(1)	38.2	43.0	58.3	77.6	85.5	92.5	100.0	108.6	118.2	131.6	144.4
Real compensation per hour	(1)	(1)	74.2	82.5	90.9	95.4	98.2	98.5	100.0	100.8	99.5	96.8	96.2
Unit labor cost	(1)	(1)	54.4	53.5	68.0	84.7	90.2	94.6	100.0	107.5	117.8	130.5	140.6
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	75.6	90.8	95.0	100.0	104.2	106.9	117.7	134.8
Implicit price deflator	(1)	(1)	54.5	58.1	66.3	81.6	90.4	94.7	100.0	106.4	114.1	126.1	138.6
Manufacturing:													
Output per hour of all persons	49.4	56.4	60.0	74.5	79.1	90.8	93.4	97.5	100.0	100.9	101.5	101.7	104.5
Compensation per hour	21.5	28.8	36.7	42.8	57.6	76.3	85.4	92.3	100.0	108.3	118.9	132.8	146.4
Real compensation per hour	54.0	65.1	75.1	82.3	89.8	93.8	96.2	98.3	100.0	100.6	99.2	97.7	97.5
Unit labor cost	43.4	51.0	61.1	57.5	72.7	84.1	91.5	94.6	100.0	107.4	117.1	130.6	140.0
Unit nonlabor payments	54.3	58.5	61.1	69.3	65.0	69.3	87.3	93.7	100.0	102.5	99.9	97.1	108.8
Implicit price deflator	46.6	53.2	61.1	61.0	70.5	79.8	90.3	94.4	100.0	106.0	112.0	120.8	130.8

[1] Not available.

r = revised.

NOTE: For explanation of revisions, see "Notes on the data."

27. Annual changes in productivity, hourly compensation, unit costs, and prices, 1971–81

Item	Year											Annual rate of change	
	1971r	1972r	1973r	1974r	1975r	1976r	1977r	1978r	1979r	1980r	1981r	1950-81r	1960-81r
Business sector:													
Output per hour of all persons	3.6	3.5	-0.2	-2.6	2.2	6.4	2.4	0.6	-0.9	-0.7	1.8	2.4	2.1
Compensation per hour	6.6	6.5	8.0	9.4	9.6	8.6	7.7	8.6	8.7	10.4	9.6	6.2	7.2
Real compensation per hour	2.2	3.1	1.8	-1.4	0.5	2.6	1.2	0.9	-1.4	-2.8	-0.7	2.3	1.7
Unit labor cost	2.9	2.9	8.2	12.3	7.3	2.0	5.1	8.0	10.7	11.2	7.7	3.6	5.0
Unit nonlabor payments	7.6	4.5	8.8	4.6	15.1	1.0	6.4	6.7	5.7	5.8	13.3	3.4	4.6
Implicit price deflator	4.4	3.4	8.4	9.7	9.8	1.7	5.6	7.5	9.0	9.4	9.5	3.5	4.9
Nonfarm business sector:													
Output per hour of all persons	3.3	3.7	-0.4	-2.7	1.9	6.5	2.2	0.6	-1.3	-0.9	1.4	2.1	1.8
Compensation per hour	6.6	6.7	7.6	9.4	9.6	8.1	7.5	8.6	9.3	10.2	9.7	5.9	7.0
Real compensation per hour	2.2	3.3	1.3	-1.4	0.4	2.2	1.0	0.9	-1.7	-2.9	-0.7	2.0	1.5
Unit labor cost	3.2	2.9	8.0	12.5	7.5	1.6	5.2	8.0	10.7	11.2	8.1	3.7	5.0
Unit nonlabor payments	7.4	3.2	4.2	6.2	18.8	2.5	6.9	5.3	4.7	8.0	13.1	3.3	4.5
Implicit price deflator	4.5	3.0	6.7	10.4	10.4	1.9	5.7	7.1	8.8	10.2	9.7	3.6	4.9
Nonfinancial corporations:													
Output per hour of all employees	4.8	3.0	2.6	-3.4	3.4	3.2	2.3	1.0	0.2	-0.3	1.8	(1)	2.0
Compensation per hour	6.5	5.8	7.7	9.7	10.1	8.2	6.1	8.6	9.8	10.4	9.7	(1)	6.9
Real compensation per hour	2.1	2.5	1.4	-1.1	0.9	2.3	1.6	0.8	-1.3	-2.8	-0.6	(1)	1.4
Unit labor cost	1.8	2.8	4.9	13.6	6.5	4.9	5.7	7.5	9.6	10.7	7.8	(1)	4.8
Unit nonlabor payments	7.4	2.7	1.5	7.1	20.1	4.6	5.3	4.2	2.6	10.1	14.6	(1)	4.0
Implicit price deflator	3.5	2.8	3.8	11.4	10.9	4.8	5.6	6.4	7.2	10.5	10.0	(1)	4.5
Manufacturing:													
Output per hour of all persons	6.1	5.0	5.4	-2.4	2.9	4.4	2.5	0.9	0.7	0.2	2.8	2.6	2.8
Compensation per hour	6.1	5.4	7.2	10.6	11.9	8.0	8.3	8.3	9.7	11.8	10.2	5.8	6.9
Real compensation per hour	1.8	2.0	0.9	-0.3	2.5	2.1	1.8	0.6	-1.4	-1.8	-0.2	2.0	1.4
Unit labor cost	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.4	9.0	11.6	7.2	3.1	4.1
Unit nonlabor payments	11.2	0.8	-3.3	-1.8	25.9	7.4	6.7	2.5	-2.6	-2.7	12.0	2.3	3.0
Implicit price deflator	3.1	0.5	0.3	9.0	13.1	4.6	6.0	6.0	5.7	7.8	8.4	2.8	3.8

[1] Not available.

r = revised.

NOTE: For explanation of revisions, see "Notes on the data."

28. Quarterly indexes of productivity, hourly compensation, unit costs, and prices, seasonally adjusted

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1979r	1980r				1981r				1982r	
	1980r	1981r	IV	I	II	III	IV	I	II	III	IV	I	II
Business sector:													
Output per hour of all persons	98.9	100.7	99.1	99.3	98.2	98.9	99.3	100.7	100.7	101.0	100.2	100.0	100.7
Compensation per hour	131.4	144.1	123.0	126.7	130.0	133.1	136.1	140.0	142.5	145.6	148.2	150.9	153.4
Real compensation per hour	96.7	96.0	97.8	97.0	96.4	96.9	96.2	96.2	96.4	95.7	95.6	96.5	97.1
Unit labor cost	132.9	143.1	124.1	127.6	132.2	134.7	137.0	139.0	141.5	144.2	147.9	150.9	152.4
Unit nonlabor payments	119.3	135.2	113.2	116.0	116.2	120.6	124.6	131.8	133.4	137.4	138.3	136.4	138.9
Implicit price deflator	128.3	140.4	120.4	123.7	126.9	129.9	132.8	136.5	138.8	141.9	144.6	148.0	147.8
Nonfarm business sector:													
Output per hour of all persons	98.5	99.9	98.8	98.7	97.6	98.4	99.2	100.4	100.0	100.0	99.1	99.2	99.8
Compensation per hour	130.9	143.6	122.7	126.2	129.3	132.6	135.7	139.5	142.0	145.1	147.7	150.4	152.7
Real compensation per hour	96.3	95.7	97.6	96.6	96.0	96.5	95.9	96.0	96.0	95.4	95.3	96.3	96.6
Unit labor cost	133.0	143.8	124.1	127.8	132.5	134.7	136.8	139.0	141.9	145.1	149.0	151.6	153.0
Unit nonlabor payments	119.1	134.8	111.3	115.2	116.7	120.3	124.4	131.5	132.8	136.7	138.4	136.7	139.3
Implicit price deflator	128.3	140.8	119.8	123.6	127.2	129.9	132.7	136.5	138.9	142.3	145.5	148.6	148.4
Nonfinancial corporations:													
Output per hour of all employees	100.8	102.7	100.6	100.8	99.8	101.1	101.7	102.8	102.7	102.8	102.2	102.3	(1)
Compensation per hour	131.6	144.4	123.1	126.8	130.0	133.4	136.3	140.4	142.7	145.7	148.6	151.7	(1)
Real compensation per hour	96.8	96.2	97.9	97.0	96.4	97.1	96.3	96.5	96.5	95.8	95.9	97.1	(1)
Total unit costs	131.0	143.4	121.4	125.0	130.4	132.9	135.8	138.3	141.7	144.7	149.1	151.8	(1)
Unit labor cost	130.5	140.6	122.4	125.8	130.2	131.9	134.1	136.5	138.9	141.7	145.4	148.3	(1)
Unit nonlabor costs	132.5	151.4	118.7	122.7	131.0	135.7	140.7	143.4	149.6	153.1	158.6	161.8	(1)
Unit profits	87.9	101.6	84.1	91.1	81.9	87.8	90.5	104.7	98.8	105.2	97.6	88.1	(1)
Implicit price deflator	126.1	138.6	117.1	121.1	124.8	127.7	130.6	134.5	136.8	140.2	143.2	144.3	(1)
Manufacturing:													
Output per hour of all persons	101.7	104.5	101.9	102.6	100.4	100.3	103.6	105.2	105.0	105.0	102.8	102.1	102.3
Compensation per hour	132.8	146.4	122.6	127.1	130.9	135.2	138.4	142.6	144.9	147.3	150.7	154.7	157.5
Real compensation per hour	97.7	97.5	97.4	97.3	97.1	98.5	97.8	98.0	97.9	96.8	97.2	98.0	98.7
Unit labor cost	130.6	140.0	120.3	123.9	130.3	134.9	133.6	135.5	138.0	140.3	146.6	151.5	154.0

[1] Not available.

r = revised.

NOTE: For explanation of revisions, see "Notes on the data."

29. Percent change from preceding quarter and year in productivity, hourly compensation, unit costs, and prices, seasonally adjusted at annual rate

[1977=100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	IV 1980 to I 1981r	I 1981 to II 1981r	II 1981 to III 1981r	III 1981 to IV 1981r	IV 1981 to I 1982r	I 1982 to II 1982r	I 1980 to I 1981r	II 1980 to II 1981r	III 1980 to III 1981r	IV 1980 to IV 1981r	I 1981 to I 1982r	II 1981 to II 1982r
Business sector:												
Output per hour of all persons	5.6	0.0	1.1	−2.9	−1.0	2.8	1.4	2.5	2.2	0.9	−0.7	0.0
Compensation per hour	11.7	7.5	9.0	7.4	7.3	7.0	10.5	9.7	9.4	8.9	7.8	7.7
Real compensation per hour	0.2	0.5	−2.6	−0.4	3.9	2.3	−0.7	−0.1	−1.3	−0.6	0.3	0.8
Unit labor costs	5.7	7.5	7.8	10.6	8.4	4.1	8.9	6.9	7.1	7.9	8.6	7.7
Unit nonlabor payments	25.0	4.9	12.5	2.9	−5.4	7.5	13.7	14.8	13.9	11.0	3.5	4.2
Implicit price deflator	11.6	6.6	9.3	8.0	3.8	5.2	10.4	9.4	9.2	8.9	6.9	6.5
Nonfarm business sector:												
Output per hour of all persons	4.9	−1.3	−0.3	−3.5	0.6	2.2	1.7	2.5	1.6	−0.1	−1.1	−0.3
Compensation per hour	11.8	7.1	9.0	7.3	7.7	6.1	10.6	9.8	9.4	8.8	7.8	7.5
Real compensation per hour	0.4	0.1	−2.6	−0.5	4.3	1.5	−0.6	0.0	−1.2	−0.6	0.3	0.7
Unit labor costs	6.6	8.6	9.3	11.2	7.1	3.8	8.8	7.1	7.7	8.9	9.0	7.8
Unit nonlabor payments	24.9	4.0	12.1	5.1	−4.6	7.8	14.1	13.8	13.6	11.2	4.0	4.9
Implicit price deflator	12.1	7.1	10.2	9.2	3.3	5.0	10.4	9.2	9.6	9.6	7.4	6.9
Nonfinancial corporations:												
Output per hour of all employees	4.7	−0.4	0.3	−2.3	0.5	(¹)	2.1	2.8	1.7	0.6	−0.5	(¹)
Compensation per hour	12.4	6.9	8.5	8.3	8.5	(¹)	10.7	9.6	9.2	9.0	8.1	(¹)
Real compensation per hour	0.9	−0.1	−3.0	0.5	5.2	(¹)	−0.5	0.1	−1.4	−0.5	0.6	(¹)
Total unit costs	7.5	10.2	8.6	12.8	7.4	(¹)	10.6	8.7	8.9	9.8	9.7	(¹)
Unit labor costs	7.4	7.3	8.2	10.9	8.1	(¹)	8.5	6.7	7.5	8.4	8.6	(¹)
Unit nonlabor costs	8.0	18.5	9.8	17.8	5.7	(¹)	16.9	14.2	12.9	13.4	12.8	(¹)
Unit profits	79.5	−20.8	28.4	−25.9	−39.4	(¹)	14.9	20.7	19.7	7.9	−17.8	(¹)
Implicit price deflator	12.3	7.1	10.2	8.9	3.0	(¹)	11.0	9.6	9.7	9.6	7.3	(¹)
Manufacturing:												
Output per hour of all persons	6.3	−0.7	−0.1	−8.2	−2.6	0.9	2.6	4.5	4.7	−0.8	−3.0	−2.6
Compensation per hour	12.7	6.6	6.8	9.6	11.1	7.6	12.2	10.7	8.9	8.9	8.5	8.8
Real compensation per hour	1.2	−0.4	−4.6	1.6	7.6	2.9	0.8	0.9	−1.7	−0.8	1.0	1.8
Unit labor costs	6.0	7.3	6.8	19.4	14.1	6.7	9.3	5.9	4.0	9.8	11.8	11.6

[1] Not available.

r=revised

NOTE: For explanation of revisions, see "Notes on the data."

WAGE AND COMPENSATION DATA

Data for the Employment Cost Index are reported to the Bureau of Labor Statistics by a sample of 2,000 private nonfarm establishments and 750 State and local government units selected to represent total employment in those sectors. On average, each reporting unit provides wage and compensation information on five well-specified occupations.

Data on negotiated wage and benefit changes are obtained from contracts on file at the Bureau, direct contact with the parties, and secondary sources.

Definitions

The **Employment Cost Index** (ECI) is a quarterly measure of the average change in the cost of employing labor. The rate of total compensation, which comprises wages, salaries, and employer costs for employee benefits, is collected for workers performing specified tasks. Employment in each occupation is held constant over time for all series produced in the ECI, except those by region, bargaining status, and area. As a consequence, only changes in compensation are measured. Industry and occupational employment data from the 1970 Census of Population are used in deriving constant weights for the ECI. While holding total industry and occupational employment fixed, in the estimation of indexes by region, bargaining status, and area, the employment in those measures is allowed to vary over time in accord with changes in the sample. The rate of change (in percent) is available for wages and salaries, as well as for total compensation. Data are collected for the pay period including the 12th day of the survey months of March, June, September, and December. The statistics are neither annualized nor adjusted for seasonal influence.

Wages and salaries consist of earnings before payroll deductions, excluding premium pay for overtime, work on weekends and holidays, and shift differentials. Production bonuses, incentive earnings, commissions, and cost-of-living adjustments are included; nonproduction bonuses are included with other supplemental pay items in the benefits category; and payments-in-kind, free room and board, and tips are excluded. *Benefits* include supplemental pay, insurance, retirement and savings plans, and hours-related and legally required benefits.

Data on negotiated wage changes apply to private nonfarm industry collective bargaining agreements covering 1,000 workers or more. Data on compensation changes apply only to those agreements covering 5,000 workers or more. *First-year* wage or compensation changes refer to average negotiated changes for workers covered by settlements reached in the period and implemented within the first 12 months after the effective date of the agreement. *Changes over the life of the agreement* refer to all adjustments specified in the contract, expressed as an average annual rate. These measures exclude wage changes that may occur under cost-of-living adjustment clauses, that are triggered by movements in the Consumer Price Index. *Wage-rate changes* are expressed as a percent of straight-time hourly earnings; *compensation changes* are expressed as a percent of total wages and benefits.

Effective wage adjustments reflect all negotiated changes implemented in the reference period, regardless of the settlement date. They include changes from settlements reached during the period, changes deferred from contracts negotiated in an earlier period, and cost-of-living adjustments. The data also reflect contracts providing for no wage adjustment in the period. Effective adjustments and each of their components are prorated over all workers in bargaining units with at least 1,000 workers.

Notes on the data

The Employment Cost Index data series began in the fourth quarter of 1975, with the quarterly percent change in wages and salaries in the private nonfarm sector. Data on employer costs for employee benefits were included in 1980, to produce a measure of the percent change in employers' cost for employees' total compensation. State and local government units were added to the ECI coverage in 1981, providing a measure of total compensation change in the civilian nonfarm economy.

Data for the broad white-collar, blue-collar, and service worker groups, and the manufacturing, nonmanufacturing, and service industry groups are presented in the ECI. Additional occupation and industry detail are provided for the wages and salaries component of total compensation in the private nonfarm sector. For State and local government units, additional industry detail is shown for both total compensation and its wages and salaries component.

Historical indexes (June 1981 = 100) of the quarterly rates of change presented in the ECI are also available.

For a more detailed discussion of the ECI, see chapter 25, "The Employment Cost Index," of the BLS *Handbook of Methods* (Bulletin 1910), and the *Monthly Labor Review* articles: "Employment Cost Index: a measure of change in the 'price of labor,'" July 1975; "How benefits will be incorporated into the Employment Cost Index," January 1978; and "The Employment Cost Index: recent trends and expansion," May 1982.

Additional data for the ECI and other measures of wage and compensation changes appear in *Current Wage Developments*, a monthly periodical of the Bureau.

30. Employment Cost Index, total compensation

[June 1981 = 100]

Series	1980				1981				1982	Percent change	
										3 months ended	12 months ended
	March	June	Sept.	Dec.	March	June	Sept.	Dec.	March	March 1982	
Civilian nonfarm workers[1]	—	—	—	—	—	100.0	102.6	104.5	106.3	1.7	—
Workers, by occupational group											
White-collar workers	—	—	—	—	—	100.0	102.7	104.9	106.5	1.5	—
Blue-collar workers	—	—	—	—	—	100.0	102.3	104.1	105.7	1.5	—
Service workers	—	—	—	—	—	100.0	102.8	104.2	107.2	2.9	—
Workers, by industry division											
Manufacturing	—	—	—	—	—	100.0	102.1	104.0	106.0	1.9	—
Nonmanufacturing	—	—	—	—	—	100.0	102.8	104.8	106.4	1.5	—
Services	—	—	—	—	—	100.0	104.4	107.1	108.2	1.0	—
Public administration[2]	—	—	—	—	—	100.0	104.3	106.0	108.1	2.0	—
Private nonfarm workers	88.6	90.7	92.8	94.7	98.1	100.0	102.0	104.0	105.8	1.7	7.8
Workers, by occupational group											
White-collar workers	88.7	90.8	92.8	94.5	98.3	100.0	101.8	104.0	105.8	1.7	7.6
Blue-collar workers	88.3	90.5	93.0	94.9	97.8	100.0	102.2	104.0	105.6	1.5	8.0
Service workers	88.8	90.8	92.7	94.3	99.3	100.0	101.9	103.1	106.7	3.5	7.5
Workers, by industry division											
Manufacturing	88.7	90.5	92.6	94.7	98.0	100.0	102.1	104.0	106.0	1.9	8.2
Nonmanufacturing	88.6	90.8	92.9	94.7	98.2	100.0	102.0	103.9	105.7	1.7	7.6
State and local government workers	—	—	—	—	—	100.0	105.3	107.4	108.8	1.3	—
Workers, by occupational group											
White-collar workers	—	—	—	—	—	100.0	105.7	107.8	109.1	1.2	—
Blue-collar workers	—	—	—	—	—	100.0	104.2	105.9	108.2	2.2	—
Workers, by industry division											
Services	—	—	—	—	—	100.0	105.8	107.9	109.0	1.0	—
Schools	—	—	—	—	—	100.0	106.0	107.9	108.9	.9	—
Elementary and secondary	—	—	—	—	—	100.0	106.3	108.3	109.3	.9	—
Hospitals and other services[3]	—	—	—	—	—	100.0	105.0	107.8	109.5	1.6	—
Public administration[2]	—	—	—	—	—	100.0	104.3	106.0	108.1	2.0	—

[1] Excludes private household and Federal workers.

[2] Consists of legislative, judicial, administrative, and regulatory activities.

[3] Includes, for example, library, social, and health services.

NOTE: Dashes indicate data not available.

31. Employment Cost Index, wages and salaries, by occupation and industry group

[June 1981 = 100]

Series	1980				1981				1982	Percent change	
	March	June	Sept.	Dec.	March	June	Sept.	Dec.	March	3 months ended March 1982	12 months ended March 1982
Civilian nonfarm workers[1]	—	—	—	—	—	100.0	102.5	104.4	106.3	1.8	—
Workers, by occupational group											
White-collar workers	—	—	—	—	—	100.0	102.6	104.7	106.7	1.9	—
Blue-collar workers	—	—	—	—	—	100.0	102.4	104.0	105.5	1.4	—
Service workers	—	—	—	—	—	100.0	102.5	103.6	106.8	3.1	—
Workers, by industry division											
Manufacturing	—	—	—	—	—	100.0	102.1	104.0	105.9	1.8	—
Nonmanufacturing	—	—	—	—	—	100.0	102.7	104.5	106.5	1.9	—
Services	—	—	—	—	—	100.0	104.4	106.6	108.6	1.9	—
Public administration[2]	—	—	—	—	—	100.0	103.8	105.5	107.5	1.9	—
All private nonfarm workers[3]	89.6	91.5	93.5	95.4	98.0	100.0	102.0	103.8	105.9	2.0	8.1
Workers, by occupational group											
White-collar workers	89.7	91.4	93.3	95.2	98.1	100.0	101.8	103.9	106.2	2.2	8.3
Professional and technical workers	89.2	90.8	93.2	95.3	98.2	100.0	103.3	105.5	108.0	2.4	10.0
Managers and administrators	90.6	92.0	93.5	94.7	98.6	100.0	101.6	102.8	105.8	2.9	7.3
Salesworkers	88.5	90.7	92.2	94.8	96.2	100.0	98.0	101.9	102.2	.3	6.2
Clerical workers	90.3	91.9	93.8	95.7	98.6	100.0	102.7	104.2	107.0	2.7	8.5
Blue-collar workers	89.3	91.6	93.8	95.7	97.7	100.0	102.3	103.9	105.4	1.4	7.9
Craft and kindred workers	89.3	91.4	94.0	96.1	97.8	100.0	102.9	104.3	106.2	1.8	8.6
Operatives, except transport	89.4	91.5	93.6	95.5	97.8	100.0	102.1	104.1	105.4	1.2	7.8
Transport equipment operatives	89.1	92.2	93.5	95.3	98.8	100.0	101.0	102.7	103.2	.5	6.6
Nonfarm laborers	89.6	91.8	93.9	95.7	97.5	100.0	101.5	103.3	104.1	.8	6.8
Service workers	90.8	91.9	93.4	94.8	99.2	100.0	101.8	102.7	106.7	3.9	7.6
Workers, by industry division											
Manufacturing	89.9	91.8	93.6	95.7	97.9	100.0	102.1	104.0	105.9	1.8	8.2
Durables	89.3	91.2	93.5	95.7	97.9	100.0	102.1	104.5	106.3	1.7	8.6
Nondurables	91.0	92.7	93.8	95.7	97.8	100.0	102.0	103.1	105.3	2.1	7.7
Nonmanufacturing	88.5	91.3	93.4	95.2	98.1	100.0	102.0	103.8	105.9	2.0	8.0
Construction	89.3	91.9	94.5	95.9	97.6	100.0	103.0	104.3	105.9	1.5	8.5
Transportation and public utilities	88.2	90.2	93.1	95.6	97.7	100.0	102.0	103.6	105.7	2.0	8.2
Wholesale and retail trade	90.5	92.2	93.6	95.1	98.2	100.0	101.3	102.3	103.9	1.6	5.8
Wholesale trade	89.7	92.1	93.0	95.9	98.5	100.0	102.0	103.4	106.3	2.8	7.9
Retail trade	90.8	92.2	93.8	94.8	98.1	100.0	101.0	101.9	103.0	1.1	5.0
Finance, insurance, and real estate	87.1	89.4	91.2	93.1	95.7	100.0	98.3	102.3	103.7	1.4	8.4
Services	90.5	91.9	94.2	95.7	99.6	100.0	103.6	105.8	108.8	2.8	9.2
State and local governments	—	—	—	—	—	100.0	105.0	107.0	108.2	1.1	—
Workers, by occupational group											
White-collar workers	—	—	—	—	—	100.0	105.4	107.5	108.5	.9	—
Blue-collar workers	—	—	—	—	—	100.0	103.9	105.5	107.5	1.9	—
Workers, by industry division		—	—	—							
Services	—				—	100.0	105.5	107.6	108.4	.7	—
Schools	—	—	—	—	—	100.0	105.7	107.7	108.3	.6	—
Elementary and secondary	—	—	—	—	—	100.0	106.0	107.9	108.7	.7	—
Hospitals and other services[4]	—	—	—	—	—	100.0	104.6	107.3	108.8	1.4	—
Public administration[2]	—	—	—	—	—	100.0	103.3	105.5	107.5	1.9	—

[1] Excludes private household and Federal workers.

[2] Consists of legislative, judicial, administrative, and regulatory activities.

[3] Excludes private household workers.

[4] Includes, for example, library, social, and health services.

NOTE: Dashes indicate data not available.

32. Employment Cost Index, wages and salaries, private nonfarm workers, by bargaining status, region, and area size

[June 1981 = 100]

Series	1980				1981				1982	Percent change	
										3 months ended	12 months ended
	March	June	Sept.	Dec.	March	June	Sept.	Dec.	March	March 1982	
COMPENSATION											
Workers, by bargaining status[1]											
Union	87.4	89.7	92.4	94.7	97.6	100.0	102.5	104.8	106.5	1.6	9.1
Manufacturing	—	—	—	—	—	100.0	102.3	104.6	106.3	1.6	—
Nonmanufacturing	—	—	—	—	—	100.0	102.7	105.0	106.8	1.7	—
Nonunion	89.3	91.1	92.8	94.6	98.4	100.0	101.7	103.5	105.3	1.7	7.0
Manufacturing	—	—	—	—	—	100.0	101.8	103.5	105.7	2.1	—
Nonmanufacturing	—	—	—	—	—	100.0	101.7	103.5	105.2	1.6	—
Workers, by area size[1]											
Metropolitan areas	88.5	90.6	92.8	94.7	98.1	100.0	102.1	104.1	105.7	1.5	7.7
Other areas	88.8	90.3	91.9	94.2	98.1	100.0	101.8	105.2	106.2	2.9	8.3
WAGES AND SALARIES											
Workers, by bargaining status[1]											
Union	88.4	90.8	93.5	95.8	97.4	100.0	102.7	105.0	106.5	1.4	9.3
Manufacturing	88.8	91.3	93.8	96.1	97.7	100.0	102.6	104.7	105.9	1.1	8.4
Nonmanufacturing	88.0	90.4	93.1	95.5	97.1	100.0	102.8	105.2	107.0	1.7	10.2
Nonunion	90.2	91.8	93.4	95.1	98.2	100.0	101.6	103.2	105.6	2.3	7.5
Manufacturing	91.0	92.3	93.4	95.4	97.9	100.0	101.7	103.3	105.9	2.5	8.2
Nonmanufacturing	89.9	91.5	93.4	95.0	98.3	100.0	101.6	103.2	105.5	2.2	7.3
Workers, by region[1]											
Northeast	90.6	92.5	94.2	96.0	98.3	100.0	101.7	104.4	106.1	1.6	7.9
South	89.7	91.4	93.2	94.9	98.0	100.0	101.9	102.8	105.7	2.8	7.9
North Central	89.7	91.6	93.3	95.3	98.1	100.0	101.6	103.3	104.7	1.4	6.7
West	88.2	90.4	93.5	95.3	97.9	100.0	103.2	105.1	107.9	2.7	10.2
Workers, by area size[1]											
Metropolitan areas	89.4	91.4	93.5	95.4	97.9	100.0	102.1	104.0	105.9	1.8	8.2
Other areas	90.1	91.5	92.9	95.1	98.3	100.0	101.8	103.1	106.0	2.8	7.8

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[1] The indexes are calculated differently from those for the occupation and industry groups. For a detailed description of the index calculation, see BLS *Handbook of Methods*, Bulletin 1910.

33. Wage and compensation change, major collective bargaining settlements, 1977 to date

[In percent]

Measure	Annual average					Quarterly average								
						1980			1981				1982^p	
	1977	1978	1979	1980	1981	II	III	IV	I	II	III	IV	I^r	II
Total compensation changes covering 5,000 workers or more, all industries:														
First year of contract	9.6	8.3	9.0	10.4	10.2	10.2	11.4	8.5	7.7	11.6	10.5	11.0	1.9	2.1
Annual rate over life of contract	6.2	6.3	6.6	7.1	8.3	7.4	7.2	6.1	7.2	10.8	8.1	5.8	1.2	1.6
Wage rate changes covering at least 1,000 workers, all industries:														
First year of contract	7.8	7.6	7.4	9.5	9.8	9.1	10.5	8.3	7.1	11.8	10.8	9.0	3.0	2.9
Annual rate over life of contract	5.8	6.4	6.0	7.1	7.9	7.3	7.4	6.5	6.2	9.7	8.7	5.7	2.8	2.7
Manufacturing:														
First year of contract	8.4	8.3	6.9	7.4	7.2	6.7	8.4	7.8	6.4	8.2	9.0	6.6	2.5	1.3
Annual rate over life of contract	5.5	6.6	5.4	5.4	6.1	5.1	5.6	5.8	5.5	6.7	7.5	5.4	2.7	1.2
Nonmanufacturing (excluding construction):														
First year of contract	8.0	8.0	7.6	9.5	9.8	10.3	9.5	8.2	8.0	11.8	8.6	9.6	2.6	6.5
Annual rate over life of contract	5.9	6.5	6.2	6.6	7.3	8.5	5.9	6.8	7.3	9.1	7.2	5.6	2.1	5.7
Construction:														
First year of contract	6.3	6.5	8.8	13.6	13.5	12.2	15.4	14.3	11.4	12.9	16.4	11.4	9.1	5.8
Annual rate over life of contract	6.3	6.2	8.3	11.5	11.3	10.4	13.0	12.0	10.3	11.1	12.4	11.7	8.9	6.0

r = revised.

34. Effective wage adjustments in collective bargaining units covering 1,000 workers or more, 1977 to date

Measure	Year					Year and quarter								
						1980			1981				1982^p	
	1977	1978	1979	1980	1981	II	III	IV	I	II	III	IV	I^r	II
Average percent adjustment (including no change):														
All industries	8.0	8.2	9.1	9.9	9.5	3.3	3.5	1.3	1.7	3.2	3.3	1.5	1.0	1.9
Manufacturing	8.4	8.6	9.6	10.2	9.4	3.4	2.9	1.7	2.3	2.4	3.1	1.9	.9	.9
Nonmanufacturing	7.6	7.9	8.8	9.7	9.5	3.2	4.0	1.1	1.2	3.8	3.4	1.1	1.0	2.6
From settlements reached in period	3.0	2.0	3.0	3.6	2.5	1.0	1.7	.5	.4	1.1	.5	.4	.2	.3
Deferred from settlements reached in earlier period	3.2	3.7	3.0	3.5	3.8	1.4	1.2	.3	.5	1.4	1.5	.4	.6	1.3
From cost-of-living clauses	1.7	2.4	3.1	2.8	3.2	.8	.7	.6	.7	.7	1.2	.6	.3	.2
Total number of workers receiving wage change (in thousands)[1]	—	—	—	—	8,648	—	—	—	3,855	4,701	4,364	3,225	2,955	3,359
From settlements reached in period	—	—	—	—	2,270	—	—	—	579	909	540	604	199	407
Deferred from settlements reached in earlier period	—	—	—	—	6,267	—	—	—	888	2,055	3,023	882	1,038	1,629
From cost-of-living clauses	—	—	—	—	4,593	—	—	—	2,639	2,669	2,934	2,179	1,960	1,496
Number of workers receiving no adjustments (in thousands)	—	—	—	—	145	—	—	—	4,937	4,092	4,428	5,568	5,767	5,364

[1] The total number of workers who received adjustments does not equal the sum of workers that received each type of adjustment, because some workers received more than one type of adjustment during the period.

r = revised.

WORK STOPPAGE DATA

Work stoppages include all known strikes or lockouts involving 1,000 workers or more and lasting a full shift or longer. Data are based largely on newspaper accounts and cover all workers idle one shift or more in establishments directly involved in a stoppage. They do not measure the indirect or secondary effect on other establishments whose employees are idle owing to material or service shortages.

Estimates of days idle as a percent of estimated working time measures only the impact of larger strikes (1,000 workers or more). Formerly, these estimates measured the impact of strikes involving 6 workers or more; that is, the impact of virtually *all* strikes. Due to budget stringencies, collection of data on strikes involving 6 workers or more was discontinued with the December 1981 data.

35. Work stoppages involving 1,000 workers or more, 1947 to date

Month and year		Number of stoppages		Workers involved		Days idle	
		Beginning in month or year	In effect during month or year	Beginning in month or year (in thousands)	In effect during month (in thousands)	Number (in thousands)	Percent of estimated working time
1947		270	...	1,629	...	25,720	
1948		245	...	1,435	...	26,127	.22
1949		262	...	2,537	...	43,420	.38
1950		424	...	1,698	...	30,390	.26
1951		415	...	1,462	...	15,070	.12
1952		470	...	2,746	...	48,820	.38
1953		437	...	1,623	...	18,130	.14
1954		265	...	1,075	...	16,630	.13
1955		363	...	2,055	...	21,180	.16
1956		287	...	1,370	...	26,840	.20
1957		279	...	887	...	10,340	.07
1958		332	...	1,587	...	17,900	.13
1959		245	...	1,381	...	60,850	.43
1960		222	...	896	...	13,260	.09
1961		195	...	1,031	...	10,140	.07
1962		211	...	793	...	11,760	.08
1963		181	...	512	...	10,020	.07
1964		246	...	1,183	...	16,220	.11
1965		268	...	999	...	15,140	.10
1966		321	...	1,300	...	16,000	.10
1967		381	...	2,192	...	31,320	.18
1968		392	...	1,855	...	35,567	.20
1969		412	...	1,576	...	29,397	.16
1970		381	...	2,468	...	52,761	.29
1971		298	...	2,516	...	35,538	.19
1972		250	...	975	...	16,764	.09
1973		317	...	1,400	...	16,260	.08
1974		424	...	1,796	...	31,809	.16
1975		235	...	965	...	17,563	.09
1976		231	...	1,519	...	23,962	.12
1977		298	...	1,212	...	21,258	.10
1978		219	...	1,006	...	23,774	.11
1979		235	...	1,021	...	20,409	.09
1980		187	...	795	...	20,844	.09
1981		145	...	729	...	16,908	.07
1981:	January	6	12	12.0	29.6	257.9	.01
	February	7	10	10.7	20.9	118.5	.01
	March	16	20	201.6	207.8	861.8	.04
	April	17	27	48.0	223.5	4,085.2	.20
	May	18	27	85.1	259.0	4,454.0	.24
	June	30	43	200.1	415.1	2,818.3	.13
	July	23	38	80.1	125.4	1,575.5	.08
1982^{p}:	January	2	4	6.1	11.4	199.9	.01
	February	2	6	2.5	13.9	236.9	.01
	March	3	8	8.3	21.3	352.2	.02
	April	^{r}9	^{r}16	^{r}35.7	^{r}55.3	^{r}480.3	.02
	May	14	^{r}21	43.7	^{r}60.3	^{r}636.1	.03
	June	^{r}17	^{r}25	^{r}41.4	^{r}64.5	^{r}894.0	.04
	July	11	22	37.3	63.2	851.9	.04

r = revised.

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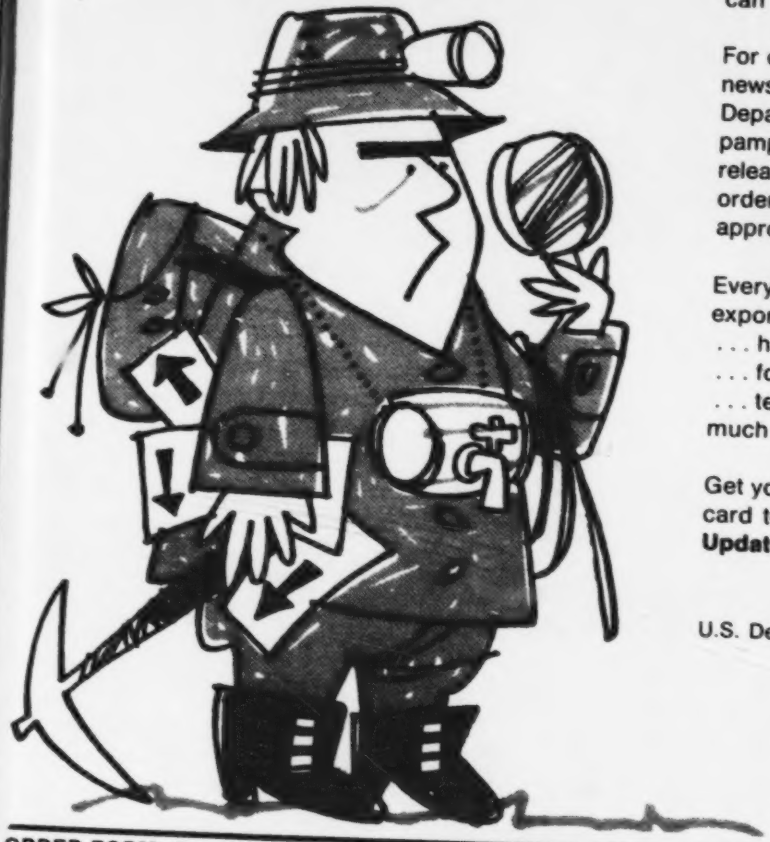

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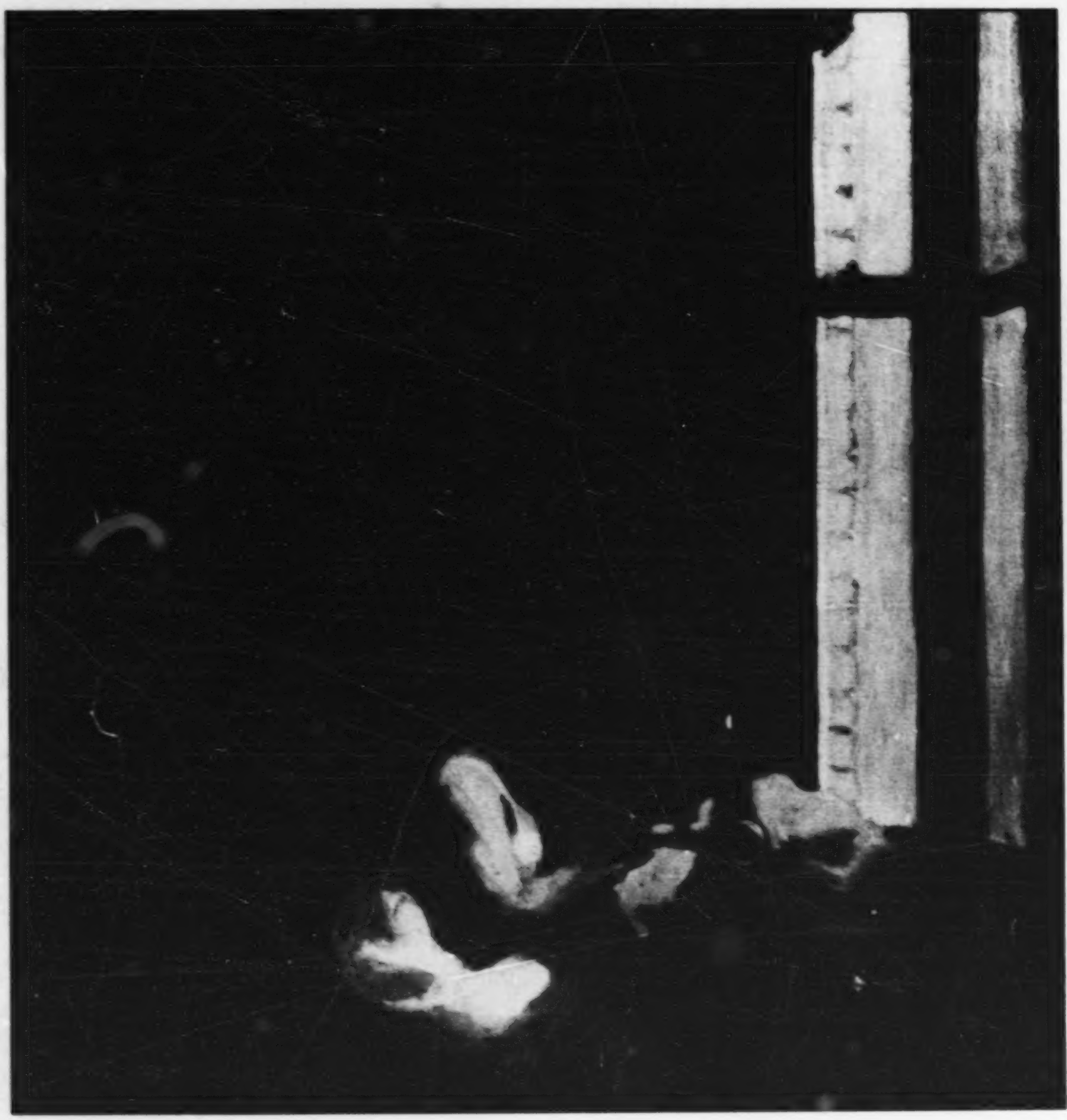
MONTHLY LABOR REVIEW

U.S. Department of Labor
Bureau of Labor Statistics
October 1982

In this issue:
Articles on unpaid family workers
and the productivity puzzle



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U.S. DEPARTMENT OF LABOR
Raymond J. Donovan, *Secretary*

BUREAU OF LABOR STATISTICS
Janet L. Norwood, *Commissioner*

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MONTHLY LABOR REVIEW

OCTOBER 1982
VOLUME 105, NUMBER 10

Henry Lowenstern, Editor-in-Chief
Robert W. Fisher, Executive Editor

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Labor Month In Review

COOPERATION between management and labor was the focus of an unusual conference that drew nearly 1,000 industrial relations practitioners to Washington, D.C., September 9 and 10. Sponsored by the Federal Mediation and Conciliation Service, the conference featured a report by Peter Pestillo, vice president for labor relations of the Ford Motor Company, about union-management cooperation in the auto industry, and a score of discussions and workshop sessions dealing with labor-management committees, quality of worklife programs, quality circles, and similar efforts. Excerpts:

Daniel Quinn Mills, Harvard University: Collective bargaining practiced primarily as rule-making has become self-defeating for both unions and management. We must go beyond both rule-making and the adversarial emphasis if a major new contribution to American economic performance is to be made. Rule-making may be replaced by a greater degree of employee participation and commitment in the workplace, but unless the adversarial posture changes, increased participation is of no use. Instead of resolving production problems, participatory schemes will simply add additional delays to management decisionmaking.

It is time to draw on the older tradition of the American labor movement to move beyond the concept of collective bargaining as primarily a rule-making process. This should be done by putting far more flexibility into the collective bargaining agreement through less detailed provisions, through reorganized work arrangements, and through different incentives for both management and labor. Some rule-making and the legal enforceability of contracts are not to be abandoned. But they must now take a back seat to attempts to move the collective bargaining process beyond continual confrontation and into a more constructive mode.

A commitment to enhancing productivity is not easily made by American unionists. Too often increased productivity has simply meant speeding up the pace at which managers require employees to work. But there is far more to improving productivity than speedups; and the failure to seek productivity improvement in a company threatens the continued existence of jobs that the company provides. Unions must find a way to be more sophisticated in their response to management efforts to improve productivity. Some efforts should be opposed, but others must be supported. And the goal of improving productivity should be accepted.

Raymond J. Donovan, Secretary of Labor: I recently created, within the Department's Labor-Management Services Administration, a Division of Cooperative Labor-Management programs. This new unit, whose work is just now getting under way, will serve as the focal point of our various activities in this area of concern. It will be responsible for developing and administering a program of technical assistance and information designed to encourage and assist employers and unions to undertake joint efforts to enlist the talents and energies of workers in a common campaign to improve productivity and quality of working life. When fully operative, management and union officials, as well as academic and other third parties, should have at their disposal a hitherto unavailable store of information about current issues and innovative industrial relations practices. While these kinds of data may now exist in goodly amounts, they are widely scattered and not readily accessed by those most in need of them. As a result of this information clutter, there is too much reinventing of the wheel and too little chance to build on the basis of experience already gained. The type of central information exchange we envision should go far to correct this problem.

One of the chief purposes of the Labor Department's program is to bolster existing institutional capabilities by providing services primarily to such intermediate support groups as area and industry labor-management committees, productivity and quality of working life centers, trade associations and international unions. These are the organizations that local employers and unions should rely on to obtain more direct forms of assistance in developing their own cooperative programs.

Glenn Watts, president, Communications Workers of America: During the past few years, Quality of Work Life has become a controversial topic for American labor. A growing number of unions have become involved in QWL efforts, either on their own initiative or management's; but at the same time opposition has become stronger.

The controversy comes from the fact that QWL challenges many of the traditional ways in which unions do business. It is based, first of all, on a cooperative, problem-solving relationship between labor and management, instead of the familiar adversarial style.

One result is that in most QWL efforts the grievance rate drops significantly. And further, QWL increases the direct contact between employers and shop-floor workers, threatening to bypass the union.

These aspects of QWL are seen by many in the labor movement as a threat. But others—and I include myself among them—see it as offering a great opportunity to extend the reach of collective bargaining. □

Unpaid family workers: long-term decline continues

The number of those working without pay in family businesses dropped by 1981 to less than half of the 1950 total; agriculture, where most had been employed, registered the sharpest loss of jobs

PATRICIA A. DALY

For more than 30 years, the total number of persons working without pay in family businesses has dwindled to a point that, by 1981, was less than half of the 1950 total. At 650,000, unpaid family workers accounted for less than 1 percent of total employment in 1981, down from almost 3 percent in 1950.

Historically, the vast majority of unpaid family workers had been in the agricultural sector, but there are now fewer unpaid family workers in agriculture than in other industries. Unpaid family workers accounted for one-sixth of farm employment in 1950, but for less than one-tenth in 1981. The largest numerical decline occurred between 1960 and 1970, a decade which experienced dramatic declines in total agricultural employment. Although the number of unpaid family workers in nonagricultural industries has fluctuated in the last 30 years, the levels for 1950 and 1981 were virtually the same at about 400,000, a very small share of nonfarm employment. (See table 1.)

This article is the first by the Bureau of Labor Statistics to examine and analyze the available data on unpaid family workers. The group, although numerically small, exhibits some interesting characteristics and reflects some of the widespread changes in the work force and the economy.

Classification of workers

Since the 1940's, the Current Population Survey (a monthly survey of households) has obtained information on an individual's labor force activity during a designated period. Based on the responses of a household member to a series of questions, each individual aged 16 years and older is classified as employed, unemployed, or not in the labor force. To be considered employed, a person must be paid for at least one hour of work (wage and salary worker); operate one's own business, profession, or farm (self-employed); or work without pay for 15 or more hours per week in a family business or on a family farm (unpaid family worker). Those who have a job but are not at work temporarily for such reasons as illness, vacation, or an industrial dispute are also counted as employed, whether or not they are paid.

The first question asked the respondent about each appropriate household member is, "What was . . . doing most of last week—working or something else?" This is followed by "Did . . . do any work at all last week, not counting work around the house?" If there is already a farm or business operator enumerated in the household, the respondent is asked specifically about unpaid work.

Data are collected on hours worked at all jobs; however, an individual is assigned to an occupation, industry, and class-of-worker category based on the job in which he or she worked the most hours. Thus, individu-

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Patricia A. Daly is an economist in the Division of Employment and Unemployment Analysis, Bureau of Labor Statistics.

Table 1. Unpaid family workers in agriculture and nonagricultural industries by sex, annual averages, selected years, 1950–81

[Numbers in thousands]

Industry and year	Total: Number	Total: Percent of employment	Men: Number	Men: Percent of employment	Women: Number	Women: Percent of employment
All industries:						
1950 ...	1,573	2.7	523	1.3	1,050	6.1
1960 ...	1,499	2.3	385	.9	1,114	5.1
1970 ...	1,001	1.3	213	.4	788	2.7
1981 ...	656	.7	138	.2	518	1.2
Agriculture:						
1950 ...	1,190	16.6	466	7.8	724	62.5
1960 ...	901	16.5	310	6.9	596	60.4
1970 ...	499	14.4	160	5.6	339	56.4
1981 ...	266	7.9	91	3.4	176	26.4
Nonagriculture:						
1950 ...	383	.7	57	.2	326	2.0
1960 ...	598	1.0	75	.2	518	2.5
1970 ...	502	.7	53	.1	449	2.2
1981 ...	390	.4	47	.1	343	.8

als who do unpaid family work but work more hours in another job are not counted as unpaid family workers.

Demographic changes

Sex. Women are far more likely to be unpaid family workers than men, particularly in nonagricultural industries. As the mix between agriculture and nonagricultural industries has changed, the female proportion of unpaid family workers has increased:

	1950	*1960*	*1970*	*1981*
Total employment (in percent):				
Men	30	26	21	21
Women	70	74	79	79
Agriculture:				
Men	35	34	32	34
Women	65	66	68	66
Nonagriculture:				
Men	15	13	11	12
Women	85	87	89	88

The number of unpaid female family workers declined by 530,000 between 1950 and 1981 and the number of male workers, by 300,000. The percentage declines were more drastic for men overall (74 percent) than for women (51 percent). Table 1 provides employment levels and the percent of agriculture and nonagricultural employment which unpaid family work represents.

The employment declines may reflect changing societal values and economic conditions which include the fact that more women are seeking paid employment and that there is an increasing societal acceptance and expectation of this phenomenon. In agriculture, particularly, the trends are consistent with the breakup of the traditional family farm which has resulted in increases in farm size, decreases in the number of farms, more incorporations, and more part-time farming.

Age. One of the ways in which young persons can gain valuable experience and assist their families until they begin their own careers is by doing unpaid family work. As the following percentage distribution of 1981 data suggests, the vast majority of male unpaid family workers are under 25 years of age, while most women in this category are in the central age group—25 to 54:

	Agriculture		*Nonagriculture*	
	Men	*Women*	*Men*	*Women*
Total number (in thousands) . .	91	176	47	343
Percent	100	100	100	100
Ages 16–24 . .	81	13	57	7
Ages 25–54 . .	11	67	23	73
Ages 55 and over	8	20	19	20

The large differential may reflect the fact that men in the central age group were somewhat more likely to seek paid employment. What may be more important, however, is that, in a family operated business or farm, the husband may be counted as self-employed and the wife as an unpaid family worker. This would explain the large percentage of female unpaid family workers in the 25–54 age group. The fact that men accounted for almost 90 percent of the self-employed in agriculture and nearly 70 percent in nonagricultural industries lends some support to this interpretation.

Race. Although black and other minority races made up about 13 percent of the civilian labor force, they accounted for only 2 percent of unpaid family workers in agricultural industries and 6 percent of those in nonagricultural industries. This is undoubtedly related to the low proportion of blacks and other minorities operating their own farms and businesses—4 percent of self-employed workers in agriculture and 7 percent in other industries.

Occupational trends

An examination of data on unpaid family workers by occupation revealed sharp differences between men and women as well as a shift from farm to white-collar occupations as the most common job categories for unpaid family workers. Women accounted for almost 80 percent of unpaid family workers in 1981 and they had more jobs than men in every occupational group. More than half were doing white-collar work, while most of the male unpaid family workers were in farming.

With the decline in unpaid family work on farms, white-collar occupations have overtaken farm occupations as the dominant group for unpaid family workers. Within the white-collar group, three-fourths of unpaid family workers had clerical jobs in 1981 and more than 100,000 were bookkeepers. Unpaid family workers were also frequently employed as secretaries and as sales clerks in retail trade. Individuals doing unpaid family work were dispersed throughout other white-collar occupations, and a sprinkling may be found in blue-collar and service occupations.

The number of farm laborers declined by half a million between 1960 and 1970 and by a quarter million since 1970. Nevertheless, at 254,000 in 1981, farm laborers ranked the highest among the specific occupations.

The nature of various occupations obviously makes them more or less suitable for unpaid family work. It is more likely that a family member will be called upon to do farm chores or typing than plumbing or carpentry.

Patterns by industry

In general, there was a higher incidence of unpaid family workers in industries with a large number of self-employed workers. Agriculture, for instance, had an extremely high percentage of self-employed workers (almost half), and thus had the largest percentage and number of unpaid family workers.

Trade also had a substantial number of unpaid family workers—about 170,000 in 1981 or one-fourth of all unpaid family workers. Most unpaid family workers were in retail trade, with particularly high concentrations in eating and drinking places, groceries, and gasoline service stations—establishments which had a high number of self-employed workers.

Among the service industries, business and repair services such as automobile repair, personal services such as laundry and cleaning, and professional services such as those of physicians and dentists employed more unpaid family workers than others. The self-employed were also well represented in these industries.

Between 1970 and 1981, the greatest industrial change among unpaid family workers was the decline in agricultural employment as its proportion of the total dropped from 50 to 41 percent, representing a reduction of over 200,000 workers. The construction, manufacturing, and miscellaneous service industries all gained in the percentage of unpaid family workers, although only construction and manufacturing actually added jobs.

Hours worked

Unpaid family workers who put in less than 15 hours a week on the job are classified as not in the labor force rather than as employed.[1] In 1981, there were 130,000 persons in this group—mostly women in nonagricultural jobs.

Although obtaining information on the number of hours worked is important, it may be difficult to remember exactly how many hours were worked if no pay was involved. Reporting by another household member (proxy response) may be even less reliable. Nonetheless, it is worthwhile to compare average hours at work for agricultural and nonagricultural workers by whether they work for wages or salary, or are self-employed, or are unpaid family workers:

	Agriculture	*Nonagriculture*
Wage and salary	40.8	37.7
Self-employed	49.3	40.5
Unpaid family workers ..	39.4	35.8

While unpaid family workers averaged fewer hours than either wage and salary or self-employed workers, the differential was not as large as might be anticipated. Thus, in terms of worker input as measured by time, unpaid family work is not a marginal form of employment but rather a significant contribution to family businesses.

THE ECONOMIC STRUCTURE and labor force trends in recent years would seem to preclude the possibility of an increase in either the number or concentration of unpaid family workers in the foreseeable future. If employment in agriculture continues to decline, unpaid family workers will undoubtedly do the same. This tendency is compounded as farms grow larger, incorporate, and consequently employ more wage and salary workers. Because unpaid family work accounts for less than 1 percent of total employment, the aggregate changes are not of great importance. The real significance is the socioeconomic changes which influence a person to choose this kind of work. ☐

——*FOOTNOTE*——

[1] The number of hours worked is integral to the assignment of a worker to the unpaid family worker category, in that the individual must work 15 or more hours per week to be counted in this group.

Productivity growth average in farm machinery manufacturing

Productivity gains, aided by new technology, especially computers, but moderated by cyclical downturns, averaged 2.6 percent a year over the 1958–80 period

ARTHUR S. HERMAN AND JOHN W. FERRIS

Productivity, as measured by output per employee hour, in farm machinery manufacturing[1] was about the same as the average for all manufacturing industries over the 1958–80 period. Growth was aided by numerically controlled machine tools, automatic welding, computerized manufacturing, industrial robots, and computerized automatic warehouses, but was partially offset by sharp declines in demand. Almost every decline in productivity during the period studied can be associated with a drop in output, which, in turn, usually coincides with downturns in the economy. During the 22-year period, productivity in the farm machinery industry grew at a rate of 2.6 percent a year, compared with 2.7 percent per year for all manufacturing industries; 1.9 percent for construction machinery, an industry which uses similar manufacturing techniques; and 3.2 percent for motor vehicles, another similar industry.

Output, productivity follow farm income

Productivity growth in the farm machinery industry can be divided into three distinct periods. From 1958–65, productivity grew at an annual rate of 1.7 percent; from 1965–74, it accelerated to a 3.3-percent rate; and from 1974–80, slowed to 0.2 percent. (See table 1.) The higher rate of gain during the 1965–74 period can be associated with years of very high output, fueled by dramatic increases in farm income.

Productivity changes in the farm machinery industry are closely tied to output changes over the short term. Demand for farm machinery is based on a number of interrelated factors. A major factor is the overall state of the economy. However, an even more directly related factor is farm income. Changes in the output of farm machinery closely parallel changes in farm income. When farm income is up, farmers tend to purchase new equipment. Among the determinants of income are crop size, both actual and anticipated in the near future, and farm prices. Crop size is, of course, affected by a number of variables, including the weather, farm prices, government policies, and the worldwide food supply. Other important factors affecting the production of farm machinery are farmers' costs, such as for loans, new machinery, land, fertilizers, and pesticides, as well as age and condition of existing equipment and imports and exports of farm equipment.

When income is low and prospects appear poor, farmers tend to make do by repairing, rather than replacing, existing equipment. Conversely, when income is growing and prospects for further expansion of profits appear good, they tend to purchase new, more productive equipment. Demand for machinery increases significantly during these expansive periods, as does productivity.

The impact of the numerous variables affecting demand changes rapidly over time; therefore, output of farm machinery shows wide swings. Productivity, however, moves in a less volatile manner. For example, output grew by 6.3 percent between 1958 and 1959, but

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then dropped precipitously in 1960, a recession year, falling 18.3 percent. Concomitantly, productivity had no growth in 1959 and dropped sharply, by 7.1 percent, in 1960. In 1966, output increased substantially, up 19.4 percent, then declined for 4 consecutive years, one of which was the recession year of 1970. Following output, productivity also grew substantially in 1966, up 6.2 percent, and then dropped sharply, averaging 0.8 percent from 1967 to 1970.

The early 1970's were a period of high output growth, with gains of 16.5 percent in 1972, 21.3 percent in 1973, and 14.3 percent in 1974. This strong growth can be attributed to a sharp increase in farm income resulting, in part, from large exports of farm products, including sales of grain to Russia. Productivity recorded its largest advances during this period, with increases of 8.9 percent in 1971, 9.3 percent in 1972, 5.2 percent in 1973, and 3.6 percent in 1974.

In the more recent period—1980, a recession year—output dropped 15.1 percent, as farm income declined precipitously. In turn, productivity declined 6.7 percent.

A factor affecting output over the long term is the continuously increasing size of farms. The average farm in the United States has shown a significant increase in size, growing about 40 percent in acreage over the period studied.[2] This created a need for an increase in the physical dimensions and horsepower of farm machinery. To cope with the growing acreage, farmers purchased larger, more powerful equipment, rather than increasing their labor force. For example, the average horsepower (PTO) rating of tractors was 106 in 1980, compared with 67 in 1958. Demand for farm equipment has also been enhanced by such equipment as 4-wheel drive tractors, which allow farming in previously marginal areas, and such amenities as air conditioning and stereo radio and cassette equipment in the cabs of the larger units.

Demand for larger, more productive farm machinery has been one factor leading to the industry's long-term growth rate in output of 4.2 percent, somewhat higher than the 3.8 percent for the total manufacturing sector. Highly advanced farm equipment is one of many reasons that productivity has been significantly higher in the farm sector than in the nonfarm sector.

Plants located in Farm Belt

The farm machinery manufacturing industry has paralleled the growth of agriculture in the United States. Some of the larger firms can trace their origins to the development of horse drawn harvesting equipment in the early 1800's. Therefore, farm machinery manufacturing is a mature industry, producing a variety of equipment for both U.S. markets and export.

There were 2,148 establishments in the farm machinery industry as of 1977, a significant increase over the 1,949 establishments reported in 1958. The number of employees per establishment has remained fairly constant, dropping slightly from 74 in 1958 to 70 in 1977 (the average for all manufacturing industries was 53).

Table 1. Output per employee hour and related indexes in the farm machinery equipment industry, 1958–80

[1977 = 100]

Year	Output per hour			Output	Employee hours		
	All employees	Production workers	Nonproduction workers		All employees	Production workers	Nonproduction workers
1958 . . .	65.1	64.9	65.5	49.4	75.9	76.1	75.4
1959 . . .	65.1	63.4	70.3	52.5	80.7	82.8	74.7
1960 . . .	60.5	61.3	58.6	42.9	70.9	70.0	73.2
1961 . . .	62.9	61.3	67.7	45.7	72.7	74.5	67.5
1962 . . .	65.1	65.1	64.8	48.8	75.0	75.0	75.3
1963 . . .	66.6	64.3	74.3	53.7	80.6	83.5	72.3
1964 . . .	70.2	66.9	82.0	60.1	85.6	89.9	73.3
1965 . . .	72.2	68.6	84.8	64.0	88.6	93.3	75.5
1966 . . .	76.7	72.3	92.7	76.4	99.6	105.6	82.4
1967 . . .	76.8	73.3	88.8	73.6	95.8	100.4	82.9
1968 . . .	76.7	75.0	82.1	70.8	92.3	94.4	86.2
1969 . . .	73.8	73.2	75.9	65.8	89.1	89.9	86.7
1970 . . .	75.7	75.2	77.3	65.1	86.0	86.6	84.2
1971 . . .	82.4	83.0	81.0	66.2	80.3	79.8	81.7
1972 . . .	90.1	87.0	99.9	77.1	85.6	88.6	77.2
1973 . . .	94.8	90.7	109.2	93.5	98.6	103.1	85.6
1974 . . .	98.2	92.6	118.3	106.9	108.9	115.4	90.4
1975 . . .	97.7	95.3	105.2	100.0	102.4	104.9	95.1
1976 . . .	101.1	100.5	103.1	98.9	97.8	98.4	95.9
1977 . . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1978 . . .	100.8	100.1	103.1	95.6	94.8	95.5	92.7
1979 . . .	103.2	101.7	108.0	114.7	111.1	112.8	106.2
1980 . . .	96.3	99.6	88.1	97.4	101.1	97.8	110.6
	Average annual rates of change (percent)[1]						
1958–80	2.6	2.7	2.4	4.2	1.5	1.5	1.8
1958–65	1.7	1.0	3.9	3.9	2.2	2.9	([2])
1965–74	3.3	3.4	2.9	3.7	0.5	0.4	0.8
1974–80	0.2	1.2	−2.9	−0.1	−0.3	−1.4	2.9

[1] Based on the least squares trend of the logarithms of the index numbers.

[2] Rate of change is less than 0.05 percent.

The industry has a few very large firms with numerous establishments making a variety of equipment—tractors, combines, and other harvesting equipment, crop sprayers, plows, harrows, planters, cultivators, hay balers, and fertilizing equipment. These firms are highly integrated and manufacture many of the parts that are assembled into the final products, including both gasoline and diesel engines, as well as replacement parts for the older units in operation. The large firms generally produce the larger equipment, such as grain harvesting combines, 4-wheel drive tractors, and accessories. There are numerous medium and small firms in the industry. They usually specialize in a particular line or type of equipment, such as milking, poultry, or irrigation equipment. Many of them serve local markets for highly specialized equipment. The smaller firms also make lawn and garden equipment, such as walk-behind lawnmowers and snowblowers.

Farm machinery manufacturers are concentrated in the Farm Belt, with most plants in midwestern States—Illinois, Wisconsin, Minnesota, Iowa, Nebraska, and

Kansas. Texas and California also have a large number of plants.

The largest export market for U.S. manufacturers is Canada. In turn, Canada provides the largest amount of imports of farm machinery into the United States.

Employment and hours rapidly adjusted

Over the 1958–80 period, the number and hours of production workers and nonproduction workers in the farm machinery industry have grown at similar rates. Production workers increased at an average annual rate of 1.7 percent and their hours grew 1.5 percent. Nonproduction workers grew at rate of 1.7 percent, and their hours increased at a rate of 1.8 percent.

Year-to-year changes in employment and hours in this industry tend to move in a similar but less volatile pattern than changes in output. This indicates that the industry can adjust its hours and employment fairly rapidly to changing demand. For example, when demand is falling overtime usually is cut, the number of shifts worked are reduced, the normal summer shutdowns may be extended, and workers may be laid off.

The extent of the adjustments in hours due to changes in demand is influenced by the occupational makeup of the work force. In the farm machinery industry, the largest occupational group is operatives, most of whom are assemblers. Welders, precision machine operators, punch and stamp machine operators, and transportation operators also are important. These employees, along with laborers (mainly freight handlers) are most affected by reductions in demand. The industry also employs a large group of craftworkers—machinists, mechanics, tool and die makers, and blue-collar supervisors.[3] Craftworkers are least affected by declines in production; because of their skill levels, employers are reluctant to lay them off for fear that they may not be available when demand picks up.

Technology aids productivity

Technological change varies greatly among plants in the farm machinery industry. The more advanced highly sophisticated equipment is used, for the most part, by larger firms engaged in mass production of various products. Slower changes are undertaken by the smaller firms which make short runs of highly specialized products and generally have limited capital.[4]

The level of complexity of farm machinery manufacturing differs greatly depending on the product, which can range from a simple plow pulled by a tractor to a complex self-propelled grain harvesting combine. However, there are factors common to most farm equipment manufacturing: most of the components are made of iron and steel; they are shaped by such processes as casting, cutting, stamping, punching, boring, and machining; and they are joined to form the final product in an assembly operation which uses welding and fastening with air powered tools. Farm machinery is usually finished by painting, either in the parts stage or as a completed unit.

Because of the complex nature of many of the products, the varied manufacturing operations involved in producing units, and the fact that farm machinery manufacturing is a mature industry with many old plants, there are numerous areas that are subject to technological change. The larger companies usually make most of the parts they assemble into the final product. Therefore, the technological innovations they employ cover a range of manufacturing operations and have resulted in significant labor savings.

During the 1960's, capital expenditures per employee for new plant and equipment were consistently below the average for all manufacturing industries. However, because of sustained demand for farm equipment in the early 1970's which strained the industry's capacity,[5] firms began to increase their capital expenditures for new plant and equipment. By 1975, capital expenditures per employee had almost tripled, compared to the level in 1970. This resulted in the installation of advanced manufacturing equipment and large scale plant modernization and probably was one of the factors leading to a higher rate of productivity increase during the 1970's than during the earlier decade.

Computers are among the widespread innovations with significant impact upon the industry. They are used for many functions, including inventory control, data collection, tracking progress of semi-completed products, design, and for numerous accounting and other business purposes. In recent years, computers have been more directly used for manufacturing operations on the factory floor.

Numerically controlled machine tools are used extensively by major companies in the manufacture of the parts used in assembling farm machinery. A recent innovation is computerized numerically controlled machine tools, which are more versatile than standard equipment because they can be programmed for changes by the operator rather than from tapes. One unit installed in a large firm is a completely computer-controlled gear case transfer line, using numerically controlled machine tools, where parts automatically go through 87 machining operations.[6]

One plant is experimenting with a change in machine tool layout, from the traditional setup consisting of banks of individual machines designed for a single operation to cells of machine tools based on workflow. This new layout requires high volume, but has cut bottlenecks in production and has resulted in operating efficiencies.

Automatic welding has replaced manual welding in a number of installations. In addition, industrial robots are being introduced for welding functions, resulting in more versatile automatic welding operations.

Significant efforts have been made to increase efficiency in materials handling and warehousing functions. These functions are very important because of the numerous parts that must be moved, the many operations that must be carried out, and the large size of the factories involved in the manufacture of the more complex farm machines. A number of plants have installed computerized automatic warehousing and materials handling systems. In one plant, such a system is used for the materials receiving warehouse. The system is located in a special high rise building attached to the single story plant. Materials are shipped in using the plant's containers, logged on the computer, and moved automatically to a preassigned location. When needed, they are called for by the computer, which automatically sends a remote controlled sideloader for them, and are sent via conveyor to the location requesting them. This warehouse is run by a single computer operator. The installation of this system resulted in substantial labor savings, while doubling warehouse capacity, because the previously used equipment required numerous forklift operators.

Sideloaders are an important innovation in the industry, even though they require operators. They are narrower and higher than the conventional forklifts which they replace, allowing for increased storage space and versatility in the warehouse. Sideloaders are increasingly being used in semi-automatic computerized high rise warehousing systems installed in a number of plants.

An example of the most advanced technology for assembly line manufacture in the industry is a recently built tractor plant designed specifically for computer control.[7] This plant is unique in that almost all phases of its operations are computer controlled or directed. The plant has high rise computerized automatic warehouses. The parts to be assembled are programmed to move in the correct sequence to produce a finished tractor via conveyor through the various assembly lines. This is a major advance over the system where parts are made in advance and stored until needed, boxes of parts are moved to the assembly line via forklift trucks, and assemblers pick the correct parts out of the boxes to assemble the final product. The new plant uses industrial robots for welding and painting. The robotic painting machines are programmed to move their spray guns to paint the correct part of the tractor chassis as it moves by on the conveyor line. This differs from conventional automatic spray painting equipment, which uses fixed spray guns, in that it more closely approximates a human spray painter. Almost all welds for the frame of the tractor cabs made at this plant are done on an electronically controlled automatic framing buck which is run by a single operator. The assembly lines are set up so that fasteners and other small parts are fed directly to the assemblers at the correct height for their use. This plant's design significantly cuts parts inventory, reduces handling, increases manufacturing efficiency, and results in overall labor savings.

Besides robotic painting, which is just being introduced in the industry, there are a number of other innovations that increase painting efficiency. One system, electrostatic painting, has been used for a number of years. In this process, electrically charged parts move through an automatic paint spray booth, with the paint mist attracted to the charged part. Another innovation is electric dip paint lines, in which charged parts are dipped into a paint-filled tank from which paint is precipitated out on the part. These systems have resulted in savings in both paint and labor.

While the advanced innovations are most readily adapted by the larger multiline companies, smaller firms in the industry tend to introduce new technology more slowly. Many of the latter specialize in a particular product, such as pipeline milking units or self-propelled irrigation systems. Although these units are usually produced from common components (pipes, tanks, spray guns, and pumps), they are generally assembled to fit a particular farmer's need. Because of the semicustom nature of production used by these smaller firms, it is difficult to adapt much of the available new technology which is designed for volume production. In addition, many of the smaller firms are located in rural areas near the farms they serve and do not have the access to the capital markets as do the major companies.

Future trends uncertain

Changes in output and productivity in the farm machinery industry are expected to continue to reflect changes in farm income. In the near future, the outlook for farm income is uncertain. It has been falling since 1979; and currently, there are pressures on farm prices that are expected to slash farm profits. In addition, such factors as high interest rates and high fertilizer and pesticide costs are also expected to reduce farm income. The export market is uncertain, and farm prices are down. This situation could result in a continuation of the recent negative pressure on demand for farm machinery. In addition, technological changes in the near future may be affected by the financial difficulties of a number of the major companies in the industry, which are expected to limit capital expenditures for new plant and equipment.

Over the long term, modernization of plant and equipment is expected to continue in the farm machinery industry, with particular emphasis on labor savings and cost reduction. These changes will be fueled by possible competition with Japan in the market for larger farm equipment, which is presently dominated by U.S. concerns. Japan currently holds a large share of the U.S. market for small tractors.[8] The future will see growing installation of automatic welding equipment and increasing use of industrial robots for welding, painting, and other high volume, difficult operations. Computers will increasingly be used for manufacturing operations and in design functions. ☐

FOOTNOTES

[1] Average annual rates of change are based on the linear least squares trends of the logarithms of the index numbers. The farm machinery and equipment industry is designated industry 352 in the *Standard Industrial Classification Manual, 1972 Edition*, issued by the Office of Management and Budget. The industry comprises establishments primarily engaged in the manufacture of farm machinery and equipment, and garden tractors and lawn and garden equipment. A technical note describing the indexes is available from the Office of Productivity and Technology, Bureau of Labor Statistics, Washington, D.C. 20212. The indexes for this industry will be updated and included in the Bureau of Labor Statistics' annual bulletin, *Productivity Measures for Selected Industries*.

[2] *Statistical Abstract of the United States, 1980* (U.S. Department of Commerce, 1980), p. 686.

[3] *1970 Census of Population, Occupation by Industry*, Vol. PC(2)-7C (U.S. Department of Commerce, 1972), pp. 281–88.

[4] Based on discussions with industry experts.

[5] *U.S. Industrial Outlook, 1974* (U.S. Department of Commerce, 1973), p. 301.

[6] *John Deere Harvester Works* (Deere and Company, 1979), p. 10.

[7] *John Deere Tractor Works* (Deere and Company, 1980), pp. 6–18.

[8] *U.S. Industrial Outlook, 1981* (U.S. Department of Commerce, 1980), p. 260.

APPENDIX: Measurement techniques and limitations

Indexes of output per employee hour measure changes in the relation between the output of an industry and employee hours expended on that output. An index of output per employee hour is derived by dividing an index of output by an index of industry employee hours.

The preferred output index for manufacturing industries would be obtained from data on quantities of the various goods produced by the industry, each weighted (multiplied) by the employee hours required to produce one unit of each good in some specified base period. Thus, those goods which require more labor time to produce are given more importance in the index.

In the absence of adequate physical quantity data, the output index for this industry was constructed by a deflated value technique. The value of shipments of the various product classes were adjusted for price changes by appropriate Producer Price Indexes to derive real output measures. These, in turn, were combined with employee hour weights to derive the overall output measure. These procedures result in a final output index that is conceptually close to the preferred output measure.

Employment and employee hour indexes were derived from data from the Bureau of the Census. Employees and employee hours are each considered homogeneous and additive, and thus do not reflect changes in the qualitative aspects of labor such as skill and experience.

The indexes of output per employee hour do not measure any specific contributions, such as that of labor or capital. Rather, they reflect the joint effect of factors such as changes in technology, capital investment, capacity utilization, plant design and layout, skill and effort of the work force, managerial ability, and labor-management relations.

Hand and edge tools industry experiences slow rise in productivity

During 1958–80, annual productivity growth averaged just 1.3 percent, less than half the rate for manufacturing as a whole; industry employment grew by more than 50 percent

Mary K. Farris and James D. York

Despite the growing do-it-yourself market and the introduction of new technology, productivity growth has been sluggish in the manufacture of wrenches, hammers, axes, files, and other hand and edge tools. During the 23-year period ended in 1980, output per employee hour increased at less than half the annual rate of all manufacturing.

This modest productivity rise in the hand and edge tools industry stems from the very gradual nature of technological improvements. These improvements have been characterized by increases in equipment speed and the continued introduction of automated controls.

As measured by output per employee hour, productivity in the industry grew at an average annual rate of only 1.3 percent during 1958–80, compared with 2.8 percent for all manufacturing.[1] Output increased at a rate of 3.3 percent and employee hours, by 2.0 percent. (See table 1.)

During the period, the industry experienced moderate productivity growth in the early years and a significant slowdown in the later years—a pattern exhibited in general by the manufacturing sector. From 1958 to 1965, output per employee hour increased at an average annual rate of 2.6 percent. Productivity increased in every year except 1960. During 1965–80, productivity growth slowed significantly from the earlier period, advancing at an average rate of only 0.7 percent a year. The average annual output increase slowed to 2.6 percent while employee hours went up by 1.9 percent a year.

This marked falloff in productivity growth in turn reflects developments during two subperiods, 1965–73 and 1973–80, with different growth rates. From 1965 to 1973, productivity grew at an average annual rate of 1.3 percent, and during 1973–80, by 0.5 percent per year. The productivity trend was not steady, however, with both the largest increase and decrease occurring during the earlier subperiod. The largest drop, 6.4 percent, was in 1970, a recessionary year, during which output fell 7.1 percent and employee hours declined 0.7 percent. Both continued to decrease in 1971, but in 1972 the industry experienced a large turnaround; output rose by 17.1 percent, greatly outstripping the rise in employee hours of 9.2 percent. The resulting productivity gain of 7.2 percent was the largest during the study period.

The slow growth during the 1973–80 period reflected in part the 1974–75 recession. In 1974, output per employee hour dropped by 4.8 percent and in 1975, by 3.1 percent. Industry productivity rebounded strongly from the recession, however, rising by 3.9 percent in 1976 and by 2.5 percent in 1977. Productivity gains slowed in 1978 and 1979 as output growth moderated. The increase in 1978 was only 0.6 percent, followed by a rise of 3.7 percent in 1979. In 1980, with the economy experiencing a strong downturn, productivity fell by 5.1 percent.

Employment and plant size

The level of employment in the industry has grown 56 percent since 1958, from 30,300 to 47,200, equivalent

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to an average annual increase of 2.2 percent. Employee hours advanced at an annual rate of 2.0 percent during the period, reflecting a slight decline in average hours per person. The number of production workers increased 53 percent; the share of the total work force accounted for by production workers has remained close to 80 percent.

A trend to larger plant size has resulted in an increase in the average number of employees per establishment. Between 1958 and 1977, the average number of employees per establishment rose from 40 to 65. The number of establishments with 500 employees or more almost tripled during this period, growing from 8 to 22. However, despite the trend to larger plant size, most establishments in the industry remain small. In 1977, 59 percent had fewer than 20 employees, although they only accounted for 5 percent of the shipments. The larger firms (100 employees or more) accounted for 79 percent of industry shipments.

Markets

Automotive distributors, industrial distributors, and consumers constitute the major markets for handtools. The largest group of handtools consists of mechanics' hand service tools, the bulk of which is marketed by automotive jobbers or distributors. Some of these vendors are "wagon peddlers" who sell the tools directly to garages and professional mechanics, providing quality tools and service-oriented marketing. Mechanics' hand tools are a fast growing segment of the industry. Demand is generated from the design changes made by automakers (including the conversion to metric) necessitating the purchase of new tools by the professional mechanic.[2]

Table 1. Productivity and related indexes for hand and edge tools, 1958–80

[1977 = 100]

Year	Output per employee hour	Output	Employee hours	Employees
1958	74.0	47.2	63.8	64.5
1959	79.0	55.0	69.6	67.9
1960	77.0	52.1	67.7	66.2
1961	79.8	55.7	69.8	68.1
1962	81.5	60.8	74.6	71.7
1963	84.0	56.9	67.7	67.0
1964	86.1	61.5	71.4	69.6
1965	91.2	70.2	77.0	75.1
1966	88.8	75.6	85.1	80.9
1967	93.9	73.3	78.1	76.4
1968	95.5	74.4	77.9	76.6
1969	37.2	80.4	82.7	81.1
1970	91.0	74.7	82.1	80.2
1971	94.4	72.7	77.0	75.7
1972	101.2	85.1	84.1	83.6
1973	101.8	92.2	90.6	89.8
1974	96.9	87.1	89.9	89.4
1975	93.9	75.8	80.7	80.9
1976	97.6	85.1	87.2	87.7
1977	100.0	100.0	100.0	100.0
1978	100.6	107.8	107.2	106.8
1979	104.3	112.1	107.5	108.7
1980	99.0	95.5	96.5	100.4
	Average annual rates of change (in percent)			
1958–80	1.3	3.3	2.0	2.2
1975–80	1.4	6.1	4.7	5.2

Distribution to industrial users creates another market for handtools. Demand in this segment generally follows overall economic trends—rising during industrial expansion and slackening during economic downturns. Construction activity also has an impact on sales of handtools, especially heavy forged tools such as sledges and picks.

The burgeoning do-it-yourself market has influenced some domestic producers to orient their product lines toward the household market. Rising interest rates and declining housing starts have generated more remodeling and self-improvement projects which require tools. Expenditures for maintenance and repairs tripled during 1965–79, and construction improvements quadrupled.[3] In the 1970's, some companies redesigned their line of specialized professional tools to provide the amateur with popularly priced, good-quality versions. The proportion of the population in the household-forming years has been increasing, thus providing the industry with a potentially good future market. The do-it-yourself market is somewhat countercyclical, providing some cushion to the companies during economic downturns. Do-it-yourself sales grew 27 percent during the 1974–75 recession.[4]

Competition from imports has been intensifying in recent years and is becoming an increasingly important factor in the domestic market. Imports of all handtools as a percent of new supply (domestic shipments and imports) have increased considerably since 1968, rising from about 6 percent to 11.5 percent in 1979.[5] The export market has declined in relative importance during the last few years. Exports as a percent of domestic product shipments reached a peak during 1974 and 1975, rising to ratios of 15 and 16.2 percent. The ratio has declined steadily since then, falling to 12.4 percent in 1979.

Technological advancement

The hand and edge tools industry produces a wide variety of products ranging from wrenches of all types and sizes to striking tools such as hammers, axes, and sledges. The industry also makes garden equipment such as hoes, rakes, and forks.

Although the basic processes involved in the production of hand and edge tools have changed little over the period, there have been improvements in the equipment and methods used. Many of these changes have been evolutionary in nature and have occurred on an in-house basis, with individual plants developing much of their own equipment to improve productivity. The result has been faster equipment speeds, increasing automation of certain processes, and more rapid materials flow. The introduction of robots by some manufacturers has been part of the effort to achieve more complete mechanization of the production processes. Robots are an integral part of an automated materials handling operation. They are used to help move workpieces to and from forging presses and to and from the forging press dies, and to assist with other operations such as the movement of workpieces to and from the oil quenching process.

One of the most basic processes involved in the production of products requiring a high degree of strength and hardness is forging. The objective of forging is to "hot work" the steel into specific shapes, concentrating the grain structure and fiber formation at the point of greatest shock and stress. This results in the achievement of the utmost strength and toughness inherent in the specific grade of steel that is used. This is especially important for striking tools.

To make hand and edge tools, a steel bar is sheared to the desired length and is then heated in an electric, oil, or gas-fired furnace. The bar is heated to a plastic condition and is then transferred to the forging hammer. Typically, drop forging hammers using closed impression dies perform the actual forging operation. (However, forging presses can also be used.) Intermittent blows of the hammer refine the steel billet or bar through a series of cavities in the die attaining the required shape in the finishing impression. A matched set of dies is used, with the lower die remaining stationary while the upper die vertically strikes the steel bar. Separate die impressions are used for preliminary and final forming operations.

Improvements in the ovens used to heat the metal for the forging operation have contributed to faster production rates. The speed with which these ovens can raise the temperature of the metal to the necessary level has improved, thus reducing the time needed for heating. Improved ovens have also reduced the amount of excess metal that needs to be removed from forged pieces, resulting in less finishing work.

There has been increasing mechanization in the "feeding" of metal to the forging equipment. Correspondingly, the operating speed of the forging equipment has also been improved. It is important that the proper temperature for the particular metal and the specific job be maintained throughout the successive stages of forging. The faster forging equipment has facilitated this and has thus reduced the problems associated with reheating.

In recent years, some plants have adopted horizontal impact forging equipment, which provides a high degree of automation. The piece of metal being worked is moved along by an electrically controlled manipulator. The dies, which are attached to pneumatically powered rams, act on the metal pieces horizontally as they shape them. The pieces are automatically moved from impression to impression within the die as successive stages of forging are carried out. The automatic control of the dies and the movement of the workpieces results in reduced labor requirements.

After forging is completed, a trimmer press may be used to remove the excess (flash) metal squeezed out by the impact pressure. Grinding and polishing operations may subsequently be performed on the forged piece of metal. Improvements in grinding and polishing equipment have also contributed to productivity gains; both procedures were formerly done with hand-fed and hand-held equipment. However, manufacturers have increasingly been adopting equipment which permits these operations to be performed on a continuous flow basis. Further reduction in the time required for grinding and polishing has been achieved through redesign of the product to reduce the surfaces which need to be worked on.

Heat treating of the forged pieces is frequently performed for various reasons such as achieving a more uniform grain structure, relieving stresses, hardening the surface, and increasing the ease of machining. Improvements in heat treating ovens, including better controls, have aided productivity. Increasing automation in heat treating has reduced the operators' work in this process.

The adoption of cold forming techniques is also aiding productivity. In the cold forming process, dies are still used to give the workpieces their final shape. However, advancements in the feeding mechanisms permit preforming of the pieces to such an extent that they can enter the dies without the usual need for heating. This technique is becoming increasingly popular, especially in the production of mechanics' hand tools.

Some manufacturers have achieved additional efficiencies through the use of edge hardening equipment. For items whose strength requirements are primarily limited to edge strength, such as hedge shears, this can mean faster production because the hardening of the workpiece is concentrated only on critical edges versus the whole piece.

Efficiencies have also occurred in the broaching operation, which is the metal cutting process that enlarges or changes the contour of the tool openings (for example, wrench openings). The increased use of manipulators, which control point-to-point movement of workpieces, has reduced the work performed by operators.

Computers have encouraged productivity growth in several ways. In addition to helping with administrative functions such as payroll and inventory, the computer has proven valuable for production planning. Its use enables many of the activities involved in daily production operations to be scheduled more efficiently. Computers also aid in coordinating the setup of production lines and the scheduling of die changes and downtime. This contributes to better utilization of die shops and other related in-house functions.

The outlook

Productivity should benefit from continued mechanization of production processes and gradual improvements in equipment. Continued introduction of robots and the increasing adoption of cold forming techniques should be contributing factors, as will the expanded use of computer technology.

Horizontal impact forging equipment may be a factor in future productivity increases as more plants adopt this technology, especially where long production runs are involved. The cost and setup time associated with this equipment, however, may hinder its adoption. The demand for industry output has benefited from growth in the do-it-yourself market and demographic factors suggest that this trend could continue. However, competition from imports, as measured by the import penetration ratio, has been increasing—as a percent of new supply they rose from 7.5 percent in 1975 to 11.5 percent in 1979. ☐

APPENDIX: Measurement techniques and limitations

Indexes of output per employee hour measure changes in the relation between the output of an industry and employee hours expended on that output. An index of output per employee hour is derived by dividing an index of output by an index of industry employee hours.

The preferred output index for manufacturing industries would be obtained from data on quantities of the various goods produced by the industry, each weighted (multiplied) by the employee hours required to produce one unit of each good in some specified base period. Thus, those goods which require more labor time to produce are given more importance in the index.

In the absence of adequate physical quantity data, the output index for this industry was constructed using a deflated value technique. The value of shipments of the various product classes were adjusted for price changes by appropriate Producer Price Indexes to derive real output measures. These, in turn, were combined with employee-hour weights to derive the overall output measure. The result is a final output index that is conceptually close to the preferred output measure.

Employment and employee-hour indexes were derived from data published by the Bureau of the Census because BLS data were not available. Employees and employee hours are each considered homogeneous and additive, and thus do not reflect changes in the qualitative aspects of labor, such as skill and experience.

The indexes of output per employee hour do not measure any specific contributions, such as that of labor or capital. Rather, they reflect the joint effect of factors such as changes in technology, capital investment, capacity utilization, plant design and layout, skill and effort of the work force, managerial ability, and labor-management relations.

FOOTNOTES

[1] The hand and edge tool industry is composed of establishments primarily engaged in the manufacture of files and other hand and edge tools for metalworking, woodworking, and general maintenance. The industry is designated as SIC 3423 in the *Standard Industrial Classification Manual, 1972*. Establishments primarily engaged in the manufacture of saws are classified in industry 3425 and power-driven hand tools in 3546. All average annual rates of change are based on the linear least squares trends of the logarithms of the index numbers. Extension of the indexes will appear in the annual BLS Bulletin, *Productivity Measures for Selected Industries*.

[2] See Kathleen Wiegner, "Quality Still Matters," *Forbes*, Aug. 21, 1978, pp. 114–15.

[3] *Residential Alterations and Repairs*, Construction Reports C50 (Bureau of the Census).

[4] "Stanley Works: Capitalizing on the homeowner do-it-yourself trend," *Business Week*, Feb. 26, 1979, pp. 125–26.

[5] The import penetration ratio is calculated by dividing the value of shipments of imports by the value of new supply, where new supply is defined as the sum of the value of imports and domestic product shipments.

A Review Essay

The productivity puzzle: numbers alone won't solve it

From vantage points in management, labor, academia, and government, contributors to four recent books grapple with the productivity slowdown, with little help from economic theory

PAUL S. ADLER

Over the last two decades, there has been a major decline in the rate of growth in U.S. productivity. The lag in the ratio of output to input has also occurred in many other industrial countries, including Japan.

Orthodox economic theory hypothesizes a basically technical link between trends in output and input, namely, the production function. This hypothesis has been put to a severe test, for the precise extent, the origins, and the significance of the productivity slowdown are yet to be analyzed with a clarity that would demonstrate the usefulness of traditional economics in analyzing such problems.

There is, in particular, a surprising contrast between the wealth of studies that attempt to quantify the decline and calculate its causes, and the poverty of material on the role played by such a lag in macroeconomic performance. It should be remembered that, in general, at a company and an industry level, labor productivity and profitability are *not* well correlated, and that in capitalist economies decisions are based on the latter, *not* the former. Paul Samuelson's neoclassical paradigm claims its originality in the capacity to link the two factors, in a synthesis of micro- and macro-economics. But so far, this approach has not shed light on the most elementary part of the productivity puzzle: Is the productivity slowdown basically a cause or an effect of current economic problems?

Research on productivity thus progresses somewhat unevenly. Three foci of study have emerged: data analysis, study of management practices, and research into labor relations and conditions. *Productivity: Prospects for Growth*, edited by Jerome Rosow, deals with all three subjects. The interdependence of the three themes makes this presentation most judicious. Three other recent books have also addressed one or other of these matters. Before discussing the major issues, we will identify the overlapping concerns of the four volumes.

Productivity: Prospects for Growth includes five contributions to the task of data analysis. Solomon Fabricant of New York University and Dale Jorgenson of Harvard University present the growth accounting data, Jerome Mark of the Bureau of Labor Statistics, the measurement consideration, and Howard Samuel and Rudy Oswald of the AFL-CIO, their views on the role of foreign trade and labor unions.

The reader seeking more detail on current data analysis methods can consult *Aggregate and Industry-Level*

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Productivity Analysis, edited by Ali Dogramaci and Nabil R. Adam, both of Rutgers University; this is the second volume of the Studies in Productivity Analysis series. Two papers address methodology: that by Ephraim Sudit of Rutgers University and Nachum Finger of Ben Gurion University presents a general survey and that by Douglas Moon of Columbia University, the dynamic input/output model. The formidable problems posed by time-series analysis are discussed by Lawrence Cohen of Columbia University and Salin Neftci of Boston College. Tom Boucher of Cornell University assesses technical change; J. R. Norsworthy and Michael Harper of the Bureau of Labor Statistics consider capital formation, and Frank Gollop of Boston College and Mark Roberts of Pennsylvania State University analyze imported intermediate inputs.

The next theme, management, is examined in *Productivity: Prospects for Growth* by John Donnelly, who discusses the role of the chief executive, and by Alfred Neal, former president of the Committee for Economic Development, who analyzes the role of the tax system. Exploring technological change at the corporate level are Reginald Jones, chairman of General Electric, John Diebold, chairman of the Diebold Group, Thomas Donahue, secretary-treasurer of the AFL–CIO, and Robert Ranftl of Hughes Aircraft Corp.

The problems of productivity management are also the theme of papers edited by Vernon M. Buehler and Y. Krishna Shetty, both of Utah State University, in *Productivity Improvement: Case Studies of Proven Practice*. Represented are 11 companies and three unions. Contributors also include Murray Weidenbaum, former chairman of the Council of Economic Advisers, and Clement Preiwisch of the General Accounting Office.

The last theme, dealing with labor, is discussed in *Productivity: Prospects for Growth* from four perspectives. Rosow of the Work in America Institute surveys the problems associated with the various "human factors" and discusses their possible remedies. Writing on worker participation are Stephen Fuller, vice president of General Motors, Douglas Fraser, president of the United Auto Workers, and Wayne Horvitz, director of the Federal Mediation and Conciliation Service.

These problems are given more theoretical treatment in Stephen Hill's *Competition and Control at Work: The New Industrial Sociology*, the fruit of his teaching at the London School of Economics.

The four books incorporate some of the most advanced thinking in this, somewhat fragmented, area of research. Our review will thus attempt to assess some of the strengths and weaknesses of the state of the art. The first two sections will deal with conceptual and analytical problems and will therefore consider the contributions of the Rosow volume and Dogramaci and Adam collection. The following two sections will cover the management and labor aspects, as they are discussed in Buehler and Shetty, Hill, and the other chapters of Rosow. In a concluding section, we sketch some alternative lines of research.

The conceptual problems of data analysis

The literature on the productivity problem shows little patience with the troublesome theoretical problems of economics. These books are no exception. Fabricant's overview gives theory scant attention; Mark's discussion of measurement problems includes an extensive survey of the reliability of our data, but from an exclusively pragmatic point of view. Sudit's discussion of methodological issues is broad-ranging but makes no effort to draw any conclusions concerning the value of the empirical work that is founded on fragile hypotheses. Most of his fellow contributors to the Dogramaci/Adam collection, concentrating on empirical industry-level and time-series analysis, struggle with the practical difficulties associated with these problems without the benefit of a viable theoretical framework. Not surprisingly, such studies are principally of interest to the professional student of productivity.

Two theoretical problems in particular would seem to merit discussion. Productivity analyses inspired by the neoclassical paradigm attempt to quantify the contribution of each factor of production to output growth. The productivity growth that cannot thus be explained, called the residual, has been attributed to technical change. Growth is thus decomposed into movements *along* a production function (representing a certain technology), and shifts *of* the production function (indicative of a change in technology). If this sounds plausible for small, marginal changes, Nelson[1] has already drawn attention to the absurdity of the attempt to extrapolate the procedure to major changes such as we have witnessed over the postwar period.

The second question warranting additional research takes us further back, into the great "Capital Debate" between Cambridge (U.S.) and Cambridge (U.K.). The conclusion was that the neoclassical attempt to base a theory of distribution on the theory of production was fatally flawed: even under competitive equilibrium conditions, the remuneration of capital is not determined by its marginal productivity, because the definition of a quantity of capital presupposes determination of the distributional variable. This conclusion vitiates much of the growth accounting exercise, because the calculation of a stock of plant and equipment—at first sight purely physical entities—involves a nontechnical factor like the rate of return. Multifactor productivity studies, however, continue to calculate a stock of capital (or a flow of capital services) by virtue, as C. E. Ferguson put it, of an "act of faith": "The question that confronts us is not whether the [British] Cambridge Criticism is theoretically valid. It is. Rather the question is an empirical or econometric one: is there sufficient substitutability within the system to establish neoclassical results? . . . Until the econometricians have the answer for us, placing reliance upon neoclassical economic theory is a matter of faith."[2] It is somewhat disconcerting to find the current productivity research pursued as if the Cambridge U.K. school had never existed.

Some relief from these attacks on the very legitimacy of growth accounting models may be forthcoming from the sophistication of more recent econometric techniques. Much of the capital debate concerned the circularity of reasoning in the neoclassical theory, attacking its explanatory power, but perhaps not its descriptive power. To our knowledge, however, none of the partisans of the growth accounting techniques has made this case. Most of the technical debates to date—for example, those surrounding the replacement of Laspeyres and Paasche indexes by Divisia indexes—are by comparison of limited import.

The basic problem posed by such theoretical interrogations concerns the usefulness of the neoclassical paradigm for dynamic analysis in conditions of real-world complexity. As Joan Robinson has written,[3] there is something inherently wrongheaded in trying "to find out from the record of what actually happened, what growth of output *would have been* if the value of capital had grown as much as it did without any technical progress having taken place." The value for long-term analysis of the distinction between shifts of and along a production function seems at best extremely limited.

The concrete problems of a choice of productivity indicators are thus posed against a backdrop of vast theoretical disputes; and the latter permeate the former. The usefulness of multifactor indexes, on the one hand, in attempting to define quantities of the different inputs, is limited by the need to assume that factors are remunerated at their marginal product. If this assumption is of dubious legitimacy for capital, the case of labor is not simple either. Obviously, different qualities of labor have different productive potentials; but it is much less clear that relative pay reflects these differences.

The use of simple labor productivity indexes, on the other hand, is theoretically uncontroversial. But their use does little to reduce the productivity puzzle to its purely quantitative dimension. The substitution of capital for labor must be somehow incorporated into the analysis. Relying on labor productivity, therefore, supposes the development of a model of accumulation, which the neoclassicists thought they had provided.

Beyond these properly economic disputes, there is also confusion over broader issues.

Measures of output, including those of the Bureau of Labor Statistics, are often approximate, especially in the many industries with no clearly defined products or quality range. In an extreme case, that of the computer equipment industry, the difficulty of the task of measuring quality change has led to total capitulation, and the price deflator is conventionally set at 1, as if there had been no qualitative improvement at all since the birth of the computer industry. Some, not implausible, estimates of quality changes in this industry can be shown to boost output measures so much that the productivity lag for manufacturing disappears entirely.[4]

The rapid development of the service sector aggravates this problem. It is remarkable that as we narrow our focus from GNP, to private business sector output, and further to manufacturing output, the productivity slowdown appears progressively less dramatic. This seems perhaps normal, when one contrasts automation trends in manufacturing with those of service industries like shoe-shining. But the image of a technically backward service sector is belied by the example of computerization in telecommunications, banking, and insurance.

Two hypotheses thus compete in explaining the difference between the roles of manufacturing and services in the productivity slowdown. The first is that we mismeasure and underestimate service output; pushed far enough, this hypothesis could lead to the argument that there has been no serious productivity lag. Against such skeptics, it can, however, be shown that in the manufacturing sector, too, and in particular in many industries where measurement problems are least important, there seems to have been a significant productivity slowdown. The second hypothesis reverses the perspective, to emphasize the collapse of the service sector's apparent productivity. Could this reflect a real breakdown

Books reviewed

Jerome Rosow, ed., *Productivity: Prospects for Growth.* New York, Van Nostrand Reinhold, Work in America Series, 1981, 340 pp. $19.00.

Ali Dogramaci and Nabil R. Adam, eds., *Aggregate and Industry-Level Productivity Analysis.* (Volume 2 of Studies in Productivity Analysis.) Hingham, Mass., Martinus Nijhoff, 1981, 195 pp. $25.00

Vernon M. Buehler and Y. Krishna Shetty, eds., *Productivity Improvement: Case Studies of Proven Practice.* New York, AMACOM, American Management Associations, Inc., 1981, 273 pp. $19.95.

Stephen Hill, *Competition and Control at Work: The New Industrial Sociology.* Cambridge, Mass., Massachusetts Institute of Technology Press, 1981, 280 pp. $25.00 cloth, $9.95 paper.

in the efficiency with which this sector performs its mediating and informational functions? Unfortunately, little research has been conducted on the industrial dynamics of these functions.[5]

Deeper conceptual problems are not absent here either: how should we treat nonmarket goods? Pollution control expenses are commonly included in the cost side of production, but are difficult to include in the output side as, for example, clean air. Do market prices bear sufficient relation to utility to justify our reliance on them for evaluating economic performance? There is a venerable tradition of rejecting output (and therefore productivity) statistics as irrelevant to real welfare. The rub, of course, is that even if the data reflect the specifically market forms of welfare calculation, it is such calculations which orient real-world decisions. As limited as these measures are, they therefore have a key role to play in analysis.

The Rosow and Dogramaci/Adam volumes give these problems but scant attention.

Looking for scapegoats

Beyond the conceptual and measurement difficulties, there has nevertheless probably been a fall in labor productivity growth rates. This deceleration is sufficiently important in a large enough range of indicators, both aggregate and industry level, to overcome most skepticism. Do we have an explanation for it?

In the aggregate data, the slowdown is particularly dramatic since 1973. In the total factor productivity framework, this shows up as a precipitous decline in the main factor contributing to growth, the residual. This fact alone should be sufficient to show that Edward F. Denison's interpretation of the residual as primarily reflecting advances in knowledge cannot be sustained.[6] Whatever slowdown one may imagine taking place in research and development, the accumulation of knowledge can hardly be imagined to have braked so suddenly.

A first hypothesis might be that companies today treat labor as a quasi-fixed factor, and that therefore the adjustment of employment to production is slower than it used to be. This has been verified statistically, and many of the contributors to the Buehler/Shetty volume claim that increased labor flexibility is the key to increasing corporate profitability. While this may explain a certain (downside) volatility of productivity ratios over the shorter period, the question remains as to why the slowdown persists.

Indeed, the U.S. debate has been characterized by a great resistance to the idea that the recent recessionary trends could be other than purely cyclical or exogenously generated. Jorgenson,[7] in *Productivity: Prospects for Growth* and elsewhere, develops the exogeneity thesis, arguing for the importance of energy prices in explaining the slowdown. The data are far from showing this; but, above all, one would want to ask: why have the major economies proved themselves to be so incapable of surmounting such a handicap? The vigor of the upturns in GNP growth since 1973 has slowed recognition in this country that the long-term growth path has been shifted downward.

Under the title "Free the Fortune 500," Weidenbaum presents the now-classic case for assigning the role of chief culprit to government regulation. No statistics, and certainly not Denison's, have been advanced to substantiate his claim. The text is a candidly ideological manifesto that gives the reader a glimpse into the mind set of the recently resigned head of the Council of Economic Advisers.

The most serious candidate for blame is capital formation—the object of a study by Norsworthy and Harper in *Aggregate and Industry-Level Productivity Analysis*. The proportion of GNP going to investment has been remarkably stable over the last decade, but as GNP growth has slowed, so has capital formation. Other data in this contribution indicate that the price of capital services sharply accelerated from 1973, almost reaching the rate of increase in hourly labor compensation. The combination of higher interest rates, massive increases in the labor force owing to the arrival of the baby-boom generation and to the "mobilization" of women, as well as more direct pressure on real wage levels, may have thus led to such a cheapening of labor relative to capital as to slow the substitution of the latter for the former.[8] The principal difficulty with these explanations of the productivity slowdown is that the reduction in investment *flows* only marginally affects the "productivity" of the *stock* of capital. A further hypothesis is explored by Alfred Neal in *Productivity: Prospects for Growth*; he blames "excessive" taxation for insufficient investment. The argument is weakened by the ubiquity of the slowdown in countries with widely different taxation trends. Energy costs have also been incriminated, their rise rendering redundant a certain fraction of the capital stock because of energy/equipment complementarities.

Any or all of these factors may have played a role, but a key lesson from John Maynard Keynes seems to have been forgotten: the "animal spirits" of the investor will surmount many such obstacles if the weather forecasts for the business climate are good.[9] In particular, that somewhat tired old culprit, deficiency in savings, cannot constitute a real brake in a modern economy in which investment is financed on a credit-based, forward-contract system. If business prospects are good, low levels of retained corporate earnings will be supplemented by extra external finance, and a lack of deposits in the lending institutions will be overcome by money-creating credit.

The problem would thus appear to be systemic rather than localized. Any particular difficulty can be surmounted, and, often, transformed into a stimulus. The search for the origin of, and the cure for, the productivity "problem" has therefore recently turned to management and labor, the major actors in a socioeconomic system, the dynamism of which may be faltering.

The role of management

The link between productivity and management is difficult to establish because product change and marketing flexibility are often more direct determinants of commercial survival and success than the technical efficiency with which a firm produces a hypothetically stable product. Accordingly, management itself tracks profitability rather than the more abstract notion of productivity.

The second part of Productivity: Prospects for Growth discusses a number of management problems related to the productivity issue. The principal area of analysis is the dynamism of technological change in the firm. Diebold sketches the (well known and still) fascinating account of the Office of Tomorrow, with a refreshingly pragmatic touch as to the limits both of the current technology and above all of its impact on office-work productivity. This contribution is valuable in reminding us that the availability of new technologies does not guarantee their rapid implementation—the delays are often measured in decades. Furthermore, implementation does not guarantee improvement of the standard productivity indexes, for new technologies create new tasks.

Other contributions include a disappointingly low-key union assessment of technological trends by Donahue, somewhat in contrast with the more thought-provoking piece by Oswald, AFL-CIO research director, on the general productivity question. The contribution of John Donnelly, the chairman of Donnelly Mirrors, Inc., is useful in outlining one manager's perception of the importance of practical labor-management cooperation in the framework of a Scanlon Plan.

This latter approach to labor, seeking to transform the presence of unions from a handicap into an advantage for corporate competitiveness, is in sad contrast to the approaches outlined in the case study volume published by AMACOM (a division of American Management Associations). The reader cannot but be impressed by the presence of such important companies as Kaiser Aluminum and Chemicals, Hughes Aircraft, and Burger King, even if the papers themselves are disappointingly short and lacking in detail. The message is basically that productivity demands more Taylorism, more control, more incentive pay schemes, and a small dose of Japanese-style Quality Circles. The last are designed to capitalize on workers' intimate knowledge of the production process. The Quality Circle view, in contrast to the "quality of worklife" philosophy to which Rosow and others allude, excludes any commitment to real cooperation in which the gains of labor would not be premised on the *prior* increase of company profits.

Some cracks do, nevertheless, appear in the management orthodoxy. Nucor Corp. insists on the importance of job security and has implemented group bonus schemes that include foremen and maintenance crew. Crompton Co., Inc., has instituted a 36-hour, 3-day workweek paid 40 hours. Hughes Aircraft declares its commitment to designing "meaningful" jobs by enlarging the range of tasks.

The union contributions by Cass Alvin of the AFL–CIO echo somewhat alone in this landscape. The conservatism of his interlocutors would indeed seem to constitute a major handicap in putting the United States back onto the map of innovative entrepreneurship. Abernathy, Clarke, Hayes, and Kantrow[10] have recently launched a major critique of this conservatism. They attribute the decline in the relative strength of U.S. companies to the short-term, bottom-line myopia of corporate decisionmaking. Overemphasis on quarterly and annual results, according to the Harvard authors, cripples American corporations' capacity for long-term technological programming. Symptomatic of the disease is the U.S. managers' tendency, perfectly explicit in the case studies, and above all in the "Free the Fortune 500" contribution, to interpret every constraint on their prerogatives as an intolerable shackle on individual creativity. Whence the paradox: in the United States, where Government intervention and unions are smaller and weaker than in most other developed countries, the blame attributed to Government and unions in causing the current crisis is greatest.

The difficulty, of course, with this critique of management, is that in less expert hands it can easily slide into the same "blame the victim" mode that constitutes one of management's own shortcomings. Can one sustain the argument that the current economic woes of the United States are principally due to a particularly incompetent group of managers? Is not their myopia the most rational programming strategy in a period of great uncertainty? Is it not the flip side of the flexibility of operations that European managers so envy? Is not long-term technological programming vastly easier for those in second place who are imitating the frontrunner?[11]

Alternatively, one could perhaps hypothesize that the cyclical characteristics of capitalist growth can be dampened in the shorter term but not eliminated. The problem is thus rephrased: in the current worldwide recessionary climate the only way to limit the cost of the market system's congenital myopia is by aligning short- and long-term prospects. Such a reconnection implies a stabilization of macroeconomic conditions. Because markets are in themselves unable to provide such stability, capitalist growth seems to necessitate its imposition by non-market forces, via the further institutionalization of social consensus and conflict-resolution mechanisms.

The role of labor

The frequency with which incentive pay schemes are mentioned by the contributors to the case studies is perhaps not to be simply attributed to the blame-the-victim syndrome. Assuring the cooperation of labor is a major permanent task; poor labor relations can be very costly in terms of excess supervisory personnel, of under-performance of workers, of underutilization of plant, and of lack of product quality and timeliness. If these costs are less important than those associated with a deficit of technical and organizational adaptation, they are by no means negligible.

Stephen Hill's book presents a valuable framework for the analysis of these problems. Written from an English perspective, but with a solid grasp of U.S. developments, its dual reference to Max Weber and to a context where class conflict is manifest could prove a tonic for a U.S. audience. Especially in the current period when labor leaders have rediscovered the pertinence of a "class war" rhetoric.

U.S. industrial sociology has been dominated by a Durkheimian perspective which privileges the reproduction of a community of values. The absence of consensus thus constitutes the horizon of much social thinking: conflict is ever present but always on the horizon, beyond theoretical grasp. This approach contrasts with that of Weber, for whom the conflict of interests is the starting point of social analysis.

The fundamental hypothesis of Hill's work is that antagonistic interests compete within the firm. This conflict is not just over income distribution, but also over power, and in particular allocative power on the shop floor (work rules, staffing patterns and levels, work intensity, and so on). The fact that U.S. unions are seen as having de-emphasized allocative struggles in exchange for concessions in income distribution should not, in Hill's view, be interpreted as implying that shop-floor conflicts can be relegated to the status of a problem of maintaining consensus within the unions. The basic separation of ownership or control and productive activity—as opposed to their unity in a cooperative system—makes competition and conflict primary, if not permanent, features of the capitalist firm.

Hill's Weberianism is not the diluted version to which U.S. audiences are accustomed. Power within the capitalist firm is inexorably asymmetrical. The wage relation is a power relation, not just a "contract," because the worker, while free not to enter this or that *particular* employment contract, must enter *some* contract on pain of distressing unemployment. (Milton Friedman's identification of Capitalism and Freedom rests on obscuring the general constraint in order to vaunt the freedom of its particularity.)

This leads to an interesting if somewhat fragmented discussion of Taylorism that contrasts favorably with what one often finds in the U.S. literature. Hill follows much of the recent research which characterizes Taylorism as an expression of this asymmetry in the labor process: management control over the immediate labor process is gained at the expense of craft-type worker autonomy. But he tempers this account by a discussion of the limits of Taylorism: its partial adoption in management circles, the resistance of workers to its effects, and, most importantly, the fact that the production process always necessitates some degree of cooperation—even within the framework of conflict.

The conflictuality of labor-management relations is, in this perspective, somewhat independent of the degree of institutionalization taken by the forms of its resolution. By contrast, U.S. discussion of quality of worklife programs seems hampered by the assumption that *cooperative* and *adversarial* relations can and should be two totally distinct modes of labor-management interaction. It is as if an overly consensual (and individualist) ideology blocked recognition by management and by unions that plant-level conflict was healthy and that cooperative moments *within* this conflictual relation were perfectly normal. Whence a fruitless polarization between the cynics and the naive.

The import of such research for the productivity puzzle is considerable, for many discussants locate the root of productivity decline in shop-floor tensions. The value of Hill's work is to remind such "radicals"—who appear at all points of the political spectrum—that growth in capitalist economies is not a zero-sum game. Workers' gains are not simply capitalists' losses, because in the longer run such gains are one of the most potent stimuli to technical change and hence to productivity growth. Whether worker resistance plays this role depends on the dynamism of the system.

The dynamism of socioeconomic systems

The productivity puzzle is a valuable indicator of the current state of economics, reflecting this discipline's difficulties—theoretical, quantitative, historical, and sociological. Richard Nelson has drawn the uncomplimentary parallel with the drunk looking for his lost watch under the lamp post "because that's where the light is." But why is the economics profession tipsy? Part of the reason may be its excessive focus on formulating policy recommendations, an objective not always conducive to major theoretical research.

The role played by this policy focus might, however, shift from debilitating to revivifying. The urgent need for vigorous policy remedies to current economic problems will not, we believe, be satisfied by a reliance on the automaticity of market adjustments. The demand for serious policy may thus, indirectly, become a stimulus for the revival of those theoretical trends that have for too long been relegated to the margins of economic theory: the heterodoxies of institutionalist and "fundamentalist" Keynesian theories.

The most fruitful areas of research may be at the intersection of Joseph Schumpeter and Nelson, in its proximity with that developed by certain French researchers[12] along the lines suggested by Michel Aglietta.[13] It would associate the analysis of macroeconomics to that of social institutions, going beyond the neoclassical, market-centered model by breaking with its implicit assumption that real developments, such as a productivity slowdown, can be accounted for by the juxtaposition of purely exogenous shocks and the spontaneous equilibrating market mechanism.

Market mechanisms need to be integrated into a historical model that explains their (always limited) pertinence to any given epoch. Periods of economic history are thus distinguished according to their money-creation regimes, wage-setting institutions, price determination mechanisms, and international trade hierarchies. The coherence of these social forms with the dominant macroeconomic relations of productivity and income growth—"deepening" or "widening" modes of accumulation—assures a harmonious balance in the expansion of output and demand; their incoherence generates a protracted, Kondratieff-like period of instability.

Periods of coherence naturally exhaust their dynamism. Tensions accumulate. The diffusion of finite sets of organizational and technological innovations reaches higher plateaus. Virtuous circles become vicious. No meta-auctioneer guarantees the timely replacement of failing system-stabilizers.

In such a perspective, the downward shift in growth paths, of which the productivity deceleration is but a symptom, is attributable neither to a single cause nor the accidental conjunction of several causes. Longer downswings are part of our economic history, as the system exhausts and then recreates the social-structural conditions of accumulation.

Economic history, the real history of cycles, short and long, of accumulation and crashes, is made in the interstices of "economics" as Academia currently imagines it. At least, such might be the lesson of the productivity puzzle. □

—— FOOTNOTES ——

[1] Richard R. Nelson, "Research on productivity growth and productivity differences: dead ends and new departures," *Journal of Economic Literature*, September 1981, pp. 1029–64.

[2] C. E. Ferguson, *The Neoclassical Theory of Production and Distribution* (London and New York, Cambridge U.P., 1969).

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How Sweden combats unemployment among young and older workers

Joblessness among the 16- to 24-year-olds and those 45 years and over in Sweden, although low by American standards, worsened during the recessions of the 1970's; government responded with innovative policies to increase job prospects for these groups

HELEN GINSBURG

The Swedish Government Bill of 1966, which forms the basis of labor market guidelines, states that its aim is to "achieve and maintain full, productive and freely chosen employment." Although unemployment only averaged about 2 percent in the 1970's, that goal has not yet been attained for all young people, women, immigrants, older workers, and the disabled. The proportion who are unemployed in these groups is small by American standards, but not by Swedish standards. One of the major challenges of Swedish society, with its strong commitment to full employment, is to provide jobs for these workers. This article discusses some of the policies Sweden uses to contend with unemployment among its young (16 to 24 years) and older (45 years and over) workers.

Causes of youth unemployment

As recently as the mid-1960's, jobs were plentiful for most Swedish youngsters, regardless of whether they had only completed the 9-year comprehensive school (which is compulsory for 7- to 16-year-olds), upper secondary school (which follows), or had graduated from a university.[1]

In the 1970's, job prospects became less promising. Sweden's first recession of the 1970's, starting in 1971, drove the annual unemployment rate up to 2.5 percent and slightly higher for several consecutive years. Youth were hard hit. Since then, unemployment rates of 7 and 8 percent have been common for 16- to 19-year-olds (reaching 9 percent in 1981), as have rates of 3 to 5 percent for 20- to 24-year-olds. (See table 1.) Myriad factors affected the rise of youth employment. For example, apprenticeships practically disappeared and most companies that once provided on-the-job training for youngsters no longer did so because many already received training in the secondary schools. In the 1970's, manufacturing employment stagnated as a result of productivity gains that reduced labor requirements, recessions, structural problems that beset important export industries, and the tendency of Swedish transnational corporations to locate more manufacturing jobs abroad. Thus, many blue-collar jobs that might have been available to youngsters disappeared. Gone, too, were other jobs—such as delivering packages—that once gave some employment in small businesses. Most job creation was in the public sector, but some fast growing areas—for example, hospitals—were often out of bounds for persons under 18 years because they cannot

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work at night, drive vehicles, or do other unsuitable work. And in some cases, housewives, who entered the labor force in large numbers, were hired in preference to the young.

In slack labor markets, lack of experience became a more important barrier to employment for young workers, and employers often claimed that wages for youths were too high.[2] Unlike the United States, Sweden has no minimum wage law, but the negotiated contracts that set most wages allow youths to earn less than adults. Partly as a result of the wage solidarity principle of the Swedish Trade Union Confederation (LO), to which most blue-collar workers belong, the youth to adult wage differential narrowed in the 1970's. (The aim of this policy is to reduce wage differentials in accordance with the rule of equal pay for equal work, regardless of the profitability of the firm.) However, the narrowing of the youth to adult differential has been occurring for three decades and some of it reflects the higher average age of young workers resulting from longer schooling. To the extent that this is a factor, subsidies that reduce the cost to the employer of hiring the young have been used in preference to lowering the differential. Swedish unions present no barriers to employment of the young —anyone who is hired is accepted as a member.

Some employers contend that employment security laws caused the youth unemployment problem. However, youth unemployment worsened before the advent of these laws, although employers may now be more reluctant to hire any workers but those perceived as "prime." Interestingly, the law permits hiring for a probationary period if sanctioned by a collective bargaining contract, which usually is the case. Also many firms had "no hiring" policies in effect at times during the 1970's, especially in the middle of the decade.[3] These policies hurt new labor market entrants. And, with many policies aimed at maintaining employment, recovery from a recession often meant that some additional demand for labor could be met without additional hiring.

In the early 1970's, about 70 percent of Swedish comprehensive school graduates went directly to upper secondary school, and that figure was about 85 percent by the end of the decade.[4] Secondary schools in Sweden are more specialized and more vocationally-oriented than those in the United States. There are more than 20 lines or courses of study that last from 2 to 4 years. Lines are practical or theoretical (academic) and designed to prepare a student for further education, although some higher education is now also open to those who study practical lines.[5] Youngsters from lower socioeconomic backgrounds are more likely to either take shorter, more practical courses and to drop out along the way, or not to enter secondary school at all. Hence, youth unemployment has a class as well as an age dimension. Changes in higher education during the 1970's worsened the relative position of the youngest and least educated workers by increasing the supply of better educated young workers. Unemployment among university graduates led to a substantial decline in enrollment in higher education, which added to the competition in the job market. Some college graduates had to take lower level jobs that they would not have accepted in previous years, including jobs that once had gone to secondary school graduates. These better educated young people were often preferred by employers and this caused a chain reaction that reverberated down the line and ultimately affected even the comprehensive school graduate.[6] Similar competition results from another factor. University applicants with work experience are now given extra credit, making it easier for them to gain entrance. Hence, more students work for a few years before going on to higher education.

Policies to increase job prospects

Policies to combat youth unemployment are wide ranging and include those targeted at youth as well as those targeted at specific kinds of unemployment which disportionately affect young people. General economic policies, needless to say, are particularly important because recessions inevitably hit the young harder than adults.

Role of schools. Within the school system, there are efforts to inform students about the world of work. For example, students visit a variety of work sites in their last years of comprehensive school. In addition, there are vocational guidance officers in all schools, and the

Table 1. National and youth unemployment rates in Sweden, 1963–81

Year	All ages	16- to 19-year-olds			20- to 24-year-olds		
		Total	Men	Women	Total	Men	Women
1963	1.7	3.8	2.9	4.7	2.2	2.1	2.3
1964	1.6	4.4	3.7	5.1	2.0	2.1	1.8
1965	1.2	2.9	1.9	5.1	1.9	1.2	2.9
1966	1.6	3.7	2.7	4.8	2.2	2.0	2.3
1967	2.1	5.2	4.7	5.8	3.2	3.0	3.5
1968	2.2	5.7	5.0	6.5	3.0	3.0	3.0
1969	1.9	4.6	3.8	5.4	2.8	2.6	3.0
1970	1.5	4.3	3.4	4.8	2.2	2.5	2.4
1971	2.5	7.7	7.1	8.4	3.7	3.7	3.8
1972	2.7	8.2	7.8	8.7	4.5	4.2	4.9
1973	2.5	6.8	5.8	8.0	4.4	4.2	4.7
1974	2.0	6.6	5.2	8.1	3.2	2.7	3.8
1975	1.6	5.5	4.2	7.1	2.8	2.1	3.5
1976	1.6	5.5	4.1	7.0	2.7	2.2	3.4
1977	1.8	6.7	5.4	8.1	3.2	2.9	3.5
1978	2.2	7.9	7.1	8.7	4.3	4.3	4.3
1979	2.1	7.4	7.0	7.9	3.7	3.6	3.8
1980[1]	2.0	7.6	6.5	8.8	3.7	3.5	3.9
1981	2.5	9.4	8.2	10.5	4.7	4.8	4.6

[1] Because of a conflict in the labor market, data exclude second quarter.

NOTE: Data are based on Sweden's Central Bureau of Statistics Labor Force Surveys. The unemployment rate is the percentage of the labor force that is unemployed.

Labor Market Board (a tripartite board which carries out labor market policies) provides personnel from its Public Employment Service to talk to secondary school students and at parents' meetings. Also, as part of its broad educational effort, the board prepares printed material and radio and television programs aimed at students.

There is excellent cooperation between the local Labor Market Boards and the Boards of Education. They work together to develop special courses in the adult municipal school system, and in folk high schools (a type of boarding school with no official syllabus or compulsory subject matter and run by local governments, churches, trade unions, temperance societies, and other nonprofit organizations). Labor Market Boards and Boards of Education also cooperate to develop courses in the regular school system and in the more than 50 government-sponsored labor market training centers located throughout Sweden.

Planning councils. Since 1977, there have been planning councils for youth in all municipalities. These are headed by local school authorities and include representatives of other municipal agencies, the Employment Service, labor, and management. Under this arrangement, schools are responsible for maintaining contact for 2 years with all students who leave compulsory school without continuing their education. Until these youths are 18 years of age, they must be guided and advised about jobs or other educational opportunities that may arise, such as special courses or the availability of additional openings in particular lines in the regular school system. The aim is to prevent out-of-work 16- and 17-year-olds from drifting aimlessly on their own.[7]

Occupational stereotyping. Breaking down the stereotyping of jobs by sex is considered very important in the fight against youth unemployment. Young women already in the labor market are encouraged to consider nontraditional jobs and greater efforts are being made within the school system, among employers, within the family, and in the media to stop the stereotyping of occupations.[8]

Monetary support. Cash assistance for those who have never worked or are otherwise ineligible for regular unemployment benefits was introduced in the 1970's with the young and women in mind. Persons who have finished secondary school (or the equivalent) are eligible for these benefits, which pay less than regular unemployment insurance, if they have unsuccessfully sought work for 3 months through the Employment Service. Those who have not completed secondary school and who are at least 16 years old must have worked for at least 5 months. Slightly more than half of all recipients of cash assistance at the end of the 1970's were under 25 years, representing only 30 percent of the unemployed in that age group.[9] However, some may have been receiving regular unemployment benefits. Sweden does not consider unemployment insurance a solution to joblessness among the young; it views such benefits as temporary income until something more substantive can be arranged—a job or training for a job.

Placement efforts. The Employment Service (at which almost all jobs must be listed) helps in the job search and often intensified placement efforts are made for youths. However, if employers demand an experienced worker or a highly skilled worker, there is little the service can do. Telephone follow-ups and even personal visits to job sites by placement officers have occasionally proven helpful in placing young people in jobs.

Relief work. Until the 1970's, there were few young people in labor market training or "relief work" (comparable to Public Service Employment jobs in the United States). With few exceptions, training was reserved for persons 20 years and over. The major thrust of relief work was to help adults in the work force adapt to changing demands for labor. With rising youth unemployment, the proportion of trainees under 25 years rose from 30 percent in 1969 to 38 percent in 1979.[10] In the 1970's, the age limit for relief work was relaxed and about 10 percent of the training slots were taken by teenagers.[11] Youngsters uncertain about their occupational choice were encouraged to try several types of jobs before deciding on further training or more formal education. Programs were developed for those with special problems who were turned off by ordinary schooling: groups of about eight young people were given alternating periods of general education and work—2 weeks of education followed by 6 to 8 weeks of relief work, repeated with different jobs.

The biggest expansion was in relief jobs at regular wages for the young. Between 1970 and 1979, the proportion of persons under age 25 in relief work rose from 4 percent to 68 percent. The expansion was particularly important for young women—83 percent of women, but only 57 percent of men in relief work in 1979 were that young.[12] In the public sector, office work, maintenance and repair work, environmental conservation, and care of children and the elderly were popular, to cite some examples. Private sector employees who hired young people referred by the Employment Service were also able to provide relief work, and received a 75-percent subsidy if these jobs were in addition to their regular recruitment and included some useful training. The hope that employers would offer regular jobs after the 6-month maximum for relief work often did not materialize. Sometimes a succession of relief workers were taken on for 6 months, and training was sometimes lacking or cursory.

In the case of 16- and 17-year-olds, the government feared that labor market training and relief work would compete with regular schooling and might even induce students to quit school for short-term jobs. Secondary school students in Sweden receive a stipend which, in 1979, was 208 kronor a month (a krona was equivalent to 22 cents in U.S. currencies in 1979), while relief jobs paid from 3,000 to 4,000 kronor a month.

Did this high pay for students lure them away from school and into the temporary jobs? That, along with questions about the reliability of some of the training were major reasons for the policy changes toward 16- and 17-year-olds approved by Parliament in June 1980. The new approach is less costly and possibly that was also a consideration of the government. Both relief work and labor market training were considered inappropriate for youths under 18 years. Now, 16- and 17-year-olds are not eligible for these programs. Instead, they are encouraged to return to secondary school. If they do not wish to do that, they are offered additional vocational education and training within industry or some flexible "sandwich course" arrangement of education and practical work experience, with the responsibility shifted from the Labor Market Board to the educational authorities. The stipend paid is the same as for other secondary school students. The Social Democrats (not in power at the time) opposed ending relief work, contending that to do so would retreat from the Parliament's goal of a "youth guarantee" to insure either training or employment for all out-of-school youth.[13] The success of the new program will surely depend on the adequacy of the training and the ability to attract back into the program students who had become alienated from the educational establishment. Not enough time has elapsed to know the results, but early reports are positive. However, the ability to absorb the young into the labor market in the 1980's will also depend on the state of the economy.

Special protection for older workers

For both men and women in Sweden, unemployment declines steadily with age until it reaches a trough of about 1 percent among 45- to 54-year-olds and then rises to about 2 percent among 55- to 65-year-olds. (See table 2.) Beyond age 65, there appears to be no unemployment, but labor force participation is very low, 14 percent for men and 4 percent for women (1979). Many older workers who lose their jobs slip into retirement, as the pensionable age was lowered to 65 during the 1970's. Although older workers are less likely to lose their jobs, they are out of work longer than those who are younger. This pattern is the same as that in the United States.

Table 2. Unemployment rates in Sweden, by age and sex, 1979–81

Age	Total			Men			Women		
	1979	1980	1981	1979	1980	1981	1979	1980	1981
16–74 years . .	2.1	2.0	2.5	1.9	1.7	2.4	2.3	2.3	2.6
16 to 19 . . .	7.4	7.6	8.4	7.0	6.5	8.2	7.9	8.8	10.5
20 to 24 . . .	3.7	3.7	4.7	3.6	3.5	4.8	3.8	3.9	4.6
25 to 34 . . .	1.9	1.8	2.3	1.8	1.5	2.2	2.1	2.2	2.5
35 to 44 . . .	1.2	1.1	1.4	.9	.9	1.3	1.5	1.4	2.5
45 to 54 . . .	1.0	1.0	1.3	.9	.9	1.4	1.1	1.1	1.3
55 to 64 . . .	2.0	1.6	2.0	1.8	1.6	2.2	2.2	1.6	1.8
65 to 74 . . .	.0	.0	.0	.0	.0	.0	.0	.0	.0

NOTE: These data are based on Sweden's Central Bureau of Statistics, Labor Force Sample Surveys. The unemployement rate is the percentage of the labor force that is unemployed.

The situation of older workers started to deteriorate in the late 1960's and early 1970's, partly because of the demand for higher productivity, the LO contends.[14] During that time, whenever there was a plant closing or cutback in production, most of those who lost their jobs found others. But, even in nonrecession years, a residual group was left without work, usually older workers and the handicapped. The recession of the early 1970's made their plight worse. Many of the laws that protect these workers came after that period, partly in response to these developments in the labor market. Policies towards older workers fall into two main categories: those that seek to maintain employment and those that seek to maintain income when there is no work. (Policies for disabled workers such as subsidized employment and workplace and job redesign also apply to many older workers. These are not discussed in this article.)

Keeping older workers at work

Much of the sweeping labor legislation of the 1970's aimed at increasing the security of all workers. But the vulnerable status of older workers and the handicapped was recognized and they were given special protection. The Security of Employment Act requires prior notice of dismissal and also requires the time of notice to vary with age, reaching a maximum of 6 months for employees older than 45 years.[15] Seniority determines the order of dismissal and that tends to protect older workers. The computation of the length of service for those over 45 years is also governed by more generous rules. And, the Security of Employment Act states that there must be reasonable grounds for dismissal. Illness and reduced work capacity are not generally considered sufficient grounds, unless an employee is "no longer capable of doing work of any significance." In the case of illness, the workers are given disability pensions; if they are unable to carry a full work load, the employer must find less demanding work for them. Thus, there is great job security for older (and disabled) workers whose capacity to do certain work has diminished or who cannot perform their old jobs but can do other types of work.

The Promotion of Employment Act helps both older and handicapped workers by requiring that the County Labor Market Board be notified before any layoff or plant closing. The employer must, if requested, provide information about the number of employees above a certain age or with diminished work capacity, so that special plans can be made for their reemployment, although these employees are usually retained unless the plant actually shuts down. That act also gives the County Board the day-to-day responsibility of consulting with employers—even when no dismissals are involved—in order to improve the situation of elderly or handicapped workers already within firms and to promote their recruitment.[16] Thus, the primary thrust of policies toward older workers is to prevent their unemployment by maintaining their existing jobs.

Labor market training is not extensively used by the older worker. During the 1979–80 fiscal year, for example, about 15 percent of the unemployed were over 55 years old, but only 2 percent of those in labor market training (excluding inplant training) were in that age group.[17] In most cases, the problem confronting older workers is not lack of skill, but lack of an employer who will hire them. Relocation is not used much either, because older workers have so many ties to a locality and relatively few working years left.

Some older workers are in relief work. Those 45 years and older held about 45 percent of all relief jobs in 1975. But, the large expansion of relief work in the late 1970's was aimed at persons under age 25; as a result, only 13 percent of relief workers were age 45 or older at the beginning of 1979.[18]

Income support

Despite the protection given to older employed workers, unemployment does happen, particularly when plants close. And then, income support plays an important role. Regular unemployment benefits are usually payable for up to 60 weeks, but for persons age 56 to 64, benefits are payable for 90 weeks, if necessary. The Cash Labor Market Assistance, available to those who have exhausted benefits, also varies with age, rising from 30 weeks for persons under age 55, to 60 weeks for those age 55 to 59; for those age 60 and over, and for some structurally unemployed persons, benefits can be paid until age 65, when the normal retirement pension begins.

However, unemployed workers over age 60 often can qualify for a disability pension. The medical test is more lenient for older workers than for younger persons. If a person is considered permanently unemployed, there is no medical test at all, if he or she has exhausted regular benefits or has received cash labor market support for 90 weeks. Liberalization in granting disability pensions resulted from concern of the blue-collar workers' union for older workers who, at the end of the 1960's, began to encounter increasing difficulties in the labor market. Statutory amendments were passed in the early 1970's to change the rules that govern eligibility for disability pensions. It is estimated that a worker earning the average wage receives about 88 percent of prior after-tax income from a government disability pension and, for most workers, there is also a union-negotiated disability pension.[19] So, older workers who leave the labor market in this way maintain their living standards.

While there is much talk in the United States about increasing the age of eligibility for full social security retirement benefits from 65 to 68, Sweden has been going in the opposite direction. In 1976, the pensionable age for full benefits was lowered from 67 to 65, and reduced benefits can be received at age 60. Unlike an American worker, a jobless Swedish worker is not forced to take early retirement with its permanently reduced benefits, because there are no alternative sources of income. The disability pension can maintain income until age 65, when the old-age pension would start.

The most interesting option for an employed worker who wishes to gradually reduce working prior to full retirement is the partial pension system that was introduced in 1976. Partial pensions are geared to part-time work. The rule is that working hours must be reduced by at least 5 hours a week and, after the reduction, must still be at least 17 hours weekly. The worker must also have been employed for at least 10 years after the age of 45. (Because of these rules, the partial pension has been used disproportionately by men.) The partial pension pays 50 percent of the loss of earnings that result from the reduction in hours. However, because of Sweden's high marginal tax rates, the actual disposable income from the combined partial pension *and* part-time earnings is substantial. Unlike early retirement benefits, a partial pension does not result in a smaller pension at age 65. At age 65 a worker can receive a full old-age pension without any retirement test. It is also possible to postpone collecting all or part of the old-age pension. If that is done, the pension will be larger when payments finally start.

The partial pension plan is extremely popular. It provides a bridge between work and full-time retirement. Many people who retired faced a shock—an abrupt change in their way of life after a lifetime of work. They missed their friends and social contacts at work. Doctors and psychologists supported unions in their desire to enable a more gradual transition into retirement. The main argument against disability pensions for the older unemployed worker in Sweden is not based on economics, but is based on the feeling that such pensions lead to social isolation and a self-identification as disabled.[20] The partial pension avoids these problems and also is available to workers not threatened by unemployment. Partial pensions also enable some workers who might not be able to function on a full-time basis to avoid disability pensions. The partial pension increases the individual's freedom of choice about the age and extent of retirement. It does not, however, resolve the problem of those older workers whose jobs are eliminated by a plant closing. One cannot work part time at a nonexistent job. Nor does it resolve the problems of older jobless workers who still have not reached the age of 60. ☐

——*FOOTNOTES*——

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[1] Eva-Lena Ahlqvist, "Youth Unemployment in Sweden," *Current Sweden*, No. 216, April 1979, p. 3.

[2] This paragraph draws heavily from Gösta Rehn and K. Helveg Peterson, *Education and Youth Employment in Sweden and Denmark*, a Study Prepared for the Carnegie Council on Higher Education (Carnegie Council on Policy Studies in Higher Education, 1980), pp. 75–77. This comprehensive study of Swedish youth deals with all aspects of behavior, attitudes, education, employment, and unemployment.

[3] Rehn, p. 74.

[4] "The Integrated Upper Secondary School in Sweden" (Stockholm, The National Board of Education, 1976), p. 1, and "Primary and Secondary Education in Sweden," Fact Sheets on Sweden (Stockholm, the Swedish Institute, 1981), p. 4.

[5] *Ibid.*, pp. 3–4.

[6] Ahlqvist, p. 3.

[7] See, for instance, *Unemployment Among Young People in Sweden—Measures and Experience* (Solna, Sweden, National Labor Market Board, 1979), p. 3.

[8] Sweden, National Committee on Equality Between Men and Women, *Step by Step: National Plan of Action for Equality*, SOU 1979–56 (Stockholm, Liber Förlag, 1979), ch. 2.

[9] Ahlqvist, p. 7.

[10] Rehn, p. 92.

[11] *Ibid.* Derived from data on p. 91.

[12] Sweden, National Central Bureau of Statistics, *Arbetsmarknadsstatistisk årsbok 1979–1980* (Stockholm, Liber Förlag, 1980), table 2.14.6, p. 179.

[13] Rehn, p. 90.

[14] Swedish Trade Union Confederation-LO, *Report on Labor Market Policy* (Stockholm, Swedish Trade Union Confederation-LO, 1975), pp. 15–17. See also, the Swedish Government's Commission on Long-Term Employment Policy, *Employment for Handicapped Persons: A Summary of the Commission's Report, January 1978 and of Five Research Projects* (Stockholm, Ministry of Labor, 1978), p. 3.

[15] For the detailed contents of this act see, Ministry of Labor, *Swedish Laws on Security of Employment, Status of Shop Stewards, Litigation in Labour Disputes* (Stockholm, Ministry of Labor, 1977), pp. 1–2 and 6–20.

[16] *Ibid.*, pp. 2–3 and 21–24.

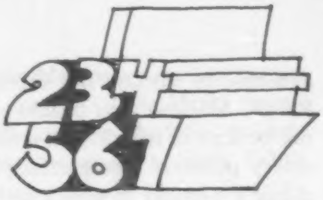
[17] Derived from Central Bureau of Statistics, Labor Force Sample Survey, unpublished data; and *Swedish Employment Policy, 1979/80, Annual Report*, Reprint (Solna, Sweden, The National Labor Market Board, 1979), p. 16.

[18] *Swedish Employment Policy 1978/79, Annual Report*, Reprint (Solna, The National Labor Market Board, 1979). Derived from data on p. 23.

[19] Eskil Wadensjö, "Disability Policy in Sweden: The Swedish Contribution to the Cross National Disability Study" (Stöckholm, Swedish Institute for Social Research, March 1981), Part 4, table 4.7, p. 22. This study will be part of Victor Halberstadt and Robert Haveman, eds., *The Economics of Disability: A Cross National Perspective* (tentative title), forthcoming. Wadensjö estimates that a worker earning half the average earnings receives 117 percent of prior after-tax income and one earning twice the average receives 66 percent.

[20] *Ibid.*, part 5, p. 3.

The Anatomy of Price Change



Reconciling the CPI and the PCE Deflator: 2nd quarter 1982

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This article presents the fifth reconciliation of the Federal Government's two major inflation measures—the Consumer Price Index (CPI), published by the Bureau of Labor Statistics, and the Implicit Price Deflator for Personal Consumption Expenditures (PCE Deflator), produced by the Bureau of Economic Analysis. The first reconciliation, which established the technical basis for the analysis, appeared in the September 1981 *Review* and showed that the divergence between the two price measures could be reconciled in terms of three factors—differences in the measurement of housing costs, differences in "weighting", and the effects of "all other" factors.[1]

Table 1. "Reconciliation" of annual and quarterly percent changes in the CPI-U and the Personal Consumption Expenditure price measures, 1980 to second quarter 1982

Difference	1980[1]	1981[1]	1981[1,2] I	II	III	IV	1982 I	II
CPI-U[3]	13.5	10.4	11.0	7.8	11.8	7.7	3.2	4.6
PCE: Chain-Weight[4]	10.7	9.1	10.3	7.4	8.0	7.2	5.2	3.7
Total difference[5] (CPI-U minus PCE: Chain-Weight)	2.8	1.3	0.7	0.4	3.8	0.5	−2.0	0.9
Housing treatment[6]	2.3	0.9	0.4	0.5	2.7	−0.5	−1.3	1.6
Weighting effect[7]	0.5	0.2	0.6	0.3	−0.4	−0.1	−0.4	−0.4
"All other" effect[8]	0.0	0.2	−0.3	−0.4	1.5	1.1	−0.3	−0.3

[1] Owing to the July 1982 revision of data produced by the Bureau of Economic Analysis, U.S. Department of Commerce, the annual and quarterly figures may differ slightly from those which appeared in table 1, p. 37, July 1982, *Monthly Labor Review (MLR)*.

[2] Seasonally adjusted annual rates.

[3] Annual and quarterly changes in the CPI-U are taken from tables provided by the Office of Prices and Living Conditions, Bureau of Labor Statistics (BLS). The changes are compiled from 1967 based indexes.

[4] Data for the "PCE: Chain-Weight" were obtained from the Bureau of Economic Analysis (BEA), U.S. Department of Commerce.

[5] CPI-U minus "PCE: Chain-Weight" equals the sum of "housing treatment", "weighting", and "all other" effects.

[6] Change in CPI-U minus change in CPI-X1. See September 1981 *MLR*, p. 12, for fuller explanation. Source of CPI-X1 data is same as footnote 3.

[7] Change in "PCE: 1972-Weight" minus change in "PCE: Chain-Weight". See September 1981 *MLR*, pp. 8–9, for fuller explanation. Data source for "PCE: 1972-Weight" changes is same as for footnote 4.

[8] Change in CPI-X1 minus change in "PCE: 1972-Weight". See September 1981 *MLR*, p. 6, for fuller explanation.

Table 2. "Reconciliation" of the CPI-U and the Personal Consumption Expenditure price measures: cumulative percent change from 1972 to the dates shown

Difference	1980	1981	1981[1] I	II	III	IV	1982 I	II
CPI-U (1972 = 100)[2]	197.0	217.4	210.3	214.3	220.4	224.6	226.3	228.9
PCE Deflator (1972 = 100)[3] (Current-Weight)	179.2	194.5	189.2	192.6	196.4	199.8	202.2	204.0
Total difference[4] (CPI-U minus PCE Deflator)	17.8	22.9	21.1	21.7	24.0	24.8	24.1	24.9
Housing treatment[5]	11.7	14.5	13.3	13.7	15.4	15.5	15.3	16.0
Weighting effect[6]	5.6	7.6	7.4	7.6	7.5	7.7	7.7	7.7
"All other" effect[7]	0.5	0.8	0.4	0.4	1.1	1.6	1.1	1.2

[1] Owing to changes in seasonal adjustment factors and to the July 1982 revision of data produced by the Bureau of Economic Analysis, U.S. Department of Commerce, annual and quarterly figures may differ slightly from those which appeared in table 2, p. 38, July 1982, *Monthly Labor Review (MLR)*.

[2] Annual data for the CPI-U are annual averages, 1972=100. The quarterly data for 1981 and 1982 were computed by the Office of Research and Evaluation, employing seasonally adjusted monthly data provided by the Office of Prices and Living Conditions (BLS).

[3] Data for the Implicit PCE Deflator, or "PCE: Current-Weight" index, were provided by the Bureau of Economic Analysis, U.S. Department of Commerce. The data incorporate revisions released in August 1982.

[4] CPI-U minus PCE Deflator equals the sum of "housing treatment", "weighting", and "all other" effects.

[5] CPI-U minus CPI-X1. See September 1981 *MLR*, p. 5, for fuller explanation. Data source for the CPI-X1 is the same as footnote 2.

[6] "PCE: 1972-Weight" minus "PCE: Current-Weight". See September 1981 *MLR*, p. 6, for fuller explanation. Data source for the "PCE: 1972-Weight" is same as footnote 3.

[7] CPI-X1 minus "PCE: 1972-Weight". See September 1981 *MLR*, p. 6, for fuller explanation.

As with earlier articles in this series, two different reconciliations are presented, one dealing with period-to-period changes in the price measures, and the other with total movement over the decade from 1972 to date.

Reconciling period-to-period changes. In the second quarter of 1982, the Consumer Price Index for All Urban Consumers (CPI-U) rose more rapidly than the "PCE: Chain-Weight" index.[2] This followed an unusual first quarter in which, for only the second time in 3 years, the reverse had been true. (Compare the first two lines in table 1.)

The renewed acceleration of the CPI-U relative to the "PCE: Chain-Weight" index in the most recent quarter is, however, attributable only to the reemergence of a positive "housing treatment" effect. During the most recent quarter, the CPI-U was once again accelerating at a faster rate than the CPI-X1, the Consumer Price Index which approximates a rental equivalence measure of housing comparable to that employed in the PCE Deflator (the difference between the two being 1.6 percentage

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points—the "housing treatment" effect).

The other two components of the difference between the CPI-U and the "PCE: Chain-Weight" index—the "weighting effect" and "all other effect"—remain negative and are both identical to their values in the first quarter of 1982. The "PCE: Chain-Weight" index, which draws its weights from the immediately preceding period, continued to rise more rapidly than a fixed weight index (1972=100) based on the same price data,[3] giving rise to the negative "weighting effect" recorded in table 1. The latter, as noted in previous articles, is unexpected and unusual, though it has now persisted for four quarters. Included in the "all other" effect is the influence of different seasonal adjustment procedures followed in the CPI-X1 and the "PCE: 1972-Weight" indexes.

Reconciling cumulative changes. Table 2 updates cumulative comparisons of the CPI-U and PCE Deflator which appeared in previous articles, extending the reconciliation through the second quarter of 1982. Results are complementary to those of the period-to-period reconciliation.

——— *FOOTNOTES* ———

[1] The initial reconciliation and technical basis for the analysis are contained in Jack E. Triplett, "Reconciling the CPI and PCE Deflator," *Monthly Labor Review*, September 1981, pp. 3–15. Subsequent reconciliations appeared in the January, May, and July 1982 issues of the *Monthly Labor Review*.

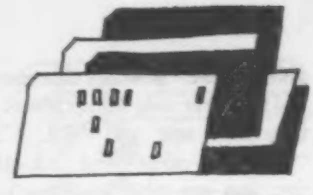
[2] As discussed in Triplett, pp. 7, 13–14, the PCE Deflator, a Paasche-formula index, cannot be used for this reconciliation because Paasche formulas lend themselves to statistical interpretation only when referring back to the base year (in this case, 1972).

[3] See footnote 7 to table 1 and the September 1981 *MLR* article for information on the computation of the weighting effect.

A note on communications

The *Monthly Labor Review* welcomes communications that supplement, challenge, or expand on research published in its pages. To be considered for publication, communications should be factual and analytical, not polemical in tone. Communications should be addressed to the Editor-in-Chief, *Monthly Labor Review*, Bureau of Labor Statistics, U.S. Department of Labor, Washington, D.C. 20212.

Research Summaries



Occupational salary levels for white-collar workers, 1982

MARK S. SIELING

The Bureau of Labor Statistics recently released the results of its March 1982 survey of professional, administrative, technical, and clerical pay in medium and large firms. The survey, 23rd in an annual series, provides nationwide salary averages and distributions for some 100 work level categories covering two dozen occupations.[1] The number of work levels per occupation varied from one for messengers to eight for engineers. Each level describes duties and responsibilities in private industry that are comparable with those of specific groups of Federal white-collar employees. In keeping with the Federal Pay Comparability Act of 1970, the narrowly defined occupational classifications of the survey provide the link between private and Federal Government sectors, thereby permitting compliance with the congressional directive that "Federal pay rates be comparable with private enterprise pay rates for the same levels of work."[2]

Among the various skill levels of white-collar work, salary increases continued to be largest for journeyman and senior levels of professional and administrative occupations. Table 1 shows that Group C jobs—equivalent to grades 11–15 of the Federal Government's General Salary (GS) Schedule—experienced a record 10.4-percent salary rise in 1981–82. Group C pay increases also led those of the two lower groups in 4 of the preceding 5 years. (See table 2 for identification of the survey classifications that equate to each GS grade.[3])

A closer look finds that the pay gap between entry-level professionals and their experienced coworkers widened in the 1970's, as the latter group generally chalked up substantially larger salary increases. The following tabulation illustrates this point by showing pay levels of four journeyman classifications (GS 11 equivalents) as a percent of the corresponding entry levels (GS 5).[4] Note that the journeyman advantage has slipped slightly since 1979:

Table 1. Percent increases in average salaries by work level category, 1970–82

Period	Group A (GS grades 1–4)	Group B (GS grades 5–8)	Group C (GS grades 11–15)
1970–82	130.4	123.0	135.0
1970–71	6.2	6.3	6.2
1971–72[1]	6.3	5.2	5.6
1972–73	5.5	4.4	5.7
1973–74	6.2	5.7	6.2
1974–75	9.1	8.6	8.8
1975–76	7.6	6.4	6.5
1976–77	6.9	6.3	7.7
1977–78	7.5	8.0	8.8
1978–79	7.2	7.5	8.0
1979–80	9.1	10.1	9.3
1980–81	9.8	9.6	10.2
1981–82	9.5	9.4	10.4

[1] Actual survey-to-survey increases have been prorated to a 12-month period.

	1970	*1979*	*1982*
Accountant	150	174	173
Auditor	158	183	179
Chemist	155	176	173
Engineer	144	150	146

In recent years, however, the strong demand for engineers has bolstered their starting salaries, thus keeping the pay gap between their entry and journeyman levels relatively small. This practice is evident when engineer salaries are compared to those of another technical profession—chemist. In 1982, average salaries for entry-level engineers were 20 percent higher than starting chemist salaries; at the journeyman level, in contrast, the difference was only 1 percent (table 2).

The effects of such changes are reflected in the overall salary structure for professional jobs since 1970. Based on a matrix analysis of five professional occupations spanning 30 work levels, the average difference for 435 paired comparisons was 65 percent in 1982 and 58 percent in 1970.[5] How these individual jobs and their work

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Table 2. Average salaries of employees in selected white-collar occupations in private establishments, March 1982

Occupational level and Federal GS grade equivalent	Number of employees[1]	Average annual salary[2]
Accountants and auditors		
Accountants I (GS–5)	14,281	$16,260
Accountants II (GS–7)	23,570	22,068
Accountants III (GS–9)	35,575	25,673
Accountants IV (GS–11)	21,187	31,658
Accountants V (GS–12)	7,814	38,080
Accountants VI (GS–13)	1,344	48,549
Chief accountants I (GS–11)	654	34,506
Chief accountants II (GS–12)	953	39,708
Chief accountants III (GS–13)	672	50,414
Chief accountants IV (GS–14)	180	61,255
Auditors I (GS–5)	2,456	17,901
Auditors II (GS–7)	3,760	22,065
Auditors III (GS–9)	4,797	26,502
Auditors IV (GS–11)	2,559	32,004
Public accountants I (GS–7)	9,035	17,296
Public accountants II (GS–9)	9,570	19,177
Public accountants III (GS–11)	8,485	22,830
Public accountants IV (GS–12)	4,439	27,296
Attorneys		
Attorneys I (GS–9)	1,628	25,162
Attorneys II (GS–11)	3,008	31,696
Attorneys III (GS–12)	3,622	39,649
Attorneys IV (GS–13)	2,919	49,818
Attorneys V (GS–14)	1,896	61,579
Attorneys VI (GS–15)	707	76,202
Buyers		
Buyers I (GS–5)	6,422	18,074
Buyers II (GS–7)	16,901	22,174
Buyers III (GS–9)	17,561	27,424
Buyers IV (GS–11)	5,449	33,409
Programmers		
Programmers/programmer-analysts I (GS–5)	13,043	17,535
Programmers/programmer-analysts II (GS–7)	30,366	20,629
Programmers/programmer-analysts III (GS–9)	45,970	25,192
Programmers/programmer-analysts IV (GS–11)	26,380	29,365
Programmers/programmer-analysts V (GS–12)	7,950	35,430
Personnel management		
Job analysts I (GS–5)	216	18,573
Job analysts II (GS–7)	444	19,900
Job analysts III (GS–9)	822	25,028
Job analysts IV (GS–11)	524	31,221
Directors of personnel I (GS–11)	1,061	31,136
Directors of personnel II (GS–12)	2,120	38,168
Directors of personnel III (GS–13)	958	47,553
Directors of personnel IV (GS–14)	287	57,859
Chemists and engineers		
Chemists I (GS–5)	3,617	19,640
Chemists II (GS–7)	6,677	23,474
Chemists III (GS–9)	10,900	28,016
Chemists IV (GS–11)	11,028	34,047
Chemists V (GS–12)	8,912	40,207
Chemists VI (GS–13)	3,828	46,971
Chemists VII (GS–14)	1,438	53,658
Chemists and engineers—Continued		
Engineers I (GS–5)	31,293	$23,622
Engineers II (GS–7)	60,083	26,060
Engineers III (GS–9)	116,212	29,331
Engineers IV (GS–11)	138,972	34,443
Engineers V (GS–12)	101,701	40,677
Engineers VI (GS–13)	45,853	47,442
Engineers VII (GS–14)	14,102	54,338
Engineers VIII (GS–15)	2,874	62,494
Technical support		
Engineering technicians I (GS–3)	7,176	14,686
Engineering technicians II (GS–4)	20,271	17,246
Engineering technicians III (GS–5)	31,340	20,219
Engineering technicians IV (GS–7)	36,630	23,620
Engineering technicians V (GS–9)	21,651	26,761
Drafters I (GS–2)	3,161	11,739
Drafters II (GS–3)	11,929	14,257
Drafters III (GS–4)	23,277	17,046
Drafters IV (GS–5)	26,149	20,964
Drafters V (GS–7)	20,762	25,909
Computer operators I (GS–4)	6,141	11,896
Computer operators II (GS–5)	14,928	13,895
Computer operators III (GS–6)	29,523	15,804
Computer operators IV (GS–7)	16,252	19,325
Computer operators V (GS–8)	3,212	22,889
Computer operators VI (GS–9)	360	23,267
Photographers II (GS–5)	570	18,773
Photographers III (GS–7)	725	22,425
Photographers IV (GS–9)	434	25,392
Clerical		
Accounting clerks I (GS–2)	27,738	10,478
Accounting clerks II (GS–3)	65,417	12,488
Accounting clerks III (GS–4)	58,670	14,713
Accounting clerks IV (GS–5)	23,519	18,083
File clerks I (GS–1)	22,496	9,018
File clerks II (GS–2)	12,109	10,474
File clerks III (GS–3)	4,037	12,794
Key entry operators I (GS–2)	59,672	11,771
Key entry operators II (GS–3)	40,048	13,956
Messengers (GS–1)	13,931	9,909
Personnel clerks/assistants I (GS–3)	2,353	11,706
Personnel clerks/assistants II (GS–4)	4,683	14,122
Personnel clerks/assistants III (GS–5)	3,576	15,718
Personnel clerks/assistants IV (GS–6)	1,787	18,432
Purchasing assistants I (GS–4)	4,791	13,589
Purchasing assistants II (GS–5)	4,605	17,117
Purchasing assistants III (GS–6)	1,577	22,276
Secretaries I (GS–4)	63,768	14,000
Secretaries II (GS–5)	63,060	14,939
Secretaries III (GS–6)	106,686	17,051
Secretaries IV (GS–7)	45,616	18,603
Secretaries V (GS–8)	22,679	21,546
Stenographers I (GS–3)	15,562	14,867
Stenographers II (GS–4)	11,534	18,094
Typists I (GS–2)	31,703	10,893
Typists II (GS–3)	17,822	13,723

[1] Occupational employment estimates relate to the total in all establishments within scope of the survey and not to the number actually surveyed.

[2] Salaries reported relate to the standard salaries that were paid for standard work schedules; i.e., the straight-time salary corresponding to employee's normal work schedule excluding overtime hours. Nonproduction bonuses are excluded, but cost-of-living bonuses and incentive earnings were included.

NOTE: The following occupational levels were surveyed but insufficient data were obtained to warrant publication: Chief accountant V; director of personnel V; chemist VIII; personnel clerk/assistant V; engineering technician VI; and photographer I and V.

levels fared in salary increases over the 1970–82 period is shown below:

	Percent increase		
	Level I	*Level II*	*Average for remaining levels*
Accountant	115	130	146
Attorney	112	133	139
Auditor	101	122	131
Chemist	114	129	137
Engineer	131	135	141

Although the salary structure widened, it left the relative ranking of professional work levels by pay virtually unchanged. Only 2 (Attorneys I and II) of 30 moved more than one position between 1970 and 1982.

In 1982, the survey's highest professional salary average was for top-level (VI) corporate attorney at $76,202 a year; the lowest-paid professional classification—entry-level (I) auditor—averaged $17,901 (table 2). These extremes reflect the wide range of duties and responsibilities represented by all professional categories covered by the survey. In contrast, the typical salary spread among job categories with equivalent levels of work is relatively narrow. Thus, annual average salaries for the six work levels surveyed that equate to Federal GS grade 13 ranged from $46,971 for chemist VI to $50,414 for chief accountant III[6]—a difference of only 7 percent. Salary relationships produced by the survey are evidence that companies recognize equivalent duties and responsibilities among a wide range of occupations within broad categories.

Another characteristic of white-collar workers reported in the survey is the pronounced variation in their earnings within occupational work levels. Salaries of the highest paid employees in a single work level were commonly twice those of the lowest paid employees. Consequently, some professional workers in the first journeyman level earned as much as, or more than, their counterparts in more senior levels; for example, 10 percent of accountants III and 7 percent of accountants V earned between $30,000 and $32,500 annually in March 1982. Factors contributing to dispersed salaries include such traditional wage determinants as firm size, industry, and geographic location in addition to range-of-rate plans used by many employers to recognize merit or seniority.

A MORE DETAILED ANALYSIS of white-collar salaries and complete results of this year's survey are contained in the *National Survey of Professional, Administrative, Technical, and Clerical Pay, March 1982,* BLS Bulletin 2145, September 1982. It includes salary distributions by occupational work level, and relative employment and salary levels by industry division for the two dozen occupations studied. □

FOOTNOTES

[1] The survey is conducted annually with a March reference period in metropolitan areas and nonmetropolitan counties in the United States, except Alaska and Hawaii. Metropolitan areas accounted for nine-tenths of the employees in occupations for which salary data were developed.

[2] 5 U.S.C. Sec. 5301(a)(3)(1970). The pay-setting role of the Professional, Administrative, Technical, and Clerical Survey is described in George L. Stelluto, "Federal pay comparability: facts to temper the debate," *Monthly Labor Review,* June 1979, pp. 18–28.

[3] In 1982, a total of 101 work levels produced publishable data out of the 108 levels within scope of the survey. Of these 101 work levels, 92 were sufficiently unchanged in definition between the 1981 and 1982 surveys to be used in computing the 1981–82 increases shown in table 1. Widely varying duties and responsibilities may be embodied in work levels within each of the broad categories of table 1; for example, Group B includes journeyman, clerical, and technical levels, such as accounting clerk IV and engineer technicians III through IV, as well as the entry and developmental levels of professional occupations.

[4] A similar pattern was found for the 1970's in the salary relationship of recent law graduates with bar membership (survey job attorney I) and attorneys with experience handling legal work with few precedents (attorney III)—GS grade equivalents 9 and 12, respectively. The salary relatives were 142 in 1970 and 158 in 1979 and 1982.

[5] The pay matrix helps to analyze the comparative salary position of each job classification with each of its counterparts. The matrix expands upon the traditional approach which limits comparisons of occupational averages to the highest and lowest levels or to setting a single job as the base for all others to be measured against. The difference between the resulting means of the paired comparisons in 1970 and 1982 was statistically significant at a 5-percent level. For a description of the matrix and its use, see Mark S. Sieling, "Interpreting pay structures through matrix applications," *Monthly Labor Review,* November 1979, pp. 41–45.

[6] In the survey coding structure, the level designations among various occupations are not synonymous: For example, the first level of attorneys equates to the third levels of accountants, chemists, and most other professional and administrative occupations. See table 2 for more details on job level equivalents. Classification of employees in the occupations and work levels surveyed is based on factors detailed in definitions which are available upon request.

Employment Cost Index continues to decelerate in second quarter

The Employment Cost Index (ECI), measuring changes in employer compensation costs, increased 1.1 percent in the 3 months ended in June. Wages and salaries alone rose 0.9 percent. The index stood at 107.5 for compensation costs (wages, salaries, and employer costs for employee benefits) based on June 1981 = 100. The ECI does not cover farm, private household, and Federal government workers and is not seasonally adjusted.

The deceleration in rates of increase for both compensation costs and for wages and salaries alone that began in 1981 continued to be widespread among occupational and industrial groups measured by the ECI. Compensation costs for all private nonfarm workers slowed to a 1.3-percent rise in the second quarter, down from 1.9

percent a year earlier. The corresponding wage and salary increase, 1.1 percent, was down from 2.0 percent a year earlier.

Workers in occupations and industries that typically receive the bulk of their wage adjustments in the second quarter showed relatively small gains. Transport equipment operatives, for example, posted a 0.9-percent wage increase. The advance was dampened by the recent trucking industry bargaining settlements that provided no specified wage increases and diverted part of the cost-of-living adjustment to maintain existing employee benefits. Over the past 5 years, second-quarter wage increases for transport equipment operatives ranged between 3 and 5 percent.

Wages for workers in the construction industry rose 1.3 percent in the second quarter—an unusally low increase for an industry with a heavy bargaining schedule in the spring and summer months. Second-quarter wage increases in construction ranged between 2 and 3 percent over the past 5 years.

A substantial deceleration in rates of increase in compensation costs and wages and salaries for the year ended in June 1982 compared with the preceding year also occurred. A particularly dramatic slowdown occurred in compensation cost increases for blue-collar workers in private industry. These costs slowed to a 7.0-percent increase in the year ended in June 1982, from a 10.5-percent rise in the year ended in June 1981. Wage increases alone for these workers slowed to 6.6 percent, down from 9.2 percent a year earlier.

Among white-collar workers, compensation costs rose 7.2 percent for the 12 months ended in June 1982 compared with 10.2 percent during the year ended in June 1981; their wages and salaries increased 7.3 percent, down from 9.4 percent in June 1981. Rates of change within the white-collar group varied substantially, however. Salesworkers' wages, which include volatile commission earnings, rose only slightly, 1.8 percent, for the June 1981–82 period in contrast to 10.2 percent for June 1980–81. However, wage increases for clerical workers, 8.3 percent for the 12 months ended in June 1982, were only slightly below the June 1981 advance of 8.8 percent.

Compensation costs for union workers rose 8.4 percent in the June 1981–82 period, contrasted to 11.5 percent a year earlier; union wage and salary increases dropped to 8.1 percent from 10.1 percent.

The slowdown was also evident for nonunion workers. Compensation costs increased 6.5 percent for the 12 months ended in June, down from 9.8 percent a year earlier; wage increases were 6.5 percent and 9.0 percent.

Compensation costs for State and local government employees, coverage introduced in June 1981, increased 9.3 percent over the year. Wages for these workers advanced 8.7 percent.

Additional data on second-quarter ECI results appear in the Current Labor Statistics section of the *Review*. ☐

GAO study focuses on problems of teenagers in labor market

Teenage unemployment, especially that of blacks, has been a concern among policymakers in recent years. According to the General Accounting Office (GAO), unemployment among black teenagers had increased sharply since 1970—along with a coincident rise in crime among all teens.

During 1949–80, the unemployment rate of white male teenagers stayed about three times higher than that of adult males. However, a substantial amount of the difference in these rates can be traced to teens voluntarily leaving jobs and the labor force.

Of all teenagers, those who are unemployed represent only a fraction; but this relatively small group is largely composed of poor and black persons. Therefore, high unemployment indicates a serious labor market problem for black teenagers.

GAO found that using labor force and employment status as the major criteria for ascertaining the need for teenage employment services was insufficient. Many teenagers lack the basic reading, writing, and computation skills required to compete and succeed in the job market, the congressional agency reported. Therefore, using a detailed analysis of the educational achievement, labor force status, and demographic characteristics of teens, GAO estimated that in 1977 "approximately 962,000 economically disadvantaged teenagers (16 to 21 years old) with a high school degree or lower attainment [were] most in need of Federal assistance." In subsequent years, the number in need depends on how long the average person needs assistance.

Since 1940, there have been extensive racial differences in teenage unemployment outside the South. From 1940 to 1950, nonwhite unemployment was lower in the South than white unemployment during the same period. However, since 1970, the difference has widened significantly in all U.S. regions.

GAO cities two major unresolved questions—why did the black teenage unemployment rate rise so sharply since 1970 and what are the underlying factors of the large and persistent (40 plus years outside the South) teenage unemployment difference? The study finds the most important reasons to be lower scholastic achievement, which, in turn, is a function of many family background variables, and inaccessibility to job vacancy information.

Factors which caused the racial dissimilarities in teenage labor participation were difficult to find. A partial explanation appears to be discouragement. Teenagers, who lack the personal qualifications necessary for a job, may have had a few bad employment experiences and then decided to withdraw from the labor force, discouraged over their predicament.

Some additional evidence on this issue is provided by an analysis of other possible causes. It shows that nearly three-fourths of the racial difference in labor force participation of out-of-school teens is explained by family background. The analysis also suggests that black teenagers living in households receiving Aid for Families with Dependent Children since 1960 may have been a cause of the relative worsening of labor force participation and unemployment rates among young blacks in recent years.

The claim that a teenager's inability to find a job can have an effect on his or her inclination to commit a crime seems plausible, the GAO study states. However, evidence on the causes of crime does not show how important the effect of unemployment is. Some studies suggest that it may be important, but they are flawed statistically and those that do not have these flaws deal with problems other than unemployment.

Inability to find a job is not the only factor potentially contributing to crime. Being unable to qualify for a job would logically seem much more conducive to criminal behavior, but, because of insufficient data, GAO has not been able to analyze this group. Regardless of a link to crime, teenagers unqualified for jobs are a serious social problem, GAO noted.

Considering the effect of low wage jobs versus unemployment may also be important. A "job-qualified" teenager might not be driven to crime by a moderately difficult period of unemployment, but, depending on aspirations, the prospect of a lifetime of very modest paying jobs might make crime attractive, according to the study.

On the bright side, GAO could find no evidence that being out of work occasionally as a teenager has any adverse effect on future labor market opportunities or successes. This held true even for out-of-school teenagers.

The GAO report concludes that studies should be conducted to find new ways of identifying and delivering education and training services to disadvantaged teens. Also, the agency believes that extended research is necessary on the link between teenage unemployment and crime. However, the study notes that the Department of Labor disagrees with both suggestions.

The full report, *Labor Market Problems of Teenagers Result Largely from Doing Poorly in School,* Washington, D.C., March 1982, (PAD-82-06), is available from the U.S. General Accounting Office, Document Handling and Information Services Facility, Gaithersburg, Md. 20760. ☐

Foreign Labor Developments

Political issues dominate ILO conference; new worker standards adopted

JULIE MISNER

The International Labor Organization (ILO), which this year had grown to number 150 member states, held its 68th general conference in Geneva, Switzerland. Alfonso Grados Bertorini, labor minister from Peru, was elected conference president. Although the conference adopted a number of new international labor standards, its deliberations were dominated by political issues, according to members of the U.S. delegation.

Founded in 1919, the ILO is unique among the United Nations' specialized agencies because of its tripartite structure. Worker and employer delegates enjoy equal and independent representation with governments. The ILO's mission is to promote employment, better working conditions, and worker and employer rights. Its tools include an annual conference, smaller technical meetings, research, and technical cooperation.

From the outset, all the elements were present to make the June 2–23 conference a political arena—the Israeli invasion of Lebanon, the Argentine-British hostilities in the Falkland Islands, apartheid, Poland, and the Iran-Iraq war. In reaction to these developments, some delegates used the conference plenary sessions to make political denouncements, often insulting other member states and straying far from the competence of the ILO conference. Other delegates, including those of the United States, reminded the conference of the one political issue germane to and at the very heart of the ILO: freedom of association. These participants lamented the renewed and heightened challenges to the principles of freedom of association and the unfortunate absence of Poland's Lech Walesa, who had participated in the 1981 conference—to the cries of "political interference" from Communist delegates.

The same political undercurrents were present—although usually unstated—in the technical work of the conference and during the special visits by French President Francois Mitterand and Pope John Paul II. But it was in three committees, which by their mandate and makeup were politically charged, that most of the drama of the conference developed: the Resolutions Committee, the Committee on the Application of Conventions and Recommendations, and the Committee on Apartheid.

Resolutions deadlock

Because it considers proposals unrelated to any item on the conference agenda, the Resolutions Committee is always a prime target for excessive and extraneous politicization. In theory, resolutions should deal with technical labor issues and propose new areas for ILO program emphasis. In practice, such resolutions are usually overshadowed by politically inspired resolutions having little to do with the ILO.

This year's Resolutions Committee was so beset by chaotic procedural wrangling (including one session adjourned because of a bomb threat and another adjourned following an almost total breakdown of order) that it ended in a deadlock. Not only were no resolutions forwarded to the conference plenary for adoption, but the committee was unable to adopt a report describing its work. Nevertheless, after 2½ weeks of chaos in committee, the anticipated blowup when the "non-report" reached the plenary never materialized.

Eighteen draft resolutions were submitted to the conference secretariat prior to the May 18 deadline (that is, 15 days before the opening of the conference, as required by ILO rules). The most potentially difficult and explosive of these was an Arab resolution concerning "The Observance of a Day of Solidarity with the Workers and People of Palestine, the Golan and the other occupied Arab Territories."[1]

The Arab bloc and its allies joined the committee in unprecedented numbers to ensure adoption of the resolution, but when results of the secret ballot for the five priority resolutions were announced, the Arab resolution—for the first time in almost 10 years—had not taken first place. The committee had decided to consider the draft resolutions in the following order:

- Freedom of association
- Arab resolution concerning Palestinian workers

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- Employers' group resolution on possible ILO funding of conference delegations
- Sudanese resolution on African refugees
- ILO participation in the International Youth Year

This meant that the discussion on the freedom of association resolution—which contained language unacceptable to the Soviet bloc—would have to be completed before the committee could consider amendments to the Arab resolution. What ensued, according to many knowledgeable participants and observers, was an apparently calculated disruption and blockage of the committee's proceedings, and the ultimate failure of the committee to agree on anything. Following a general discussion of the first three resolutions, the committee never progressed beyond the first 5 of 71 amendments to the freedom of association resolution. In its last sitting, the committee was even unable to adopt a report describing its lack of progress.

On the final day of the conference, the President noted the absence of a Resolution Committee report and concluded that there was, as a result, nothing to discuss. His statement, to the great surprise of many delegates who anticipated a major confrontation sparked by the Arabs' failure to win passage of their resolution, went unchallenged, and the conference quietly proceeded to the next item of business. However, the toll had already been taken the day before on the report of the Committee on the Application of Conventions and Recommendations.

Poland criticized

The Committee on the Application of Conventions and Recommendations faced a particularly difficult task this year, with 115 cases concerning approximately 70 countries. Among the politically sensitive cases on the agenda were Poland, the Soviet Union, Cuba, Czechoslovakia, Argentina, Nicaragua, Chile, and Bolivia. Coupled with the sheer number of cases to be examined, as well as the sensitive nature of some of them, were the emotional tensions surrounding the Israeli invasion of Lebanon and the clear disregard for the whole process of standards supervision on the part of the Eastern bloc.

Despite its frequently electric atmosphere, the Committee on the Application of Conventions and Recommendations for the most part continued to successfully use its new methods of work (that is, a new special list system for highlighting both cases of progress and problems in implementing standards) adopted in 1980. This system includes a heading called "continued failure to implement," in which are listed governments which violated ratified ILO standards for a number of years and have failed to cooperate with ILO efforts to bring their law and practice into line. This is the ILO's most serious form of censure.

In the committee's report, Chile was cited for "continued failure to implement" Convention 111 concerning discrimination in employment—in this case dismissals of persons from the public service because of their political opinions. The governments of Bolivia and Burma were highlighted in special paragraphs for their problems in implementing Convention 87 on freedom of association.

But it was the case of Poland which took and maintained center stage throughout the proceedings of the Committee on the Application of Conventions and Recommendations, both in terms of the substance of discussion as well as the influence it exerted over the subsequent work of the committee. The Government of Poland came under the scrutiny of the committee for its violations of freedom of association stemming from its December 1981 declaration of martial law and imprisonment of hundreds of Solidarity leaders and members—this immediately following a separate examination on the same subject by the Governing Body's Committee on Freedom of Association. Although the Polish government initially expressed its willingness to cooperate with the ILO's supervisory machinery, it reversed its position when the committee recommended that the case be highlighted in a special paragraph—even going so far as to call for a vote on that part of the committee's report. (The committee in its conclusions commended the Polish government's recent efforts and progress, but nevertheless expressed its deep concern regarding the infringements of Convention 87 and associated itself with the very strong recommendations of the Committee on Freedom of Association.)

Following some discussion as to whether such a vote could be taken—that is, after the set of conclusions had already been accepted by the committee—a vote by show of hands resulted in the adoption of the special paragraph. One week later, the committee unanimously adopted its full report. However, those who believed that the subject of Poland had been laid to rest were quite surprised when the committee report reached the plenary.

In plenary, just as conference President Alfonso Grados was about to move that the report of the Committee on the Application of Conventions and Recommendations be adopted by consensus, a delegate from the Soviet bloc took the floor to protest the special paragraph on Poland and requested that the report as a whole be put to a vote by the conference. What ensued were two successive votes (first a show of hands, then a record vote the next morning) which prevented the report from being adopted by lack of a quorum—although by a very narrow 8-vote margin.

A breakdown of the record vote on the Committee on the Application of Conventions and Recommendations report revealed that many Arab delegates had joined the Soviets to prevent a quorum from being obtained, at least partly because of their frustration over the events in the Resolutions Committee. Only twice before, in 1974 and 1977, has the conference similarly failed to adopt such a report. While the failure to adopt was disappointing, several delegates made powerful statements—starting with the U.S. Government—commending the work of the committee, supporting the other aspects of the ILO's machinery for the supervision of international labor standards, and pointing out that the conference's failure to adopt the report did not affect the ILO's continued scrutiny of events in Poland.

Conclusions on apartheid questioned

The stated task of the newly established permanent Committee on Apartheid was to review the Director-General's report on the application of the June 1981 "Declaration Concerning the Policy of Apartheid" in South Africa, which contained information on efforts to eliminate apartheid. The information had been submitted by governments and workers' and employers' organizations since adoption of the declaration. The committee's six sessions consisted primarily of a series of speeches denouncing apartheid and calling for measures—mostly economic—to combat it. Its conclusions outlined a number of recommended steps to be taken by governments and the private sector to reduce or eliminate economic relations with South Africa, including supplying information on foreign companies with investments in South Africa, and providing direct assistance to national liberation movements.

Both in the committee and in plenary, a significant minority of government and employer delegates, including those of the United States, stated that while they abhorred apartheid, they found unacceptable the conference's tendency to disregard the ILO's established procedures for due process and to take the organization "beyond its appropriate mandate and competence." The committee's conclusions took note of the reservations expressed by these members, and the anticipated, heated plenary discussion of the apartheid report never came to pass. The report was adopted without vote and without incident.

New labor standards adopted

The 1982 conference considered four technical agenda items. Two items resulted in the adoption of new Conventions and Recommendations, one in the minor revision of an existing Convention; the remaining item will undergo final discussion at the 1983 conference.

An ILO Convention is an international treaty that carries a legal obligation under international law for states which ratify it. A Recommendation, on the other hand, is simply what the name implies—a document which suggests specific measures that can be taken to implement labor policies. Recommendations are not subject to ratification and therefore bear no legal obligation.

Termination of employment. The conference adopted both a Convention and a Recommendation concerning the termination of employment at the initiative of the employer, updating a 1963 Recommendation. At the end of last year's discussion of this item, workers and employers had been diametrically opposed on virtually every point of the proposed standards, with governments divided according to their law and practice. The major controversy surrounded the amount of government regulation that is necessary and appropriate to protect workers against arbitrary and unfair dismissal.

This year the committee remained controversial and at times confrontational, but a small worker-employer working group did successfully propose shifting some of the more objectionable provisions from the Convention to the Recommendation and otherwise moderate the former. Nevertheless, the employers and a number of governments, including the United States, contended that the Convention adopted by the conference still relies too heavily on government intervention and too little on private initiative. As a result, they argued that the instrument is not sufficiently flexible and universal to be widely ratified and implemented.

Social security for migrant workers. The conference also adopted a new Convention (actually a revision of a 1948 Convention) concerning the social security rights of workers and family members who are employed outside their home countries. The new standard extends coverage to all forms of social security and opens the way for applying social security standards to self-employed persons as well as to salaried employees. Most of the provisions of the Convention would take effect as a result of bilateral or multilateral agreements between governments, though some provide for direct and immediate application as a consequence of a member state's ratification of the instrument.

Although U.S. legislation is not completely compatible with the provisions of the new Convention, and U.S. ratification is thus not likely in the foreseeable future, the entire U.S. delegation was able to support adoption of the instrument. The Convention was adopted in an overwhelming affirmative vote by the conference.

Next year, the conference will take up an unprecedented third discussion of the social security issue. This discussion, preceded by a tripartite meeting of social security experts, will formulate model provisions designed for bilateral and multilateral international social security agreements. These provisions will take the form of a Recommendation to supplement the new Convention.

Vocational rehabilitation. The 1982 conference held a general discussion which will lead to the possible adoption in 1983 of a Recommendation supplementing the Vocational Rehabilitation (Disabled) Recommendation of 1955. While the provisions of the original instrument are still relevant, new developments in the field have made it necessary to broaden its scope by updating and expanding its definitions of the terms "vocational rehabilitation" and "disabled." The conference did not accept the ILO secretariat's proposal to include among disabled persons the socially maladjusted, but proposed coverage in the revised instrument for all individuals whose prospects of securing and retaining suitable employment are substantially reduced as a result of "an impairment of a physical, mental, or psychological nature duly recognized by a competent authority."

During the committee's discussions, the workers' group unsuccessfully proposed that the supplementary standard on vocational rehabilitation should take the form of a Convention. While the committee's draft conclusions were easily adopted both in committee and in plenary, the workers are expected to rekindle their call for a Convention next year.

Revision of the Plantations Convention. In the shortest and quietest technical discussion in ILO history, the conference easily adopted a protocol revising Article One of the 1958 Convention concerning the Conditions of Employment of Plantation Workers. The objective of the revision was to limit the ILO's very broad definition of the term "plantation" and thereby pave the way for wider ratification and implementation of the instrument. There was no substantive discussion of conditions of work on plantations.

The revision of the Plantations Convention marks the first time that the protocol format has been used by the ILO conference. The new procedure eliminates the need for publishing an entire new text (only 1 article of 99 was changed) with a new number. In the future, governments will have the option of ratifying either version of the Plantations Convention.

Other work of the conference

In the Conference Finance Committee, which is composed only of government members, contributors to the ILO began—at the initiative of the United States—to take a closer and more critical look at the ILO's growing practice of using supplemental budget requests to finance so-called "unforeseen" expenditures, that is, in excess of the organization's biennial program and budget.

The Structure Committee, on the other hand, accomplished little more than to call for the reconstitution and resumption of the Working Party on Structure (now in its 9th year) and to request that an item on structure be included in the 1983 conference agenda. The structure question involves, among other things, proposed changes in the size and composition of the ILO's Governing Body and its relationship to the conference. Although some of the issues have been ironed out, the structure question is being considered as a "package" and nothing can be resolved until complete agreement is reached. ☐

FOOTNOTE

[1] Sponsors were the government delegations of Algeria, Democratic Yemen, Iraq, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Morocco, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates, and Yemen.

Canadian legal approaches to sex equality in the workplace

HARISH C. JAIN

During the last several decades, labor market discrimination against women has become a matter of considerable social and political concern. The rising female labor force participation rate over the years and its projected further increase render this issue even more important.[1] This type of discrimination can take conceptually two forms: employment discrimination and pay discrimination. The former can be defined as unequal job levels for men and women with similar qualifications, and the latter as unequal pay for men and women who have equal qualifications and are performing similar jobs, jobs of equal value, or both (that is, comparable worth).[2]

In this report, equal employment and equal pay legislation are discussed; then, selected cases decided by courts and boards of inquiry are analyzed; and finally, conclusions and policy implications are presented.

Public policy

Equal pay. All Canadian jurisdictions have laws which require equal pay for equal work within the same establishment, without sex discrimination. These provisions have been incorporated either in human rights legislation (Federal jurisdiction, Alberta, British Columbia, New Brunswick, Newfoundland, Northwest Territories, Prince Edward Island, and Quebec) or in labor standards legislation (Manitoba, Nova Scotia, Ontario, Saskatchewan, and Yukon Territory).

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At the Federal level, equal pay legislation was first put into effect in 1956 and amended in 1967. It required equal wages for men and women performing the same or similar work under the same or similar working conditions on jobs requiring the same or similar skill, effort, and responsibility. This legislation remained in effect until 1977, when it was replaced by the Canadian Human Rights Act embodying the equal value principle. According to the act, men and women performing work of equal value (regardless of whether the work is similar) must be paid equal wages. The act also elaborates on how the value of work may be assessed; section 11 (2) specifies that in assessing the value of work performed by persons employed in the same establishment, the criterion to be applied is the composite of skill, effort, and responsibility required in the performance of the work and the conditions under which the work is performed. The Quebec legislation calls for equal pay for equivalent work.[3]

Compared with the Federal and Quebec jurisdictions, the various provincial jurisdictions follow a narrow definition of equal work, such as "same work," "similar work," or "substantially the same work." In 6 of the 12 jurisdictions (Ontario, Nova Scotia, New Brunswick, Newfoundland, Prince Edward Island, and Saskatchewan), legislation also specifies factors on which equality of work may be based. These factors are education, skill, experience, effort, responsibility, and working conditions.

The legislation in a majority of jurisdictions provides for a general exception permitting differentials between the pay of men and women based on any factor other than sex. Other jurisdictions list specific exceptions which include seniority, work experience, and merit.

Several court decisions have helped to provide a more precise interpretation of equal pay legislation in Canada.[4] In the Greenacres Nursing Home case in 1970, the Ontario Court of Appeal ruled that "the same work" did not necessarily imply "identical work" and that job comparisons should be based on work performed rather than on formal job descriptions or terms of employment. In the Riverdale Hospital Case in 1973, the concept of equal work was further broadened. Here, the Ontario Court of Appeal ruled that different job titles do not necessarily indicate different work, slightly different job assignments do not make the work unequal, and within an occupation, if some men do the same work as women, equal pay is justifiable for the whole occupation. The last point was clarified in a case in which the Saskatchewan Court of Appeal declared that even when only 5 of 46 male caretakers performed work similar to female cleaners, it should be considered a sufficient number within the provincial equal pay legislation, and that "some" employees being paid a rate of pay higher than others doing similar work warrants equal pay.[5]

The courts have also dealt with what might properly constitute "a factor other than sex" in justifying male-female pay differentials. In two decisions at the Federal level—the C.T.V. Television Network case in 1975 and the La Societe Radio-Canada case in 1977—the Court ruled that differences in the quality of work as assessed by management are sufficient to justify unequal pay. The Court acknowledged that such an assessment might be subjective and, thus, might involve an error of judgment; however, the Court held that it was not within the competence of the judiciary to review management's judgment. The courts have also ruled on whether the existence of two separate bargaining units could be considered "a factor other than sex" to permit pay differentials between them. The Alberta Court of Appeals in the Gares case in 1976 decided against it.[6]

Equal employment. As in the case of equal pay, all jurisdictions in Canada have also enacted human rights legislation. All the statutes prohibit discrimination on the basis of race, national origin, color, religion or creed, sex, marital status, and age. The age groups protected vary among jurisdictions, with the most common being between the ages of 40 or 45 and 65. Discrimination due to physical disability is proscribed in seven jurisdictions. Other prohibited grounds include sexual orientation in Quebec and pardoned offenses in the Federal jurisdiction.[7] These statutes apply to employers, employment agencies, and trade unions. Discrimination is prohibited with respect to advertising and terms and conditions of employment including promotion, transfer, and training.

Indirect or systemic discrimination. Both direct[8] and indirect employment discrimination is prohibited. The Canadian Human Rights Act, as well as numerous decisions by boards of inquiry in several provinces, has borrowed the concept of indirect discrimination from U.S. case law and relevant British legislation, that is, the Race Relations Act and the Sex Discrimination Act.

In the United States, the concept was articulated by the Supreme Court in *Griggs v. Duke Power Co.* in 1971. The Court unanimously endorsed a results-oriented definition of what constitutes employment discrimination and indicated that intent does not matter; the consequences of an employer's actions determine whether it may have discriminated under Title VII of the Civil Rights Act.[9]

Enforcement. In the enforcement of both the equal pay and equal employment legislation, the method common to all jurisdictions is investigation based on employee complaints. (Although, sometimes, Human Rights Commissions may file a complaint or commence an investigation.) All the acts provide for the settlement of complaints, if possible, by conciliation and persuasion and for an initial, informal investigation into a complaint by an officer who is directed to effect a settlement. If conciliation fails, a board of inquiry is usually appointed; it may issue orders for compliance, compensation, and so on. This order may be appealed to the Supreme Court of the Province on questions of law, fact, or both. The Federal jurisdiction allows an appeal by either the complainant or defendant to a review tribunal, if the original tribunal had fewer than three members.[10] In practice, the emphasis has been to concentrate on effectuating a satisfactory settlement rather than legal guilt.[11]

Analysis of cases

Methodology. In order to study the incidence of pre- and post-employment sex discrimination, 52 board of inquiry and court cases were analyzed.[12] These were all the cases that were adjudicated by boards of inquiry, and in some cases by courts, from 1975 to 1980, in Alberta, British Columbia, New Brunswick, Nova Scotia, Ontario, and Saskatchewan. (To our knowledge, no relevant cases were decided by either boards or courts in other jurisdictions.)

Although the bulk of a typical human rights commission's workload consists of cases that do not go to a board, the data on, for example, conciliated cases or cases under investigation are confidential and, therefore, are not analyzed.

The cases covered a cross-section of industries and institutions and were not confined to blue-collar or lower level white-collar workers; professional, technical, and to some extent administrative and managerial workers were also involved. A majority of the cases involved secretarial workers (38 percent) and unskilled laborers (21 percent).

Pre- and post-employment discrimination cases. Pre-employment discrimination cases decided by selected boards of inquiry include allegations regarding male-female job stereotypes, height and weight restrictions, refusal to interview female applicants, sex not being a bona-fide occupational requirement, discriminatory job interviews, and discriminatory job advertisement.

Decisions of boards of inquiry have prohibited such pre-employment barriers as height and weight requirements for a police constable's job,[13] and for jobs requiring physical strength;[14] discriminatory or sex stereotyped questions in job interviews;[15] and employers' misconceptions and stereotypes about traditionally male or female jobs such as not considering: a woman for the job of a cost accountant trainee,[16] a man for the position of a copywriter,[17] a woman as a rental clerk for a rental truck agency,[18] and a woman for heavy-duty janitorial work.[19]

A bona-fide occupational qualification exemption with respect to sex discrimination has been very narrowly construed by the boards. Employers' arguments such as: work being too strenuous for a woman,[20] customer preference for service from either a man or a woman,[21] restaurant atmosphere is created by having all female waitresses,[22] lack of restroom facilities for women,[23] and male-dominated and remote worksite,[24] have been rejected by boards of inquiry in several jurisdictions.

Post-employment discrimination cases deal with casual workers denied full-time jobs; promotion; dismissal; reemployment; pregnancy; and sexual harassment.

Casual to permanent employment. At least three boards of inquiry in Saskatchewan,[25] New Brunswick,[26] and Ontario[27] have dealt with complaints from women regarding their attempt to switch from part- to full-time permanent jobs with the same employer. In these cases, the boards of inquiry held against the employers for denying women permanent positions because of their sex.

Pregnancy. In British Columbia, the "reasonable cause" provision of the Human Rights Code has had a major impact in broadening the scope of prohibited grounds of discrimination that otherwise would have been excluded.[28] In one case, a British Columbia board of inquiry ruled that a woman who was fired from her job as a reservation clerk, when she told her employer that she was pregnant, had been discriminated against.[29] In another case, a board of inquiry allowed sick leave benefits to teachers absent from employment for sickness caused or aggravated by pregnancy, under the "reasonable cause" provision.[30]

Sexual harassment. In a precedent-setting decision, an Ontario board of inquiry declared in August 1980 that sexual harassment is discrimination based on sex, according to section 4(1) of the Human Rights Code. In this case, *Anna Korchzak and Cherie Bell v. Ernest Lada and the Flaming Steer House Tavern, Inc.*, the complainants had alleged that they had been sexually harassed by their employer, the owner of the restaurant. Although the complainants lost, Board Chairman Owen Shime declared that " . . . there is no reason why the law, which reaches into the work place so as to protect the work environment from physical or chemical pollution or extremes of temperature, ought not to protect employees from negative psychological and mental effects where adverse gender-directed conduct emanating from a management hierarchy may reasonably be construed to be a condition of employment." Thus, sex as a prohibited ground of discrimination includes sexual harassment where because of a worker's sex some term or condition of employment is modified by the sexual harassment.[31]

Indirect or systemic discrimination. In 7 of the 52 cases, systemic discrimination was found. An analysis of these cases revealed that the approach adopted in the *Griggs* case, which was previously mentioned, has now been widely emulated in Canada; malice or intent to discriminate is no longer a relevant factor. For example, in a case involving a female applicant, the board decided that the Commission's minimum height requirement of 5 feet, 10 inches "virtually eliminates women as police constables," as only 5 percent of Canadian women are that tall.[32]

Remedies ordered. In most cases in which discrimination was found and that went before a board of inquiry, more than one remedy was ordered. The most frequently given one was compensation for lost wages; the other remedies (in order of frequency) were orders to employers to:

- display the relevant human rights code in predominant places in employer premises;
- stop their unlawful conduct;
- compensate for general damages;
- compensate for expenses incurred by the complainant;
- compensate for pain and humiliation suffered by the complainant;
- reinstate the complainant;
- send a letter of apology to the complainant;
- offer employment or interview at the next available opening;
- have the relevant human rights commission conduct a human rights workshop for company executives;
- amend application form or other selection tools, or both;
- send a letter of apology to the relevant human rights commission; and
- provide separate facilities for women.

Conclusions

The cases discussed in this report seem to indicate that entry and training requirements should be carefully established and maintained only if they are necessary prerequisites for employment and promotion. Therefore, employers should develop clear equal opportunities policies to ensure that they are not discriminating by default of appropriate action and to give themselves some safeguard in case their policies are challenged. For instance, organizations must issue explicit instructions regarding the employment interview through their personnel departments. Interviews should be structured and only questions of direct relevance to the job should be asked.

Organizations should keep in mind that, over the years, substantial evidence of validity has accumulated for many of the predictors. When comparing employment tests, ability tests and work sample tests—relative to personality and interest tests—have proved the most valid. References, recommendations, and interviews usually have been found to be less valid as predictors of job success.[33] Choices of predictors to be used in staffing systems should be governed by the nature of the job, and the validity of the predictors. Staffing systems can be improved considerably by standardization (to obtain reliable information), and by the validation process. Emerging research evidence seems to indicate that validity of tests need not be specific to the situation.[34]

There would appear to be three broad types of human resource policies which might be used to assist minority workers.[35] First, taking labor supply and demand as given, one might attempt to make the labor market operate more efficiently by means of placement activities, worker counseling, and labor mobility or related measures, which would be appropriate regardless of the labor market structure. Second, one might attempt to upgrade the supply of minority workers by means of greater investment in education and training. Third, following the labor market segmentation approach, one might recommend solutions lying on the demand side rather than the supply side, with a requirement for government employment and expenditure policy to favor those in the secondary sector. This would include equal opportunity and affirmative action programs.

Critics have suggested changes in both the scope and enforcement of equal opportunity legislation in Canada in order to improve its effectiveness. Instead of the case-by-case approach adopted by most human rights commissions, class action suits, routine investigation of firms,[36] and contract compliance have been advocated.

Equal opportunity legislation may be a necessary condition for the elimination of sexual inequality. But legal approaches are limited because they operate only on the demand side of the problem (that is, the employer side) and do little to change supply (that is, education and training). Moreover, the existing empirical evidence points to only a limited impact of such legislation; the small number of complaints filed is apparently because of ignorance of legislation, lack of resources, and fear of employer reprisals.[37] However, these and other cases do have an educational effect and may have served to enhance public awareness of the need to provide equality of opportunity. □

—— FOOTNOTES ——

[1] In January 1982, women accounted for more than 40 percent of the Canadian labor force. By the year 2000, the labor force participation rate of women is expected to approach that of men. See Carole Swan, *Women in the Canadian Labour Market* (Ottawa, Ontario, Employment and Immigration Commission, July 1981).

[2] Naresh C. Agarwal, "Pay discrimination: Evidence, policies and issues," in Harish C. Jain and Peter J. Sloane, *Equal Employment Issues: Race and Sex Discrimination in the USA, Canada and Britain* (New York, Praeger Publishers, 1981).

Harish C. Jain, "Employment and pay discrimination in Canada: Theories, evidence and policies," in John Anderson and Morley Gunderson, eds., *Union-Management Relations in Canada* (Toronto and Reading, Mass., Addison-Wesley, 1982).

[4] Harish C. Jain, *Ibid.* Also see Naresh C. Agarwal, "Pay discrimination."

[5] *Ibid.*

[6] *Ibid.*

[7] Harish C. Jain, "Race and sex discrimination in Canada," *Relations Industrielles*, forthcoming.

[8] *Ibid.*

[9] In this case, the Court struck down educational requirements and employment tests, stating that these requirements could not be justified on the grounds of business necessity because they were not valid or related to job performance, and they had adverse impact because they screened out a greater proportion of blacks than whites. However, if business necessity could be proved, that is, if the educational and testing requirements that had disproportionate or adverse impact on minorities were related to job performance, then the practice was not prohibited.

[10] Harish C. Jain, "Employment and pay discrimination."

[11] Daniel G. Hill, "The Role of the Human Rights Commission: The Ontario Experience," *University of Toronto Law Journal*, Vol. 19, 1979, pp. 390–401.

[12] Harish C. Jain, "Race and sex discrimination."

[13] *Ann Colfer v. Ottawa Board of Commissioners of Police*, 1978, an Ontario board of inquiry decision.

[14] *Kathleen Grafe v. Sechelt Building Supplies (1971) Ltd.*, a British Columbia board of inquiry.

[15] *Kerry Segrave v. Zeller's Ltd.*, 1975, an Ontario board of inquiry decision.

[16] *Stairs v. Maritime Cooperative Services Ltd.*, 1975, a New Brunswick board of inquiry decision.

[17] *Francis Perry v. Robert Simpsons Ltd.*, 1976, a Nova Scotia board of inquiry decision.

[18] *Betty-Ann Shack v. London Drive-Ur-Self Ltd.*, 1974, an Ontario board of inquiry decision.

[19] *E. Garnett v. Kompleat Industries Ltd.*, 1979, a British Columbia board of inquiry decision.

[20] *Betty-Ann Shack.* Similarly, in the *David J. Foreman et al v. Via Rail Canada Inc.*, 1980, a Federal case, the tribunal held that Via's acuity standards were not based on a bona-fide occupational requirement because Via had failed to justify the standards. This was not a sex discrimination case; however, it is an important bona-fide occupational case.

[21] *Donald J. Berry v. The Manor Inn*, 1980, a Nova Scotia board of inquiry decision.

[22] *Kesterton v. Spinning Wheel Restaurant*, 1975, a British Columbia board of inquiry decision.

[23] *Jean Tharp v. Lornex Mining*, 1975, a British Columbia board of inquiry decision.

[24] *Ibid.*

[25] *Gail Oliver v. Her Majesty the Queen in right of Saskatchewan as represented by the Minister of Highways and Transportation of Saskatchewan*, 1976, a Saskatchewan Human Rights Commission formal inquiry decision.

[26] *Shirley Naugler v. The New Brunswick Liquor Corporation*, 1976, a New Brunswick board of inquiry decision.

[27] *Hetty Hendry v. L.C.B.O.*, 1980, an Ontario board of inquiry decision.

[28] Bill Black, " 'Reasonable cause' in Human Rights Legislation," *Labour Research Bulletin*, Vol. 9, February 1981.

[29] *H.W. v. Riviera Reservations*, 1976, a British Columbia board of inquiry decision.

[30] *Kerrance Gibbs and Surrey Teachers Association v. Board of School Trustees School District #36 (Surrey, B.C.)*, 1979, a British Columbia board of inquiry decision.

[31] *Anna Korchzak and Cherie Bell v. Ernest Lada and the Flaming Steer Steak House Tavern Inc.*, 1980, an Ontario board of inquiry decision.

[32] *Ann Colfer v. Ottawa Board of Commissioners of Police*, 1978, an Ontario board of inquiry decision.

[33] Herbert G. Heneman III, Donald P. Schwab, John A. Fossum, and Lee D. Dyer, *Personnel/Human Resource Management* (Homewood, Ill., Richard D. Irwin, 1980).

[34] Frank L. Schmidt and John E. Hunter, "Development of a general solution to the problem of validity generalization," *Journal of Applied Psychology*, Vol. 62, October 1977, pp. 529–40. Also see, Marvin D. Dunnette and Walter C. Borman, "Personnel Selection and Classification Systems," *Annual Review of Psychology*, Vol. 30, 1979, pp. 477–525; Frank L. Schmidt, John E. Hunter, Robert C. McKenzie and Tressie W. Muldrow, "Impact of valid selection procedures on work-force productivity," *Journal of Applied Psychology*, Vol. 64, December 1979, pp. 609–26; and Mary L. Tenopyr, "Trifling he stands," *Personnel Psychology*, Vol. 34, Spring 1981, pp. 1–17.

[35] Harish C. Jain and Peter J. Sloane, *Equal Employment Issues.*

[36] Apparently, routine investigation of firms does bring increased backpay settlements. For instance, 157 investigations and routine audits under Ontario's equal pay regulations resulted in $284,000 of salary increases and backpay settlements for female employees over a 10-month period, April 1980 to January 1981. Thirty-six employers were found guilty in cases involving 134 women. The beefed-up inspection procedures by the Ministry of Labour were made possible by the hiring of 11 officials who were added to the Ministry's equal pay monitoring team in Spring 1980. See *Globe and Mail*, Feb. 27, 1981, p. B-8. A comparison of previous statistics highlights the role of routine audits in increasing backpay settlements. In 1979–80, nine employers were found guilty involving 44 employees and $56,212 in settlement; in 1978–79, eight employers involving 29 employees were found guilty and the settlement was $8,311; in 1977–78, nine employers involving 20 employees were found guilty and the settlement was $6,672.67. The exception to the rule was during 1976–77 when 29 employers and 452 employees were involved and the settlement was $535,966.02. However, during 1975–76, the settlement sum of $31,248.88 was in line with other years and involved 17 employers and 76 employees. These figures were provided by the Women's Bureau of the Ontario Ministry of Labour.

[37] *The Status of Women in Canada* (Ottawa, Ontario, Information Canada, 1970).

Major Agreements Expiring Next Month

This list of collective bargaining agreements expiring in November is based on contracts on file in the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more.

Employer and location	Industry	Labor organization[1]	Number of workers
Allis-Chalmers Corp. (La Porte, Ind.)	Machinery	Auto Workers	1,000
Allis-Chalmers Corp. (West Allis, Wis.)	Machinery	Auto Workers	1,900
Apartment Building Owners and Managers Association of Chicago (Illinois)	Services	Service Employees	3,000
Armstrong Cork Co. (Lancaster, Pa.)	Miscellaneous manufacturing	Rubber Workers	2,000
Bendix Autolite Corp. (Michigan)	Transportation equipment	Auto Workers	1,200
Carrier Corp. (Syracuse, N.Y.)	Machinery	Sheet Metal Workers	3,250
Central States Area Tank Truck Agreement (Interstate)[2]	Trucking	Teamsters (Ind.)	15,000
Chain and Independent Food Stores (Wisconsin)[2]	Retail trade	Food and Commercial Workers	2,300
Colgate-Palmolive Co. (Jersey City, N.J.)	Chemicals	Employees Association, Inc. of Colgate-Palmolive Co. (Ind.)	1,200
Film Exchange Employees Agreement (Interstate)[2]	Amusements	Theatrical Stage Employees	1,500
Food Employers Council, Inc. (Los Angeles, Cal.)	Retail trade	Food and Commercial Workers	6,500
General Telephone Co. of Indiana (Indiana)	Communication	Electrical Workers (IBEW)	1,550
Graphic Arts Association of Delaware Valley, Inc. (Pennsylvania)	Printing and publishing	Graphic Arts	1,200
Greater Boston Hotel and Motor Inn Association (Boston, Mass.)	Hotels	Hotel Employees and Restaurant Employees	3,000
Hotel and Motel Association of Greater St. Louis (St. Louis, Mo.)	Hotels	Hotel Employees and Restaurant Employees	2,500
ICI United States, Inc. (Charlestown, Ind.)	Fabricated metal products	Chemical Workers	1,250
Londontown Corp. (Interstate)	Apparel	Clothing and Textile Workers	1,950
Retail Distribution Agreement (San Diego, Cal.)[2]	Retail trade	Food and Commercial Workers	1,200
United States Potters Association (Interstate)	Stone, clay, and glass products	Potters	1,500
USAIR (Interstate)	Air transportation	Air Line Pilots	1,100
United Aircraft Corp., Pratt and Whitney Aircraft Division, 4 agreements (Connecticut)	Transportation equipment	Machinists	18,350
	Government activity	**Labor organization[1]**	
Pennsylvania: Pittsburgh Board of Education	Education	American Federation of State, County and Municipal Employees	1,050

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[1] Affiliated with AFL-CIO except where noted as independent (Ind.).

[2] Industry area (group of companies signing same contracts).

Developments in Industrial Relations

Westinghouse workers to contribute to pensions

Only minutes before a July 25 strike deadline, Westinghouse Electric Corp. and three electrical workers' unions agreed on 3-year contracts that included a "contributory" pension plan. In the 1979 negotiations, Westinghouse's demand that workers begin financing part of their pensions resulted in a 7-week strike by the three unions and other union members of the Coordinated Bargaining Committee formed in 1965 to strengthen bargaining with Westinghouse and General Electric Co. Westinghouse maintained that partial financing of pensions by employees was necessary to alleviate a competitive cost advantage held by General Electric, which has had a contributory plan since the early 1950's.

The unions involved were the International Brotherhood of Electrical Workers, the International Union of Electrical, Radio and Machine Workers, and the United Electrical Radio and Machine Workers. All three unions bargain with Westinghouse on a "national" basis for about 31,000 workers. A union official said the decision was not a "concession" and that the unions were not "philosophically opposed" to the concept if Westinghouse made several changes in its proposal. The unions' negotiators also maintained that the Westinghouse contributory plan was better than that at General Electric.

The Westinghouse plan requires employees to contribute an amount equal to 3 percent of annual earnings in excess of $14,700, in contrast to the $12,000 threshold at General Electric. Minimum monthly benefits were increased to a range of $14 to $17.50 a month (depending on preretirement average annual earnings), compared with a range of $12 to $17.50 at General Electric. In 1984, the range will rise to $14 to $19.50 at both companies. The preretirement average annual earnings for Westinghouse retirees will be based on the last 3 years of work, compared with the last 5 years at General Electric. All Westinghouse workers were also given the option of staying in the existing company-financed plan, with the benefit rate remaining at $13 a month.

The pension changes negotiated by the three electrical unions (and subsequently accepted by the other Coordinated Bargaining Committee unions for 9,000 additional workers) were identical to those the Federation of Westinghouse Independent Salaried Unions negotiated in July for 11,000 employees. The Federation had already agreed to a contributory pension plan in its 1979 settlement.

Except for the pension differences, all of the Westinghouse contracts provided for essentially the same wage, benefit, and job security terms as at General Electric (see *Monthly Labor Review*, September 1982, 44–45).

Steel industry update

There were several occurrences in the financially pressed steel industry. The United Steelworkers rejected an employer proposal for labor-cost consessions and efforts to end alleged "dumping" of foreign steel in the United States continued with no clear outcome in sight.

In announcing the rejection of the industry's consession proposals and the termination of negotiations, Steelworkers President Lloyd McBride said the bargainers "have spent a great deal of time trying to find answers to our mutual problems and we simply have failed." He said the talks with the eight Coordinating Committee Steel Companies, which generally set the bargaining pattern for other producers, had floundered because the employers' final proposal "went too far" by indicating "if you can't accept that [the proposals], there's no deal." McBride contended that the proposals called for much greater sacrifices than the revised contracts the Auto Workers negotiated with Ford Motor Co. and General Motors Corp.

The unanimous decision by the union's Basic Steel Industry Conference (which consists of 400 local union officials) drew a bitter response from J. Bruce Johnston, U.S. Steel Corp. vice president and chief industry bargainer. Johnston said that the union's refusal to accept wage and benefit cuts suggests to unemployed steelworkers that their problems will be solved by a recovery in steel order volume, when in fact, it is "their ever-

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"Developments in Industrial Relations" is prepared by George Ruben of the Division of Developments in Labor-Management Relations, Bureau of Labor Statistics, and is largely based on information from secondary sources.

increasing wage costs [that] are pulling against any sustained recovery for domestic steel."

The rejected proposal would have superseded the remaining year of the current 3-year contract and would have terminated on August 1, 1985. It called for a freeze on wages; suspension of automatic quarterly cost-of-living adjustments; elimination of extended vacations; a 50-cent-an-hour increase in employer financing of Supplemental Unemployment Benefits; guaranteed durations of benefit payments to laid-off workers with 10 years of service; establishment of stock ownership and individual retirement accounts; and a possible contract reopening linked to the level of steel production.

McBride said the parties were not considering a renewal of the Experimental Negotiating Agreement. This opens the possibility of an industry strike if the parties are unable to agree on a new wage-and-benefit contract in 1983. The Experimental Negotiating Agreement, which was introduced in 1973, essentially banned industrywide strikes at the termination of agreements in exchange for an "economic floor" under wage-and benefit settlements.

Meanwhile, Secretary of Commerce Malcolm Baldrige announced that the Reagan Administration would not reopen negotiations with six European nations to gain import limitations. The parties had reached agreement on limits, but the accord was rejected by the seven domestic producers that had filed the unfair trade charges in January against South Africa and Brazil, as well as the European countries. The producers had charged that some nations were unfairly subsidizing steel produced for export to the United States.

Baldrige said a resumption of talks would not be fruitful because "there comes a time when both sides say enough is enough." He maintained that U.S. negotiators had gained all the import restrictions the domestic companies had sought, but the U.S. companies later decided they wanted lower import quotas.

In another aspect of the controversy, the Department of Commerce announced a preliminary finding that the steel products from the six countries were, in fact, being sold in the United States at unfairly low prices. As a result, importers of steel from these nations were required to begin posting bonds to assure payment of penalty duties that could be imposed when the department issues a final ruling later in the year.

Western Union contract ends 90-minute strike

A 90-minute strike against Western Union Telegraph Co. ended when the parent Western Union Corp. and the United Telegraph Workers agreed on a 3-year contract. About 8,800 workers were involved. Later, the Communications Workers agreed to virtually identical terms for the 900 Western Union Telegraph employees it represents in the New York City area.

The United Telegraph Workers accord provided for a reported 31.066-percent increase in wages and benefits over the term, including a 30-percent rise in pension rates. The wage portion of the package calls for increases of 8 percent the first year, 7 percent the second, and 7.1 percent the third. With these increases, pay will average $10.43 an hour, according to the union.

Other terms included additional pay increases for some job classifications, a new optical care plan, and a $50,000 increase in major medical coverage, to $200,000.

Union mergers

A 91,000-member Glass, Pottery, Plastics and Allied Workers union resulted from the merger of the Pottery Workers and the Glass Bottle Blowers unions. Speaking to a special convention of the Pottery Workers, union president James E. Hatfield said the move was necessary to increase "unity and strength" in negotiations with employers. Hatfield will head the new organization, and Pottery Workers' President Lester H. Null will serve as assistant president. The 11,000-member Pottery Workers, which, like the Glass Blowers, traced its origins to the 1800's, had been an autonomous affiliate of the Seafarers from 1976 to 1978.

A 70,000-member Aluminum, Brick and Glass Workers International Union resulted from the merger of the Aluminum, Brick and Clay Workers and the Glass and Ceramic Workers. Aluminum Workers President Lawrence A. Holley will head the new union and will be assisted by Glass and Ceramic Workers President Joseph Roman.

Merger talks between the Steelworkers and the Insurance Workers failed for the second time. The first round of consolidation talks ended in 1980, when the unions were unable to agree on a dues structure. This also was the main barrier to success in the recent talks. The executive board of the Insurance Workers rejected the proposal because of concerns that the formula—1.15 percent of 80 percent of the agents' average earnings—would amount to $20 to $25 a month. Current monthly dues are $11 a month for the Insurance Workers and 2 hours of pay for the Steelworkers.

AFL-CIO Executive Council holds summer session

The summer session of the AFL-CIO Executive Council focused on the economy. In 1 of 16 policy statements, the council charged that Reagan Administration economic actions were pushing "the lowest-paid workers into a frightening abyss of subpoverty" and they are increasingly being joined "by workers with valuable, hard-won skills who previously had a respected place in the community." Further, the council contended, the damage was being exacerbated by "deep budget cuts in social programs at the exact moment the recession makes them so needed."

In a move to strengthen workers' role in the 1984 presidential campaign, the council decided that the Federation's general board (which consists of officials from all the affiliated unions) will meet before the first political primary to decide whether to endorse a candidate. In recent presidential campaigns, the member unions were not unified in their choice and entered the campaign later, which reduced their role in the selection, according to Federation officials. Federation President Lane Kirkland said that member unions will not be bound to back any candidate endorsed by the general board.

In other actions, Kirkland announced formation of committees to examine the changing work force and the organizing outlook; develop and promote greater participation by retirees in attaining labor's objectives; and coordinate efforts to defeat the proposed constitutional amendment requiring a balanced Federal budget.

Maintenance of Way Employees convene

Delegates to the quadrennial convention of the Maintenance of Way Employees approved a plan that could lead either to an autonomous division or a separate union for Canadian members. The 450 delegates, meeting in Vancouver, British Columbia, unanimously endorsed the proposal in a voice vote. The delegates also amended the constitution to provide for the U.S. vice president and executive board members to be elected by delegates from their region, rather than by all U.S. delegates. In other affairs, Ole M. Berge was elected to another term as president of the 120,000 member union, and Geoffrey N. Zeh, the union's general counsel and research director, defeated incumbent B.L. Sorah for the vice presidency.

Electrical workers in New York get raises

About 7,500 workers were covered by a 2-year contract negotiated between the International Brotherhood of Electrical Workers and the Niagara Mohawk Power Co. of Syracuse, N.Y. Wages increased by 9.5 percent on June 1, and will rise an additional 9 percent on June 1, 1983. New employees will be paid $1 an hour less than the current starting rate. Prior to the settlement, pay averaged $11.19 an hour for the 1,900 clerical workers and $11.48 for other workers.

Other terms included a raise in normal pensions, which will be financed by increasing the number of years used in calculating career average annual salary; $300,000 major medical coverage, instead of $200,000; free eye examinations every 2 years for 500 customer service representatives who use video display terminals regularly; changes in work schedules, including one that requires some employees to work as late as 9 p.m. to read the meters of customers who are not home during usual business hours; and a raise (to $20) in the bonus paid to employees who discover a theft of service.

Accord ends 7-week casino strike

Carpenters, painters, and maintenance workers at three hotel-casinos in Atlantic City, N.J., approved a 5-year settlement that was later extended to other hotel-casinos. The accord, which ended a 7-week strike at the Playboy, Bally's Park Place, and Caesar's Boardwalk Regency, called for a 7-percent pay increase in the first year, 8 percent in each of the next 3 years, and 7 percent in the final year. The previous wage rate was $10 an hour for the employees, who are represented by the Operating Engineers, Carpenters, and Painters unions.

The casinos also agreed to pay 25 cents an hour into an annuity fund for the employees during the last 6 months of the contracts. The money will be distributed at retirement, transfer out of the local union, or death.

Wages of Oregon State employees frozen

The State of Oregon, which has been experiencing budget problems because of the economy and, in particular, the severe cutbacks in its lumber and wood products industry, received some aid when State employees agreed to give up $20 million in wages. The Oregon Public Employees Union, which represents half of the workers, agreed to a wage freeze for the fiscal year beginning July 1. The union's 17,000 members had been scheduled for pay increases of 3 percent on July 1 and November 1 of 1982 and March 1, 1983 under their current 2-year contract, negotiated in 1981. In exchange for the freeze, the workers will receive 6 additional paid vacation days during the 12 months.

Instead of a pay freeze, the Teamsters agreed to reduce the paid workweek of State employees it represents to 37.5 hours, from 40.

The pay increases and the 40-hour week will be restored after July 1, 1983. The State also negotiated comparable concessions with 10 other unions.

NLRB orders company to bargain with union

In a departure from usual practice, the National Labor Relations Board ordered a company to bargain with a union even though the union was unable to show support by a majority of the workers. The board said the bargaining order was warranted because the firm, Conair Corp. of Edison, N.J., had engaged in "outrageous and pervasive" conduct to counter an organizing campaign by Local 222 of the Ladies Garment Workers union.

According to the board, the union had obtained authorization cards from 46 percent of the 380 workers early in 1977, but Conair, a maker of hair and beauty care products, had then initiated a massive and unrelenting campaign to defeat the drive. Some of the illegal tactics cited by the board included threats to close the plant and move the operations to Hong Kong and threats that employee benefits would be terminated. Subsequently, the union struck, but was forced to end the walkout after 5 months because of continued coercive tactics by the company. About 9 months after the start of the organizing drive, the union garnered only about one-third of the votes cast in a representation election held in December 1977.

The board held that the order to bargain with Local 222 was necessary because Conair had "foreclosed any possibility of holding a fair representation election," and therefore, "we find that a remedial bargaining order is the only way to restore to employees their statutory right to make a free and uncoerced determination whether they wish to be represented in collective bargaining by a labor organization. Anything short of a bargaining order would deny employees that right which has been the hallmark of national labor policy for nearly five decades."

In the majority opinion, several board members said that Conair's conduct fell within the "exceptional" category specified in the Supreme Court's 1969 decision in Gissel Packing Co. In that ruling, the Court said that when an employer engages in flagrant violations that preclude a fair election, the board could issue a bargaining order "without need of inquiry into majority status on the basis of cards or otherwise."

Serious violations target of mine safety agency

A change in mine safety and health regulations by the Department of Labor indicates it will concentrate on correcting serious violations by mine owners. A spokesman for the Department's Mine Safety and Health Administration said the agency will seek greater penalties for operators who are "found to be negligent" or who do not correct violations, but the agency will now propose only a $20 fine for minor violations. Previously, all penalties were set through a lengthy process based on six criteria. As before, penalties require the approval of the independent Mine Safety and Health Review Commission.

The Bituminous Coal Operators Association applauded the changes, saying that it will reduce paperwork for inspectors and allow everybody to concentrate on the more serious violations. Sam Church, president of the United Mine Workers, said he was disappointed with the reduced penalties for minor violations but noted that the Assistant Secretary of Labor for Mine Safety and Health had promised that the program would not be used by operators to circumvent the law.

Employer with EEO plan guilty of bias

In a 5 to 4 decision, the Supreme Court held that even an employer with a successful equal employment opportunity program can be guilty of discrimination in administrating parts of the program. The case arose when four black employees of the State of Connecticut's Department of Income Maintenance complained that they failed to gain promotions because the written examination was biased against blacks. In their complaint, filed under provisions of title VII of the Civil Rights Act of 1964, the four employees said that blacks had passed the examination at only 68 percent of the rate for white candidates.

In its response, the State contended that only the overall results of the program should be considered, noting that 23 percent of the blacks who passed the test were promoted, compared with only 13 percent of the whites who passed.

However, the Court rejected the contention. Writing for the majority, Justice William J. Brennan said that the four blacks who failed the test and initiated the complaint did not get promotions, so the fact that other blacks did was not beneficial to the four, that "the principal force of the statute is the protection of the individual employee, rather than the protection of the minority group as a whole." ☐

Book Reviews

The 'comparable worth' conundrum

Comparable Worth: Issues and Alternatives. Edited by E. Robert Livernash. Washington, Equal Employment Advisory Commission, 1980. 260 pp.

Women, Work, and Wages: Equal Pay for Jobs of Equal Value. Edited by Donald J. Treiman and Heidi I. Hartmann. Washington, National Academy Press, 1981. 136 pp.

If the saying that timing is everything has any validity, then 1982 and its high level of unemployment is probably not an optimum time for action on the pay equity issue of comparable worth. It is, however, a good time to prepare for any future action. To do so, I strongly recommend that people of all persuasions on the issue—for, against, undecided, or unknowledgeable—use the two books in this review as their primers.

Although each has a different outlook, both books agree on two main points. First, that the most generally accepted definition of comparable worth is equal pay for work of comparable (or equal) value; and second, that the comparable worth issue is an extension of the issues covered in the Equal Pay Act of 1963 and Title VII of the Civil Rights Act of 1964.

In simple terms, the Equal Pay Act mandates equal pay for equal work without regard to sex, race, and other factors. It exempts any wage differential attributable to systems of seniority, merit, quantity, or quality of production. Title VII prohibits employment discrimination with respect to pay and terms, conditions, or privileges of employment because of sex, race, and so forth, except when wage differentials are based on systems of seniority, merit, quantity, or quality of production (the Bennett amendment).

After some 15 years of litigation under these laws, many women's groups began to lobby for stronger methods of dealing both with the male-female wage differences that had not sufficiently improved and the seemingly intractable job segregation of women. Thus, in the late 1970's, the comparable worth concept resurfaced, having had a brief tenure during World War II, and earlier periods. (See the excellent historical background provided by Herbert R. Northrup in *Comparable Worth: Issues and Alternatives.*)

Knowing the sponsor of each book provides a good indication of the stand each takes. *Comparable Worth: Issues and Alternatives* was funded by a grant from the Business Roundtable and was published by the private, business-oriented Equal Employment Advisory Council. The book takes an employer-oriented approach and argues strenuously against comparable worth.

Women, Work, and Wages: Equal Pay for Jobs of Equal Value was funded by a grant from the Federal Government's Equal Employment Opportunity Commission and was published by the National Academy of Sciences. This book takes an employee-oriented approach, concluding that sex-based job evaluation and biases still exist and that a comparable worth mechanism should be pursued to remedy the situation.

E. Robert Livernash, Professor Emeritus of the Harvard School of Business, edited the Equal Employment Advisory Council's book. He also wrote the introductory Overview, which is so overwhelmingly subjective and vitriolic, that this is one of the rare times I must recommend reading an Overview last, more as a conclusion. Otherwise, I believe a considerable number of readers, especially women, may be deterred from reading the seven topical chapters, which for the most part, contain a great deal of valuable information.

For example, Janet R. Bellace's excellent chapter on "A Foreign Perspective" discusses the equal pay and comparable worth concept in 13 countries, beginning with ILO Convention 100 in 1951 and Article 19 of the Treaty of Rome in 1957. She points out that today there is hardly any uniformity in defining comparable worth and that in some countries the term is synonymous with equal pay.

In his chapter on "Job Evaluation and Pay Setting," Donald P. Schwab provides a thorough review of the current state of the art, its good points and deficiencies. He emphasizes the importance of external market constraints, such as regulations and unions, in the job evaluation process, as well as the role of internal key and nonkey jobs. Schwab concludes that "At present [1980] there is no mechanism for defensibly establishing comparable worth. Certainly, job evaluation does not do it."

About two-thirds of Herbert R. Northrup's chapter on "Wage Setting and Collective Bargaining" presents exceptionally interesting historical material on wage structure relationships and bargaining techniques between unions and management. The remaining third of the chapter contains a strongly worded case against government intervention and regulation in job evaluation and pay-setting processes. In Northrup's words, "Perhaps the most pernicious aspect of the comparable worth theory is that it would establish a government agency as the final arbiter of wages."

Other chapters and authors are "The Emerging Debate," by George T. Milkovich; "The Market System," by George Hildebrand; "Statistical Biases in the Measurement of Employment Discrimination," by Harry V. Roberts; and "The Legal Framework," by Robert E. Williams and Douglas S. McDowell.

The Equal Employment Advisory Commission volume concludes that comparable worth has neither been operationally defined by its supporters, nor will it ever be, and that a nonarbitrary wage structure requires the use of traditional job evaluation procedures and market rate standards. " . . . any attempted implementation of comparable worth would encounter substantial difficulties and would have disruptive and undesirable consequences." A viable alternative is " . . . the accelerated promotion of women, particularly within the managerial and professional hierarchy," a course which "is being effectively pursued by many companies." Upward mobility programs for workers are seen as the most promising path employers can follow.

The U.S. Equal Employment Opportunity Commission was established in 1965 to enforce Title VII of the Civil Rights Act. In 1977, the EEOC commissioned the National Academy of Sciences to produce a study on the issues involved in obtaining a measure of the comparable worth of jobs. An interim study, *Job Evaluation: An Analytical Review*, was released in 1979. The final volume entitled *Women, Work, and Wages: Equal Pay for Jobs of Equal Value* reflects the work of the 14-member Committee on Occupational Classification and Analysis.

Chair of the committee, Anne R. Miller, Professor of Sociology, University of Pennsylvania, writes in the book's Preface, "The format of the report reflects [the committee's] consensus. A major portion of our early discussion focused on whether, in fact, the existing wage rate is a good approximation of the worth of a job. Our ultimate view, as described in chapter 3 and summarized in chapter 5, is that the substantial influence of institutional and traditional arrangements makes it impossible to view current wage rates as set solely by the free play of neutral forces operating in an entirely open market, no matter how attractive such a theoretical formulation may be. Our examination of the outcomes—that is, the earnings differentials reviewed in chapter 2—and the processes—the arrangements by which workers are allocated and wages are set, covered in chapter 3—led us to that judgment."

Despite the committee's consensus on many important issues, evidence of dissension can be found in the minority and supplementary reports at the end of the book and in some equivocating elsewhere in the book about the feasibility of measuring comparable worth scientifically. One committee member, Ernest McCormick, Professor Emeritus of Industrial Psychology, Purdue University, filed a minority report on two counts. First, he disagreed with the committee about concluding that institutional and traditional arrangements frequently are a major factor in setting current wages. Second, McCormick thought the final report should have included his views on job evaluation procedures.

Another committee member, Gus Tyler, Assistant President, International Ladies' Garment Workers' Union, filed a supplementary report, which was also endorsed by member Mary C. Dunlap, lawyer and lecturer at the University of California, Berkeley. Their statement supports the committee's report but says it is too narrowly focused to have a major impact on the root causes of pay differentials. Tyler and Dunlap believe broader issues are involved, including a maldistribution of workers by sex, with women entering traditionally low paying, service sector jobs; indexing the minimum wage; regulating imports; and supplementing the traditional wage with a social wage (rent supplements, health care, social security, and so forth).

Donald J. Trieman, Professor of Sociology, University of California, and Heidi I. Hartmann, Associate Executive Director, Assembly of Behavioral and Social Sciences, National Academy of Sciences, edited the book's five chapters. Chapter 1 introduces the main points on which the committee focused, with wage discrimination an overwhelming theme. The text states that women who are nurses, librarians, government employees, and clerical workers have assessed their skills and requirements of their jobs and have argued that their jobs are underpaid relative to jobs of comparable worth that are held by men—that is, jobs requiring similar levels of skill, effort, and responsibility and similar working conditions. " . . . the issue raised is that of pay equity in a labor market that is highly segregated by sex. While the opportunity to move out of segregated job categories may be welcome to many women, many others, who have invested considerable time in training for their jobs, demand wage adjustments in 'women's jobs' rather than opportunities to work in other jobs."

Taken together, chapters 2, 3, and 4 present a superb roundup of statistics and research, including reviews of many studies of sex differences in earnings, empirical and theoretical frameworks for investigating earnings inequalities, and the efficacy of various econometric modeling techniques in determining wage discrimination.

Chapter 2, "Evidence Regarding Wage Differentials," takes the reader through a thicket of statistics, studies, and theories in an effort to pinpoint the underlying reasons for earnings inequalities by sex. Provided are exceptionally clear discussions about the explanatory value of human capital factors and about measures of segregation within occupations and firms.

This chapter concludes that because wages may not reflect the entire reward paid for a job and that differences in the productivity of many workers are neither easily nor accurately measured, measures of wage discrimination often cannot be obtained with a high degree of confidence.

Chapter 3, "Wage Differentials and Institutional Features of Labor Markets," emphasizes the belief of institutional economics that while wage rates reflect the forces of supply and demand, supply and demand themselves are strongly affected by such institutional factors as union contracts, promotions from within firms, and segmentation of workers into noncompeting groups on the basis of sex, race, and so forth.

This chapter's discussion on job segregation is especially provocative, including the historical information on women's underpayment in the labor markets of the 1930's and World War II.

Chapter 4, "Wage Adjustment Approaches to Overcoming Discrimination," reviews a variety of job evaluation procedures that adjust wages through conventional factor point methods and statistical adjustments of pay rates to estimate and remove the effects of the sex, race, and ethnic composition of job categories. The committee concludes that, "Techniques used in job evaluation have not kept pace with developments in econometrics, psychometrics, and sociological measurement. Serious attention should be given to the selection and measurement of compensable factors, the functional form of regression models, and assumptions about error structures, each of which can seriously affect the factor weights and the pay rates predicted by these models."

The conclusion of the National Academy of Sciences book (chapter 5) seems a bit schizophrenic; that is, the committee's review of the evidence "strongly suggests that wage discrimination is widespread." But "would the low-paying jobs be low-paying regardless of who held them, or are they low-paying jobs because of the sex, race, or ethnic composition of their incumbents?" In the committee's judgment, a correct response recognizes that both elements account for observed earnings differentials.

I have not dwelled on the few misprints and errors in some of the tables and text in both volumes. Readers will discover these on their own. I believe, however, that they do not detract from the richness of the information and opinions provided. We are indeed fortunate to have available two highly readable books with different views on such a controversial subject.

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Retirement issues: required reading

The Economics of Aging: The Future of Retirement. Edited by Malcolm H. Morrison. New York, Van Nostrand Reinhold Co., 1982. 294 pp. $24.

This book focuses upon several key issues pertaining to our national retirement policies and programs. It especially emphasizes the areas of social security, other public and private retirement income programs, and employment policies and programs for older workers. All seven chapters are clearly written but some are a little redundant. Several chapters contain both analytical and new material on the subjects covered. I believe that *Economics of Aging* will become a major reference for those working in the broad fields of aging, income maintenance, and employment.

The introductory chapter by Ruth Blank is a comprehensive discussion of the history of retirement as a social institution in preindustrial, industrial, and postindustrial America. It has a most complete set of references on retirement practices and programs in the United States.

The second chapter, by Elizabeth Meier and Barbara Boyle Torrey, is a scholarly discussion of future demographic changes and retirement age policy in the United States. This includes an interesting discussion of the likely consequences of an increasing dependency ratio that will see, in the next century, a smaller working population having to transfer more of its income to a larger retired population, especially after the year 2010. Meier and Torrey argue that some increase in the normal retirement age (65) seems economically and socially desirable. However, they do caution that any increase in the eligibility age for retirement benefits in social security and other public and private retirement income programs should be planned thoughtfully and introduced gradually over a number of years.

The next two chapters are major contributions to the social policy literature on retirement income issues. Chapter 3, by Eric Kingson, is an excellent discussion of current retirement trends, including both voluntary and involuntary early retirement trends, barriers to the continued employment of older workers, and an assessment of both the voluntary and involuntary factors that govern why people leave the work force prior to age 65. The section on early retirement trends should be required reading for any one who wishes to participate in the current and future debate regarding changing the retirement age in the massive social security program. Kingson, whose major academic research is the area of early retirement practices and trends, cautions against raising the normal social security age past 65. He believes, and I agree, that such a move could greatly acerbate the economic position of involuntary early retirees, by, in effect, forcing them to retire on greatly actuarially reduced benefits than is now the case in social security and various public and private retirement income programs.

Chapter 4, by Gary Hendrick and James Storey of the Urban Institute, is a broad and incisive analysis of the characteristics and goals of social security, public employee retirement plans, private pensions, and tax subsidies. Hendrick's and Storey's major retirement policy questions: When should nondisabled workers retire? How should various retirement benefits be coordinated? What proportion of workers' former earnings should be replaced by retirement? When should nondisabled workers retire? How should retirement benefits be adjusted for inflation or economic growth, and so on. I was impressed by the authors' candor in addressing these and other questions in their discussion. The chapter includes a section on specific policy responses to these questions. Their agenda would include, in part, a gradual rise in the retirement age in social security, improving benefits to a 70- to 75-percent wage replacement level for workers at or below the median wage, modifying the present "indexing" system of benefits, and eliminating the so-called "welfare" aspects of social security. It is not a tame agenda by any standard.

The final three chapters concentrate on employment policies and programs for older persons. Chapter 5, by Charles Harris and Dorothy Bauer, discusses current employment programs and current and projected employment prospects for older workers. They foresee a somewhat optimistic future for the next generation of older workers—a debatable point. Their review of current programs is inclusive but largely descriptive. I would have appreciated a much stronger analysis and critique of the role, or nonrole, of the U.S. Employment Service in aiding older workers. They do point out, however, that over the years there has been strong resistance in the field of manpower and employment in serving the older worker population.

Chapter 6, covering the subject of age discrimination and mandatory retirement, by Edward Howard, Nancy Peavy, and Lauren Selden, is a superior piece of policy analysis and scholarship. They discuss, in depth, the evolution and implementation of the Age Discrimination in Employment Act of 1967 and 1978. Their section on the issues and problems that have been associated with the enforcement of this act is excellent. I also liked their description of the dynamics of the legislative process associated with the 1978 law.

The book concludes with an interesting discussion by Malcolm Morrison on the need for a broader range of alternative work patterns and more flexible retirement options and a brief summary. Morrison is disturbed over, and raises several objections to, the prevalent "linear life pattern" of education, work, and retirement in our society. He believes such a pattern is dysfunctional and contributes to various employment problems of both younger and older workers. He suggests and recommends that a number of employment and retirement options be introduced into the work force. These would include reduced workweek schedules prior to retirement; extra vacation time in the years prior to retirement, reduced hours of work, job transfer programs, and other innovations being experimented with currently in the Scandinavian countries, West Germany, and France.

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Book notes

Youth Without Work, Three Countries Approach the Problem. By Shirley Williams and others. Paris, France, Organization for Economic Cooperation and Development, 1981. 255 pp. $15, OECD Publications and Information Center, Washington, D.C. 20006.

Employment among young people in many countries is hindered by traditional and rigid institutional attitudes such as antipathy towards hiring young people, especially minorities; refusal to train young women in nontraditional occupations; and reluctance to allow vocational training in school.

This book analyzes the youth employment problem of three countries in the Organization for Economic Cooperation and Development (OECD): Denmark, West Germany, and the United States. It also analyzes their educational and training policies and provides recommendations.

In Denmark, unemployment among persons 18 to 25 years of age was much higher than for those under 18 years of age. A high guaranteed minimum wage for workers 18 years of age and over and highly regulated collective agreements between employers and unions have affected youth employment and added to labor market segmentation.

Of all OECD countries, the Federal Republic of Germany has the most elaborate transition system from school to work. The author maintains, however, that West Germany underestimates the unemployment measurement of their youngsters by including them in the labor force figure (denominator) and excluding them from the unemployed figure (numerator) if they are seeking an apprenticeship.

The United States created 12 million jobs in the public and private sectors during the 1970's, but an increased number of middle-aged women returned to the labor force and filled over 7 million jobs. Unemployment among young people remained high. The authors advocate expansion of apprenticeships and other training programs to enlarge the supply of skilled labor.

Company Productivity: Measurement for Improvement. By Irving H. Siegel. Kalamazoo, Mich., W. E. Upjohn Institute for Employment Research, 1980. 88 pp. $3.50, paper.

American businessmen have become more concerned with improvement of national productivity performance, which is generally recognized as essential for countering inflation and preserving jobs and living standards.

Irving H. Siegel maintains that companies can inexpensively improve their productivity performance by adoption and use of a system for measuring it. He offers a practical application of measurement techniques and notes a number of specific ways in which a system can improve organizational performance. Siegel points out that productivity monitoring may help a company anticipate and locate operational anomalies and take corrective steps and appraise the effectiveness of such remedial action.

Working-Class Life "The American Standard" in Comparative Perspective, 1899–1913. By Peter R. Shergold. Pittsburgh, University of Pittsburgh Press, 1982. 306 pp. $21.95.

In his provocative work, Peter R. Shergold compiles extensive data on the standards of living in Pittsburgh and Birmingham in the first decade of the century. Mining the Pittsburgh Survey, various bulletins and reports of the U.S. Bureau of Labor, reports of the British Board of Trade, and many other sources, Shergold develops substantial materials on wages, hours, diet, food prices, rents, fuel, and clothing costs, as well as labor force participation by women and children. His announced goal is to examine the thesis that high wages gave the American worker a high standard of living, thus encouraging a conservative "business" unionism rather than a revolutionary labor movement. Indeed, Shergold finds that the skilled worker in Pittsburgh did earn higher wages than his counterpart in Birmingham. At the same time, however, the unskilled earned about the same, and, in fact, the Birmingham laborer enjoyed more leisure time and greater security against unemployment.

Shergold acknowledges the influence on his work of Alan Dawley, David Brody, and Herbert Gutman, radical American labor historians. Ironically, his findings seem to contradict their working-class ideology. Indeed, Shergold emphasizes the wide range of wage rates found in Pittsburgh, a structure reinforced by ethnic and racial prejudice: "American workers found it profoundly difficult to perceive their very diverse lifestyles as the product of a common exploitation."

The book leaves many questions unanswered. Indeed, the author poses a number of topics for further study. And, he seems at times overwhelmed by the discussion of methodology. Yet, Shergold shows the value to labor history of detailed economic analysis, and one might wish for more such investigation rather than the ideological debates frequently encountered in the field.

Steelmasters and Labor Reform, 1886–1923. By Gerald G. Eggert. Pittsburgh, University of Pittsburgh Press, 1981. 212 pp. $17.95.

Formation of the U.S. Steel Corporation in 1901 symbolized the technological, managerial, and financial revolutions reshaping American economic institutions, and William Brown Dickson's career spanned crucial, formative years. Beginning in 1881 as a manual laborer at Carnegie's Homestead mill, Dickson left the Steel Corporation in 1911, resigning his position as first vice president. As an officer in the corporation, he had fought for two major reforms: safety programs and shorter hours. He carried his ideas into Midvale Steel and Ordnance, which he helped form in 1915 and which he served as vice president and treasurer until its demise in 1923, establishing an employee representation plan during World War I.

Dickson's high position and reform interests put him at the heart of the Steel Corporation's deliberations, and Gerald G. Eggert provides an insider's view of the struggles for power and control within the corporation, the establishment of labor policy, and the birth of "welfare capitalism." Indeed, Dickson's difficulties at U.S. Steel and Midvale emphasized the inherent limitations of the "welfare" or "industrial betterment" movement.

It is a useful story but rather limited. Eggert sets the context well in the introduction, but he relies on Dickson's papers, Steel Corporation minutes, and *Iron Age* for the bulk of his sources, and he focuses on Dickson. The result is a book longer on anecdote than on interpretation and analysis of broader implications.

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NOTES ON CURRENT LABOR STATISTICS

This section of the *Review* presents the principal statistical series collected and calculated by the Bureau of Labor Statistics. A brief introduction to each group of tables provides definitions, notes on the data, sources, and other material usually found in footnotes.

Readers who need additional information are invited to consult the BLS regional offices listed on the inside front cover of this issue of the *Review*. Some general notes applicable to several series are given below.

Seasonal adjustment. Certain monthly and quarterly data are adjusted to eliminate the effect of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might otherwise mask short-term movements of the statistical series. Tables containing these data are identified as "seasonally adjusted." Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years.

Seasonally adjusted labor force data in tables 2–7 were revised in the March 1982 issue of the *Review* to reflect experience through 1981. The original estimates also were revised to 1970 to reflect 1980 census population controls.

Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are being seasonally adjusted with a new procedure called X-11/ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada Catalogue No. 12-564E, February 1980). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. Revisions of historical data continue to be made only at the end of each calendar year.

Annual revision of the seasonally adjusted payroll data shown in tables 10, 12, and 14 were made in August 1981 using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 28 and 29 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

Adjustments for price changes. Some data are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of $3 and a current price index number of 150, where 1967 = 100, the hourly rate expressed in 1967 dollars is $2 ($3/150 × 100 = $2). The resulting values are described as "real," "constant," or "1967" dollars.

Availability of information. Data that supplement the tables in this section are published by the Bureau of Labor Statistics in a variety of sources. Press releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule given below. The *BLS Handbook of Labor Statistics*, Bulletin 2070, provides more detailed data and greater historical coverage for most of the statistical series presented in the *Monthly Labor Review*. More information from the household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau. Historically, comparable information from the establishment survey is published in two comprehensive data books—*Employment and Earnings, United States* and *Employment and Earnings, States and Areas*, and their annual supplements. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

Symbols

p = preliminary. To improve the timeliness of some series, preliminary figures are issued based on representative but incomplete returns.
r = revised. Generally, this revision reflects the availability of later data but may also reflect other adjustments.
n.e.c. = not elsewhere classified.

Schedule of release dates for major BLS statistical series

Series	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	October 8	September	November 5	October	1–10
Producer Price Index	October 15	September	November 16	October	21–25
Consumer Price Index	October 26	September	November 23	October	17–20
Real earnings	October 26	September	November 23	October	11–15
Major collective bargaining settlements	October 27	1st 9 months	....	....	33–34
Productivity and costs:					
Nonfarm business and manufacturing	October 28	3rd quarter	....	....	26–29
Nonfinancial corporations	....	....	November 29	3rd quarter	26–29

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 60,000 households selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

Definitions

Employed persons are (1) those who worked for pay any time during the week which includes the 12th day of the month or who worked unpaid for 15 hours or more in a family-operated enterprise and (2) those who were temporarily absent from their regular jobs because of illness, vacation, industrial dispute, or similar reasons. A person working at more than one job is counted only in the job at which he or she worked the greatest number of hours.

Unemployed persons are those who did not work during the survey week, but were available for work except for temporary illness and had looked for jobs within the preceding 4 weeks. Persons who did not look for work because they were on layoff or waiting to start new jobs within the next 30 days are also counted among the unemployed. The **unemployment rate** represents the number unemployed as a percent of the civilian labor force.

The **civilian labor force** consists of all employed or unemployed persons in the civilian noninstitutional population; the **total labor force** includes military personnel. Persons **not in the labor force** are those not classified as employed or unemployed; this group includes persons retired, those engaged in their own housework, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job market factors, and those who are voluntarily idle. The **noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy.

Full-time workers are those employed at least 35 hours a week; **part-time workers** are those who work fewer hours. Workers on part-time schedules for economic reasons (such as slack work, terminating or starting a job during the week, material shortages, or inability to find full-time work) are among those counted as being on full-time status, under the assumption that they would be working full time if conditions permitted. The survey classifies unemployed persons in full-time or part-time status by their reported preferences for full-time or part-time work.

Notes on the data

From time to time, and especially after a decennial census, adjustments are made in the Current Population Survey figures to correct for estimating errors during the preceding years. These adjustments affect the comparability of historical data presented in table 1. A description of these adjustments and their effect on the various data series appear in the Explanatory Notes of *Employment and Earnings*.

Data in tables 2–7 are seasonally adjusted, based on the seasonal experience through December 1981.

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950–81
[Numbers in thousands]

Year	Total noninstitutional population	Total labor force		Civilian labor force							Not in labor force
					Employed				Unemployed		
		Number	Percent of population	Total	Total	Percent of population	Agriculture	Nonagricultural industries	Number	Percent of labor force	
1950	106,645	63,858	59.9	62,208	58,918	55.2	7,160	51,758	3,288	5.3	42,787
1955	112,732	68,072	60.4	65,023	62,170	55.1	6,450	55,722	2,852	4.4	44,660
1960	119,759	72,142	60.2	69,628	65,778	54.9	5,458	60,318	3,852	5.5	47,617
1965	129,236	77,178	59.7	74,455	71,088	55.0	4,361	66,726	3,366	4.5	52,058
1966	131,180	78,893	60.1	75,770	72,895	55.6	3,979	68,915	2,875	3.8	52,288
1967	133,319	80,793	60.6	77,347	74,372	55.8	3,844	70,527	2,975	3.8	52,527
1968	135,562	82,272	60.7	78,737	75,920	56.0	3,817	72,103	2,817	3.6	53,291
1969	137,841	84,240	61.1	80,734	77,902	56.5	3,606	74,296	2,832	3.5	53,602
1970	140,272	85,959	61.3	82,771	78,678	56.1	3,463	75,215	4,093	4.9	54,315
1971	143,033	87,198	61.0	84,382	79,367	55.5	3,394	75,972	5,016	5.9	55,834
1972	146,574	89,484	61.1	87,034	82,153	56.0	3,484	78,669	4,882	5.6	57,091
1973	149,423	91,756	61.4	89,429	85,064	56.9	3,470	81,594	4,365	4.9	57,667
1974	152,349	94,179	61.8	91,949	86,794	57.0	3,515	83,279	5,156	5.6	58,171
1975	155,333	95,955	61.8	93,775	85,846	55.3	3,408	82,438	7,929	8.5	59,377
1976	158,294	98,302	62.1	96,158	88,752	56.1	3,331	85,421	7,406	7.7	59,991
1977	161,166	101,142	62.8	99,009	92,017	57.1	3,283	88,734	6,991	7.1	60,025
1978	164,027	104,368	63.6	102,251	96,048	58.6	3,387	92,661	6,202	6.1	59,659
1979	166,951	107,050	64.1	104,962	98,824	59.2	3,347	95,477	6,137	5.8	59,900
1980	169,848	109,042	64.2	106,940	99,303	58.5	3,364	95,938	7,637	7.1	60,806
1981	172,272	110,812	64.3	108,670	100,397	58.3	3,368	97,030	8,273	7.6	61,460

2. Employment status by sex, age, race, and Hispanic origin, seasonally adjusted

[Numbers in thousands]

Employment status	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
TOTAL															
Total noninstitutional population[1]	169,848	172,272	172,550	172,758	172,966	173,155	173,330	173,485	173,657	173,843	174,020	174,201	174,364	174,544	174,707
Armed Forces[1]	2,102	2,142	2,160	2,165	2,158	2,158	2,164	2,150	2,168	2,175	2,176	2,175	2,173	2,180	2,196
Civilian noninstitutional population[1]	167,745	170,130	170,390	170,593	170,809	170,996	171,166	171,335	171,489	171,667	171,844	172,026	172,190	172,364	172,511
Civilian labor force	106,940	108,670	108,818	108,494	109,012	109,272	109,184	108,879	109,165	109,346	109,648	110,666	110,191	110,522	110,644
Participation rate	63.8	63.9	63.9	63.6	63.8	63.9	63.8	63.5	63.7	63.7	63.8	64.3	64.0	64.1	64.1
Employed	99,303	100,397	100,840	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117	99,764	99,732	99,838
Employment-population ratio[2]	58.5	58.3	58.4	58.0	58.0	57.9	57.5	57.4	57.3	57.2	57.1	57.5	57.2	57.1	57.1
Agriculture	3,364	3,368	3,404	3,358	3,378	3,372	3,209	3,411	3,373	3,348	3,308	3,488	3,357	3,460	3,435
Nonagricultural industries	95,938	97,030	97,436	96,900	96,965	96,800	96,404	96,170	96,217	96,144	96,032	96,629	96,406	96,272	96,404
Unemployed	7,637	8,273	7,978	8,236	8,669	9,100	9,571	9,298	9,575	9,854	10,307	10,549	10,427	10,790	10,806
Unemployment rate	7.1	7.6	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8	9.8
Not in labor force	60,806	61,460	61,581	62,099	61,797	61,724	61,982	62,456	62,324	62,321	62,197	61,360	61,999	61,842	61,867
Men, 20 years and over															
Civilian noninstitutional population[1]	71,138	72,419	72,558	72,670	72,785	72,921	73,020	73,120	73,209	73,297	73,392	73,469	73,585	73,685	73,774
Civilian labor force	56,455	57,197	57,250	57,282	57,355	57,459	57,665	57,369	57,448	57,554	57,730	58,164	58,016	58,084	58,026
Participation rate	79.4	79.0	78.9	78.8	78.8	78.8	79.0	78.5	78.5	78.5	78.7	79.1	78.8	78.8	78.7
Employed	53,101	53,582	53,791	53,693	53,504	53,354	53,122	53,047	53,097	53,006	52,988	53,260	52,985	52,996	52,887
Agriculture	2,396	2,384	2,422	2,383	2,413	2,382	2,311	2,390	2,386	2,377	2,382	2,464	2,424	2,474	2,436
Nonagricultural industries	50,705	51,199	51,369	51,310	51,091	50,972	50,811	50,657	50,711	50,629	50,606	50,796	50,561	50,522	50,451
Unemployed	3,353	3,615	3,459	3,589	3,851	4,105	4,543	4,322	4,351	4,548	4,742	4,904	5,031	5,088	5,139
Unemployment rate	5.9	6.3	6.0	6.2	6.7	7.1	7.9	7.5	7.6	7.9	8.2	8.4	8.7	8.8	8.9
Women, 20 years and over															
Civilian noninstitutional population[1]	80,065	81,497	81,671	81,792	81,920	82,038	82,151	82,260	82,367	82,478	82,591	82,707	82,811	82,926	83,035
Civilian labor force	41,106	42,485	42,666	42,344	42,831	42,987	42,888	42,868	43,031	43,243	43,301	43,683	43,904	44,076	44,115
Participation rate	51.3	52.1	52.2	51.8	52.3	52.4	52.2	52.1	52.2	52.4	52.4	52.8	53.0	53.2	53.1
Employed	38,492	39,590	39,841	39,426	39,814	39,878	39,713	39,764	39,744	39,807	39,715	40,075	40,350	40,392	40,490
Agriculture	584	604	609	608	596	63.5	572	64.9	628	635	601	634	581	600	589
Nonagricultural industries	37,907	38,986	39,232	38,818	39,218	39,243	39,141	39,115	39,116	39,172	39,114	39,441	39,769	39,791	39,901
Unemployed	2,615	2,895	2,825	2,918	3,017	3,109	3,175	3,104	3,286	3,435	3,586	3,608	3,554	3,684	3,626
Unemployment rate	6.4	6.8	6.6	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3	8.1	8.4	8.2
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	16,543	16,214	16,169	16,131	16,083	16,037	15,995	15,955	15,913	15,902	15,861	15,820	15,784	15,753	15,702
Civilian labor force	9,378	8,988	8,902	8,888	8,826	8,826	8,631	8,643	8,686	8,549	8,616	8,819	8,271	8,362	8,503
Participation rate	56.7	55.4	55.1	55.1	54.8	55.0	54.0	54.2	54.6	53.8	54.3	55.7	52.4	53.1	54.2
Employed	7,710	7,225	7,208	7,139	7,025	6,940	6,778	6,771	6,748	6,679	6,637	6,782	6,429	6,344	6,463
Agriculture	385	380	373	367	369	355	326	373	368	336	326	380	353	386	411
Nonagricultural industries	7,325	6,845	6,835	6,772	6,656	6,585	6,452	6,398	6,380	6,343	6,311	6,402	6,076	5,958	6,052
Unemployed	1,669	1,763	1,694	1,749	1,801	1,886	1,853	1,872	1,938	1,870	1,979	2,037	1,842	2,018	2,040
Unemployment rate	17.8	19.6	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1	24.0
White															
Civilian noninstitutional population[1]	146,122	147,908	148,144	148,370	148,562	148,631	148,755	148,842	149,055	149,132	149,249	149,250	149,429	149,509	149,536
Civilian labor force	93,600	95,052	95,163	94,884	95,365	95,535	95,329	95,120	95,333	95,508	96,015	96,641	96,223	96,493	96,414
Participation	64.1	64.3	64.2	64.0	64.2	64.3	64.1	63.9	64.0	64.0	64.3	64.8	64.4	64.5	64.5
Employed	87,715	88,709	89,221	88,628	88,734	88,498	88,010	87,955	87,989	87,956	87,989	88,450	88,173	88,137	88,133
Unemployed	5,884	6,343	5,942	6,256	6,631	7,037	7,319	7,165	7,344	7,552	8,026	8,191	8,050	8,356	8,281
Unemployment rate	6.3	6.7	6.2	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5	8.4	8.7	8.6
Black															
Civilian noninstitutional population[1]	17,824	18,219	18,266	18,297	18,333	18,362	18,392	18,423	18,450	18,480	18,511	18,542	18,570	18,600	18,626
Civilian labor force	10,865	11,086	11,069	11,134	11,188	11,207	11,226	11,188	11,205	11,217	11,170	11,335	11,253	11,322	11,412
Participation rate	61.0	60.8	60.6	60.9	61.0	61.0	61.0		60.7	60.7	60.3	61.1	60.6	60.9	61.3
Employed	9,313	9,355	9,267	9,319	9,313	9,321	9,279	9,314	9,266	9,197	9,111	9,216	9,174	9,223	9,262
Unemployed	1,553	1,731	1,802	1,815	1,875	1,886	1,947	1,874	1,939	2,020	2,059	2,120	2,079	2,099	2,150
Unemployment rate	14.3	15.6	16.3	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7	18.5	18.5	18.8
Hispanic origin															
Civilian noninstitutional population[1]	8,901	9,310	9,400	9,466	9,559	9,558	9,519	9,400	9,341	9,297	9,235	9,297	9,428	9,521	9,689
Civilian labor force	5,700	5,972	5,924	5,964	6,074	6,151	6,095	6,054	6,065	6,024	5,933	6,001	5,931	5,966	6,087
Participation rate	64.0	64.1	63.0	63.0	63.5	64.4	64.0	64.4	64.9	64.8	64.2	64.5	62.9	62.7	62.8
Employed	5,126	5,348	5,340	5,393	5,422	5,446	5,426	5,330	5,298	5,260	5,191	5,166	5,131	5,135	5,197
Unemployed	575	624	584	571	652	705	669	724	767	764	743	834	800	832	890
Unemployment rate	10.1	10.4	9.9	9.6	10.7	11.5	11.0	12.0	12.6	12.7	12.5	13.9	13.5	13.9	14.6

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[1] The population and Armed Forces figures are not seasonally adjusted.

[2] Civilian employment as a percent of the total noninstitutional population (including Armed Forces).

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups.

3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
CHARACTERISTIC															
Total employed, 16 years and over	99,303	100,397	100,840	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117	99,764	99,732	99,839
Men	57,186	57,397	57,551	57,471	57,266	57,051	56,725	56,629	56,658	56,472	56,401	56,820	56,223	56,192	56,210
Women	42,117	43,000	43,289	42,787	43,077	43,121	42,888	42,[illegible]	42,932	43,020	42,940	43,297	43,541	43,540	43,630
Married men, spouse present	39,004	38,882	38,961	38,855	38,746	38,553	38,342	[illegible]	38,255	38,181	38,142	38,312	38,354	38,213	38,184
Married women, spouse present	23,532	23,915	24,043	23,826	23,874	23,820	23,881	23,744	23,727	23,900	23,831	24,213	24,401	24,223	24,300
Women who maintain families	4,780	4,998	4,980	5,015	5,045	5,049	5,064	5,107	5,158	5,095	5,085	4,988	5,112	5,247	5,216
OCCUPATION															
White-collar workers	51,882	52,949	53,141	52,908	53,199	53,086	53,084	52,836	52,841	52,763	53,177	53,705	53,588	53,685	53,750
Professional and technical	15,968	16,420	16,621	16,598	16,881	16,657	16,774	16,803	16,612	16,659	16,844	16,818	17,053	17,292	17,023
Managers and administrators, except farm	11,138	11,540	11,460	11,533	11,616	11,461	11,424	11,091	11,253	11,311	11,501	11,541	11,504	11,355	11,613
Salesworkers	6,303	6,425	6,490	6,441	6,400	6,418	6,450	6,520	6,544	6,637	6,603	6,587	6,547	6,567	6,677
Clerical workers	18,473	18,564	18,570	18,336	18,502	18,550	18,436	18,423	18,432	18,155	18,229	18,759	18,482	18,471	18,437
Blue-collar workers	31,452	31,261	31,611	31,266	30,953	30,683	30,344	30,203	30,300	30,416	29,924	29,926	29,716	29,609	29,465
Craft and kindred workers	12,787	12,662	12,724	12,514	12,446	12,411	12,446	12,370	12,454	12,511	12,492	12,316	12,207	12,229	12,342
Operatives, except transport	10,565	10,540	10,658	10,524	10,410	10,220	10,169	9,966	9,955	9,960	9,698	9,585	9,655	9,453	9,257
Transport equipment operatives	3,531	3,476	3,530	3,506	3,580	3,438	3,368	3,415	3,503	3,397	3,400	3,419	3,414	3,439	3,268
Nonfarm laborers	4,567	4,583	4,699	4,722	4,517	4,614	4,361	4,451	4,397	4,648	4,343	4,607	4,441	4,488	4,598
Service workers	13,228	13,438	13,282	13,391	13,525	13,670	13,639	13,709	13,612	13,526	13,555	13,738	13,791	13,634	13,926
Farmworkers	2,741	2,749	2,753	2,743	2,770	2,802	2,660	2,817	2,787	2,710	2,623	2,731	2,660	2,750	2,711
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,425	1,464	1,501	1,461	1,502	1,436	1,352	1,377	1,426	1,416	1,423	1,541	1,431	1,530	1,568
Self-employed workers	1,642	1,638	1,638	1,643	1,631	1,641	1,602	1,674	1,598	1,644	1,664	1,698	1,676	1,674	1,613
Unpaid family workers	297	266	256	256	261	321	228	380	359	277	270	236	251	250	254
Nonagricultural industries:															
Wage and salary workers	88,525	89,543	89,995	89,376	89,460	89,238	88,991	88,759	88,586	88,526	88,322	89,051	88,606	88,541	88,737
Government	15,912	15,689	15,526	15,475	15,491	15,397	15,585	15,578	15,527	15,492	15,453	15,422	15,635	15,443	15,569
Private industries	72,612	73,853	74,469	73,901	73,969	73,841	73,406	73,181	73,059	73,034	72,869	73,629	72,970	73,098	73,168
Households	1,192	1,208	1,259	1,102	1,162	1,204	1,291	1,248	1,161	1,225	1,192	1,202	1,201	1,200	1,242
Other	71,420	72,645	73,210	72,799	72,807	72,637	72,115	71,932	71,898	71,809	71,677	72,427	71,770	71,898	71,927
Self-employed workers	7,000	7,097	7,103	7,217	7,152	7,141	7,057	6,971	7,065	7,126	7,264	7,259	7,319	7,268	7,352
Unpaid family workers	413	390	387	399	451	425	410	410	408	434	413	382	397	390	409
PERSONS AT WORK[1]															
Nonagricultural industries	90,209	91,377	91,569	90,678	91,384	91,323	90,922	90,125	90,892	90,548	90,596	91,282	91,020	90,501	90,508
Full-time schedules	73,590	74,339	74,467	73,794	73,886	73,915	73,360	72,803	73,028	72,649	72,335	73,036	72,662	[c]72,430	72,112
Part time for economic reasons	4,064	4,499	4,350	4,656	5,009	5,026	5,288	5,071	5,563	5,717	5,834	5,763	5,444	5,492	5,848
Usually work full time	1,714	1,738	1,729	1,759	2,006	1,945	2,121	1,783	2,193	2,237	2,223	2,211	2,064	2,001	2,054
Usually work part time	2,350	2,761	2,621	2,897	3,003	3,081	3,167	3,287	3,370	3,480	3,611	3,552	3,380	3,491	3,594
Part time for noneconomic reasons	12,555	12,539	12,752	12,428	12,480	12,382	12,274	12,251	12,300	12,183	12,427	12,483	12,914	12,579	12,748

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial disputes.

c = corrected.

4. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
CHARACTERISTIC															
Total, 16 years and over	7.1	7.6	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8	9.8
Both sexes, 16 to 19 years	17.8	19.6	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1	24.0
Men, 20 years and over	5.9	6.3	6.0	6.2	6.7	7.1	7.9	7.5	7.6	7.9	8.2	8.4	8.7	8.8	8.9
Women, 20 years and over	6.4	6.8	6.6	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3	8.1	8.4	8.2
White, total	6.3	6.7	6.2	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5	8.4	8.7	8.6
Both sexes, 16 to 19 years	15.5	17.3	18.1	17.2	17.7	19.0	19.0	19.6	20.0	19.0	20.8	20.3	19.4	21.0	20.6
Men, 16 to 19 years	16.2	17.9	16.7	17.5	17.9	19.6	20.2	20.8	20.4	20.2	22.3	21.2	21.1	22.6	22.5
Women, 16 to 19 years	14.8	16.6	15.4	16.8	17.5	18.3	17.7	18.2	19.4	17.6	19.2	19.2	17.5	19.2	18.6
Men, 20 years and over	5.3	5.6	5.2	5.5	5.9	6.4	6.9	6.6	6.7	7.0	7.3	7.5	7.7	7.9	7.9
Women, 20 years and over	5.6	5.9	5.5	5.9	6.1	6.3	6.4	6.3	6.6	6.9	7.2	7.3	7.1	7.3	7.1
Black, total	14.3	15.6	16.3	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7	18.5	18.5	18.8
Both sexes, 16 to 19 years	38.5	41.4	49.0	40.8	45.6	44.1	42.2	41.2	42.3	46.0	48.1	49.8	52.6	49.7	51.6
Men, 16 to 19 years	37.5	40.7	49.9	38.5	41.6	41.9	39.6	36.3	40.7	48.5	48.3	50.6	58.1	48.3	50.1
Women, 16 to 19 years	39.8	42.2	47.8	43.4	49.5	46.6	45.1	46.7	44.2	43.1	47.8	48.9	46.2	51.2	53.1
Men, 20 years and over	12.4	13.5	13.6	14.5	14.7	15.5	16.5	16.3	16.0	16.0	16.9	17.0	17.1	16.8	17.2
Women, 20 years and over	11.9	13.4	13.8	14.0	13.9	13.6	14.1	13.3	14.5	15.4	15.6	15.3	15.0	15.5	15.1
Hispanic origin, total	10.1	10.4	9.9	9.6	10.7	11.5	11.0	12.0	12.6	12.7	12.5	13.9	13.5	13.9	14.6
Married men, spouse present	4.2	4.3	4.0	4.4	4.8	5.2	5.7	5.3	5.3	5.5	6.0	6.1	6.5	6.6	6.7
Married women, spouse present	5.8	6.0	5.5	6.0	6.1	6.5	6.6	6.2	7.0	7.1	7.8	7.4	7.0	7.4	7.1
Women who maintain families	9.2	10.4	10.1	10.7	10.6	10.8	10.5	10.4	10.2	10.6	11.5	11.8	12.4	12.0	11.6
Full-time workers	6.9	7.3	6.9	7.3	7.7	8.1	8.7	8.4	8.5	8.9	9.2	9.2	9.4	9.5	9.6
Part-time workers	8.8	9.4	9.6	9.6	9.5	10.2	9.2	9.6	10.8	10.0	10.9	10.5	9.8	11.4	10.3
Unemployed 15 weeks and over	1.7	2.1	2.0	2.1	2.1	2.2	2.2	2.2	2.5	2.7	2.7	3.0	3.3	3.2	3.3
Labor force time lost[1]	7.9	8.5	7.9	8.5	9.1	9.5	10.1	10.0	9.8	10.4	10.4	11.1	10.2	10.7	10.7
OCCUPATION															
White-collar workers	3.7	4.0	3.9	4.1	4.1	4.2	4.5	4.2	4.6	4.8	4.9	4.8	5.0	4.9	4.8
Professional and technical	2.5	2.8	2.5	2.8	2.6	2.7	3.4	2.9	3.1	3.2	3.2	3.3	3.3	3.3	3.1
Managers and administrators, except farm	2.4	2.7	2.7	2.7	2.8	3.0	3.1	2.7	3.1	3.0	3.3	3.5	3.8	3.7	3.8
Salesworkers	4.4	4.6	4.7	5.0	4.9	5.0	4.9	4.5	4.8	5.8	5.6	5.2	5.8	5.4	5.5
Clerical workers	5.3	5.7	5.7	5.8	6.0	6.0	6.2	6.3	6.7	6.9	7.2	6.8	6.9	6.9	6.7
Blue-collar workers	10.0	10.3	9.5	10.2	10.9	11.8	12.7	12.5	12.5	12.9	13.7	13.5	13.9	14.4	14.2
Craft and kindred workers	6.6	7.5	7.0	7.7	8.3	8.5	9.3	9.0	8.4	9.1	9.6	9.4	10.3	10.9	10.6
Operatives, except transport	12.2	12.2	11.1	11.6	12.8	14.1	15.5	15.4	15.4	15.9	16.9	16.5	16.7	17.4	17.5
Transport equipment operatives	8.8	8.7	8.0	8.7	8.0	10.4	10.5	10.2	10.3	10.4	10.7	11.8	13.0	11.6	12.5
Nonfarm laborers	14.6	14.7	13.2	14.6	15.6	16.0	16.9	16.9	17.9	17.9	19.2	18.3	17.9	18.6	17.4
Service workers	7.9	8.9	8.9	9.0	9.3	9.7	9.6	9.2	9.8	10.2	11.1	11.3	9.9	10.5	10.6
Farmworkers	4.6	5.3	5.4	4.0	6.2	6.2	6.4	6.9	4.9	5.4	5.8	8.3	7.2	6.1	6.9
INDUSTRY															
Nonagricultural private wage and salary workers[2]	7.4	7.7	7.3	7.7	8.1	8.4	9.1	8.8	9.0	9.5	9.9	9.9	10.0	10.2	10.1
Construction	14.1	15.6	16.2	16.3	17.6	17.8	18.1	18.7	18.1	17.9	19.4	18.8	19.2	20.3	20.3
Manufacturing	8.5	8.3	7.0	7.9	8.6	9.4	11.0	10.4	10.6	10.8	11.3	11.6	12.3	12.0	12.1
Durable goods	8.9	8.2	6.5	7.7	8.6	9.5	11.8	11.0	11.3	10.8	11.9	12.2	13.2	12.7	12.9
Nondurable goods	7.9	8.4	7.9	8.3	8.6	9.3	9.6	9.5	9.5	10.8	10.5	10.7	11.0	11.0	10.8
Transportation and public utilities	4.9	5.2	4.8	4.2	4.8	5.5	6.0	6.4	5.9	5.6	7.0	6.5	6.9	6.1	7.0
Wholesale and retail trade	7.4	8.1	7.9	8.5	8.4	8.6	8.9	8.7	9.0	10.3	10.1	10.6	9.7	10.5	9.8
Finance and service industries	5.3	5.9	5.7	6.0	6.2	6.1	6.4	5.9	6.5	6.9	7.0	6.9	6.8	7.0	7.0
Government workers	4.1	4.7	4.5	4.7	4.7	5.2	5.0	4.8	5.2	4.9	5.3	5.0	4.6	4.6	4.6
Agricultural wage and salary workers	11.0	12.1	12.0	11.0	13.4	14.1	14.8	16.2	12.8	14.0	14.6	18.2	16.3	13.8	14.3

[1] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

[2] Includes mining, not shown separately.

5. Unemployment rates, by sex and age, seasonally adjusted

Sex and age	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Total, 16 years and over	7.1	7.6	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8	9.8
16 to 19 years	17.8	19.6	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1	24.0
16 to 17 years	20.0	21.4	20.8	21.4	21.5	22.6	21.9	21.9	22.7	22.7	24.6	25.3	23.7	26.1	25.8
18 to 19 years	16.2	18.4	17.6	18.5	20.0	20.5	21.2	21.3	22.0	21.3	21.9	21.3	21.9	22.8	22.6
20 to 24 years	11.5	12.3	12.1	12.3	12.7	13.0	13.5	13.5	14.1	14.2	14.7	14.3	14.4	14.5	15.2
25 years and over	5.1	5.4	5.2	5.4	5.7	6.0	6.5	6.3	6.4	6.8	7.0	7.1	7.4	7.5	7.3
25 to 54 years	5.5	5.8	5.5	5.8	6.2	6.5	6.9	6.7	6.8	7.3	7.4	7.7	7.7	7.9	7.8
55 years and over	3.3	3.6	3.5	3.8	3.8	3.8	4.1	4.2	4.3	4.6	5.0	4.8	5.4	5.2	5.1
Men, 16 years and over	6.9	7.4	7.1	7.3	7.7	8.3	9.0	8.6	8.7	9.0	9.4	9.6	9.7	9.9	10.0
16 to 19 years	18.3	20.1	19.8	19.9	20.1	21.8	22.3	22.1	22.5	23.5	24.4	24.0	24.2	25.1	25.1
16 to 17 years	20.4	22.0	21.5	21.5	21.1	22.7	22.6	23.0	23.0	24.3	24.7	26.3	25.8	28.1	27.3
18 to 19 years	16.7	18.8	18.3	18.7	19.3	21.0	22.2	21.4	22.1	22.9	24.3	21.9	24.0	23.4	23.4
20 to 24 years	12.5	13.2	12.9	13.1	13.8	14.4	14.8	14.9	15.4	15.7	16.0	15.5	15.8	15.9	16.6
25 years and over	4.8	5.1	4.9	5.0	5.5	5.8	6.5	6.3	6.3	6.6	6.9	6.9	7.5	7.5	7.5
25 to 54 years	5.1	5.5	5.2	5.5	5.9	6.3	6.9	6.7	6.7	7.1	7.2	7.5	8.0	8.1	8.0
55 years and over	3.3	3.5	3.4	3.5	3.7	3.7	4.4	4.3	4.2	4.8	5.1	4.7	5.0	4.8	5.4
Women, 16 years and over	7.4	7.9	7.7	8.0	8.2	8.4	8.5	8.4	8.9	9.0	9.4	9.5	9.1	9.6	9.5
16 to 19 years	17.2	19.0	18.2	19.5	20.7	20.9	20.5	21.2	22.1	20.1	21.3	22.1	20.2	23.1	22.8
16 to 17 years	19.6	20.7	20.0	21.2	21.9	22.5	21.1	20.6	22.5	20.8	24.5	24.1	21.4	24.1	24.2
18 to 19 years	15.6	17.9	16.9	18.3	20.6	19.9	20.0	21.1	21.9	19.6	19.4	20.6	19.7	22.2	21.7
20 to 24 years	10.4	11.2	11.1	11.4	11.5	11.3	12.0	11.9	12.7	12.6	13.3	12.9	12.9	12.9	13.7
25 years and over	5.5	5.9	5.6	6.0	6.1	6.4	6.4	6.3	6.5	7.0	7.2	7.4	7.2	7.4	7.0
25 to 54 years	6.0	6.3	6.0	6.3	6.5	6.8	6.9	6.7	7.0	7.6	7.7	8.0	7.4	7.7	7.5
55 years and over	3.2	3.8	3.7	4.3	4.0	3.8	3.7	4.1	4.3	4.3	4.8	5.0	6.0	6.0	4.6

6. Unemployed persons, by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
NUMBER OF UNEMPLOYED															
Lost last job	3,947	4,267	4,106	4,426	4,573	4,905	5,343	5,205	5,153	5,622	5,906	5,901	6,302	6,177	6,347
On layoff	1,488	1,430	1,276	1,452	1,631	1,826	2,042	1,860	1,740	1,828	1,946	1,969	2,071	2,079	2,180
Other job losers	2,459	2,837	2,830	2,974	2,942	3,079	3,301	3,345	3,413	3,794	3,959	3,932	4,231	4,098	4,167
Left last job	891	923	879	921	976	916	923	835	964	885	937	874	813	813	806
Reentered labor force	1,927	2,102	2,034	2,058	2,178	2,339	2,244	2,079	2,277	2,249	2,365	2,438	2,372	2,528	2,440
Seeking first job	872	981	971	977	1,002	996	1,021	1,055	1,100	1,044	1,081	1,154	1,088	1,249	1,328
PERCENT DISTRIBUTION															
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	51.7	51.6	51.4	52.8	52.4	53.6	56.1	56.7	54.3	57.4	57.4	56.9	59.6	57.4	58.1
On layoff	19.5	17.3	16.0	17.3	18.7	19.9	21.4	20.3	18.3	18.7	18.9	19.0	19.6	19.3	20.0
Other job losers	32.1	34.3	35.4	35.5	33.7	33.6	34.6	36.5	35.9	38.7	38.5	37.9	40.0	38.1	38.2
Job leavers	11.7	11.2	11.0	11.0	11.2	10.0	9.7	9.1	10.2	9.0	9.1	8.4	7.7	7.5	7.4
Reentrants	25.2	25.4	25.5	24.6	25.0	25.5	23.5	22.7	24.0	22.9	23.0	23.5	22.4	23.5	22.3
New entrants	11.4	11.9	12.2	11.7	11.5	10.9	10.7	11.5	11.6	10.7	10.5	11.1	10.3	11.6	12.2
PERCENT OF CIVILIAN LABOR FORCE															
Job losers	3.7	3.9	3.8	4.1	4.2	4.5	4.9	4.8	4.7	5.1	5.4	5.3	5.7	5.6	5.7
Job leavers	.8	.8	.8	.8	.9	.8	.8	.8	.9	.8	.9	.8	.7	.7	.7
Reentrants	1.8	1.9	1.9	1.9	2.0	2.1	2.1	1.9	2.1	2.1	2.2	2.2	2.2	2.3	2.2
New entrants	.8	.9	.9	.9	.9	.9	.9	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.2

7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Less than 5 weeks	3,295	3,449	3,326	3,529	3,707	3,852	4,037	3,852	3,789	3,825	3,958	3,874	3,543	3,990	3,923
5 to 14 weeks	2,470	2,539	2,469	2,585	2,686	2,882	3,016	3,068	3,052	3,078	3,304	3,320	3,458	3,161	3,304
15 weeks and over	1,871	2,285	2,217	2,248	2,292	2,364	2,372	2,399	2,724	2,954	3,015	3,286	3,673	3,580	3,631
15 to 26 weeks	1,052	1,122	1,078	1,146	1,166	1,229	1,189	1,210	1,445	1,605	1,508	1,634	1,826	1,792	1,810
27 weeks and over	820	1,162	1,139	1,102	1,126	1,135	1,183	1,190	1,278	1,349	1,507	1,652	1,847	1,788	1,821
Mean duration, in weeks	11.9	13.7	14.3	13.7	13.6	13.1	12.8	13.5	14.1	13.9	14.2	14.6	16.5	15.6	16.2
Median duration, in weeks	6.5	6.9	7.0	6.9	6.8	6.9	6.7	7.2	7.3	7.6	8.5	9.0	9.8	8.3	8.2

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by 177,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

Definitions

Employed persons are all persons who received pay (including holiday and sick pay) for any part of the payroll period including the 12th of the month. Persons holding more than one job (about 5 percent of all persons in the labor force) are counted in each establishment which reports them.

Production workers in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 11–15 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities; in wholesale and retail trade; in finance, insurance, and real estate; and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to reflect the effects of changes in consumer prices. The deflator for this series is derived from the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated to underlying wage-rate developments: fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries.

Hours represent the average weekly hours of production or nonsupervisory workers for which pay was received and are different from standard or scheduled hours. **Overtime hours** represent the portion of gross average weekly hours which were in excess of regular hours and for which overtime premiums were paid.

Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of May 1982 data, published in the July 1982 issue of the *Review.* Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Complete comparable historical unadjusted and seasonally adjusted data are published in a Supplement to Employment and Earnings (unadjusted data from April 1977 through February 1982 and seasonally adjusted data from January 1974 through February 1982) and in *Employment and Earnings, United States, 1909–78,* BLS Bulletin 1312–11 (for prior periods).

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review,* December 1969, pp. 9–20. See also *BLS Handbook of Methods for Surveys and Studies,* Bulletin 1910 (Bureau of Labor Statistics, 1976).

8. Employment by industry, selected years, 1950–81

[Nonagricultural payroll data, in thousands]

Year	Total	Private sector	Goods-producing				Service-producing									
			Total	Mining	Construction	Manufacturing	Total	Transportation and public utilities	Wholesale and retail trade			Finance, insurance, and real estate	Services	Government		
									Total	Wholesale trade	Retail trade			Total	Federal	State and local
1950	45,197	39,170	18,506	901	2,364	15,241	26,691	4,034	9,386	2,635	6,751	1,888	5,357	6,026	1,928	4,098
1955	50,641	43,727	20,513	792	2,839	16,882	30,128	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1960[1]	54,189	45,836	20,434	712	2,926	16,796	33,755	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1964	58,283	48,686	21,005	634	3,097	17,274	37,278	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	50,689	21,926	632	3,232	18,062	38,839	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	53,116	23,158	627	3,317	19,214	40,743	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	54,413	23,308	613	3,248	19,447	42,495	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	56,058	23,737	606	3,350	19,781	44,160	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	58,189	24,361	619	3,575	20,167	46,023	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	58,325	23,578	623	3,588	19,367	47,302	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	58,331	22,935	609	3,704	18,623	48,278	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	60,341	23,668	628	3,889	19,151	50,007	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	63,058	24,893	642	4,097	20,154	51,897	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	64,095	24,794	697	4,020	20,077	53,471	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	62,259	22,600	752	3,525	18,323	54,345	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	64,511	23,352	779	3,576	18,997	56,030	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	67,344	24,346	813	3,851	19,682	58,125	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	71,026	25,585	851	4,229	20,505	61,113	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	73,876	26,461	958	4,463	21,040	63,363	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,147
1980	90,406	74,166	25,658	1,027	4,346	20,285	64,748	5,146	20,310	5,275	15,035	5,160	17,890	16,241	2,866	13,375
1981	91,105	75,081	25,481	1,132	4,176	20,173	65,625	5,157	20,551	5,359	15,192	5,301	18,592	16,024	2,772	13,253

[1] Data include Alaska and Hawaii beginning in 1959.

9. Employment by State

[Nonagricultural payroll data, in thousands]

State	July 1981	June 1982	July 1982 p	State	July 1981	June 1982	July 1982 p
Alabama	1,354.6	1,333.0	1,326.4	Montana	288.7	289.2	281.8
Alaska	192.0	194.2	199.4	Nebraska	624.3	617.2	605.7
Arizona	1,021.4	1,018.2	1,002.5	Nevada	418.3	418.3	417.4
Arkansas	736.2	721.9	714.6	New Hampshire	401.8	400.4	397.5
California	10,017.3	10,042.9	9,940.4	New Jersey	3,130.8	3,112.4	3,100.0
Colorado	1,282.5	1,292.0	1,279.1	New Mexico	475.9	474.5	471.8
Connecticut	1,432.7	1,429.4	1,406.4	New York	7,331.2	7,346.7	7,272.2
Delaware	264.6	259.2	261.4	North Carolina	2,347.4	2,350.0	2,289.1
District of Columbia	629.0	606.5	625.6	North Dakota	249.6	253.4	251.4
Florida	3,663.6	3,761.0	3,702.3	Ohio	4,326.0	4,256.2	4,203.1
Georgia	2,172.8	2,155.6	2,145.9	Oklahoma	1,186.4	1,218.0	1,202.2
Hawaii	408.9	402.6	404.6	Oregon	1,018.9	985.5	964.8
Idaho	325.5	317.1	311.1	Pennsylvania	4,749.7	4,587.6	4,497.2
Illinois	4,794.8	4,640.8	4,625.5	Rhode Island	394.0	394.4	384.7
Indiana	2,109.3	2,027.7	2,012.0	South Carolina	1,194.6	1,180.2	1,160.1
Iowa	1,078.4	1,051.7	1,030.7	South Dakota	238.2	237.8	231.3
Kansas	941.3	936.7	913.1	Tennessee	1,737.7	1,726.9	1,711.9
Kentucky	1,165.4	1,159.8	1,127.9	Texas	6,166.0	6,287.6	6,257.1
Louisiana	1,638.9	1,622.1	1,616.9	Utah	556.5	563.5	559.5
Maine	427.5	421.0	413.6	Vermont	202.7	200.9	201.3
Maryland	1,720.8	1,697.2	1,686.4	Virginia	2,171.9	2,180.9	2,167.5
Massachusetts	2,631.4	2,642.6	2,596.1	Washington	1,595.5	1,581.0	1,550.8
Michigan	3,366.2	3,230.7	3,195.6	West Virginia	642.5	605.3	605.1
Minnesota	1,758.8	1,736.4	1,703.6	Wisconsin	1,929.7	1,882.4	1,870.7
Mississippi	818.9	793.5	789.6	Wyoming	223.2	222.2	214.7
Missouri	1,972.9	1,970.6	1,953.9				
				Virgin Islands	38.4	34.8	35.9

p= preliminary.

10. Employment by industry division and major manufacturing group, seasonally adjusted

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July p	Aug. p
TOTAL	90,406	91,105	91,322	91,363	91,224	90,996	90,642	90,460	90,459	90,304	90,083	90,166	89,839	89,662	89,451
PRIVATE SECTOR	74,166	75,081	75,428	75,459	75,307	75,088	74,725	74,596	74,609	74,445	74,231	74,313	74,007	73,949	73,751
GOODS-PRODUCING	25,658	25,481	25,637	25,583	25,383	25,176	24,908	24,684	24,631	24,450	24,289	24,255	23,994	23,880	23,730
Mining	1,027	1,132	1,190	1,192	1,195	1,202	1,206	1,201	1,203	1,187	1,182	1,152	1,124	1,107	1,099
Construction	4,346	4,176	4,145	4,124	4,101	4,071	4,026	3,986	3,974	3,934	3,938	3,988	3,940	3,929	3,902
Manufacturing	20,285	20,173	20,311	20,267	20,097	19,903	19,676	19,517	19,454	19,319	19,169	19,115	18,930	18,844	18,729
Production workers	14,214	14,021	14,136	14,087	13,915	13,717	13,488	13,431	13,290	13,179	13,042	13,008	12,852	12,798	12,708
Durable goods	12,187	12,117	12,228	12,184	12,059	11,901	11,724	11,622	11,575	11,490	11,375	11,332	11,200	11,157	11,027
Production workers	8,442	8,301	8,389	8,345	8,218	8,061	7,885	7,793	7,759	7,685	7,576	7,553	7,443	7,420	7,306
Lumber and wood products	690.5	668.7	671	661	643	628	615	607	611	607	615	617	615	618	618
Furniture and fixtures	465.8	467.3	475	473	469	462	457	452	449	446	443	443	442	442	443
Stone, clay, and glass products	662.1	638.2	643	638	629	620	610	596	596	590	584	586	580	580	582
Primary metal industries	1,142.2	1,121.1	1,134	1,125	1,104	1,082	1,053	1,038	1,024	1,007	976	945	926	913	891
Fabricated metal products	1,613.1	1,582.4	1,610	1,604	1,577	1553	1,529	1,515	1,505	1,496	1,481	1,472	1,452	1,447	1,432
Machinery, except electrical	2,494.0	2,507.0	2,532	2,539	2,532	2,511	2,486	2,459	2,446	2,419	2,389	2,377	2,322	2,276	2,247
Electric and electronic equipment	2,090.6	2,082.2	2,116	2,113	2,101	2,077	2,049	2,055	2,048	2,038	2,034	2,034	2,026	2,021	2,008
Transportation equipment	1,899.7	1,862.6	1,901	1,86:	1,861	1,830	1,781	1,777	1,778	1,774	1,748	1,755	1,745	1,763	1,715
Instruments and related products	711.3	726.8	734	734	731	727	725	720	718	716	713	713	708	708	704
Miscellaneous manufacturing	418.0	410.7	412	413	412	411	409	403	400	397	392	390	387	389	387
Nondurable goods	8,098	8,056	8,083	8,083	8,038	8,002	7,952	7,895	7,879	7,829	7,794	7,783	7,727	7,687	7,702
Production workers	5,772	5,721	5,747	5,742	5,697	5,656	5,603	5,548	5,531	5,494	5,466	5,455	5,409	5,378	5,399
Food and kindred products	1,708.0	1,674.3	1,659	1,658	1,662	1,664	1,661	1,657	1,663	1,658	1,643	1,652	1,637	1,648	1,634
Tobacco manufactures	68.9	69.8	70	69	69	69	68	69	68	68	67	67	67	65	66
Textile mill products	847.7	822.5	829	827	814	804	794	780	777	780	773	759	741	741	734
Apparel and other textile products	1,253.5	1,244.0	1,253	1,253	1,243	1,235	1,222	1,201	1,201	1,186	1,165	1,165	1,161	1,129	1,161
Paper and allied products	692.8	687.8	691	695	685	681	677	674	670	668	664	661	658	659	655
Printing and publishing	1,252.1	1,265.8	1,271	1,274	1,276	1,276	1,276	1,275	1,276	1,278	1,274	1,274	1,269	1,266	1,267
Chemicals and allied products	1,107.4	1,107.3	1,107	1,110	1,107	1,103	1,100	1,095	1,093	1,088	1,082	1,079	1,073	1,069	1,071
Petroleum and coal products	197.9	215.6	218	218	215	215	214	210	208	207	206	207	205	205	207
Rubber and miscellaneous plastics products	726.8	736.1	752	746	734	725	716	712	708	703	706	708	704	700	698
Leather and leather products	232.9	233.0	235	235	233	230	224	222	215	213	214	211	212	205	209
SERVICE-PRODUCING	64,748	65,625	65,685	65,780	65,831	65,820	65,734	65,776	65,828	65,854	65,794	65,911	65,845	65,782	65,721
Transportation and public utilities	5,146	5,157	5,168	5,181	5,162	5,150	5,128	5,125	5,115	5,100	5,094	5,101	5,078	5,041	5,038
Wholesale and retail trade	20,310	20,551	20,650	20,680	20,654	20,623	20,524	20,630	20,670	20,655	20,584	20,652	20,585	20,613	20,531
Wholesale trade	5,275	5,359	5,387	5,383	5,380	5,375	5,357	5,348	5,343	5,336	5,323	5,331	5,307	5,298	5,279
Retail trade	15,035	15,192	15,263	15,277	15,274	15,248	15,167	15,284	15,327	15,319	15,261	15,321	15,288	15,315	15,252
Finance, insurance, and real estate	5,160	5,301	5,319	5,328	5,325	5,324	5,331	5,328	5,326	5,336	5,335	5,342	5,352	5,358	5,375
Services	17,890	18,592	18,654	18,707	18,773	18,815	18,834	18,831	18,867	18,904	18,929	18,963	18,988	19,057	19,077
Government	16,241	16,024	15,894	15,904	15,917	15,908	15,917	15,864	15,850	15,859	15,852	15,853	15,832	15,713	15,700
Federal	2,866	2,772	2,769	2,764	2,757	2,749	2,756	2,741	2,737	2,736	2,730	2,728	2,739	2,733	2,721
State and local	13,375	13,253	13,125	13,140	13,160	13,159	13,161	13,123	13,113	13,123	13,122	13,125	13,093	12,980	12,979

p=preliminary.

11. Hours and earnings, by industry division, selected years, 1950-81

[Gross averages, production or nonsupervisory workers on nonagricultural payrolls]

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Private sector			Mining			Construction			Manufacturing		
1950	$53.13	39.8	$1.335	$67.16	37.9	$1.772	$69.68	37.4	$1.863	$58.32	40.5	$1.440
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1960[1]	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	269.34	40.2	6.70
1980	235.10	35.3	6.66	397.06	43.3	9.17	367.78	37.0	9.94	288.62	39.7	7.27
1981	255.20	35.2	7.25	439.19	43.7	10.05	398.52	36.9	10.80	318.00	39.8	7.99
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950	....	....	....	$44.55	40.5	$1.100	$50.52	37.7	$1.340	....	....	....
1955	....	....	....	55.16	39.4	1.40	63.92	37.6	1.70	....	....	....
1960[1]	....	....	....	66.01	38.6	1.71	75.14	37.2	2.02	....	....	....
1964	$118.78	41.1	$2.89	74.66	37.9	1.97	85.79	37.3	2.30	$70.03	36.1	$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	351.25	39.6	8.87	176.46	32.2	5.48	209.60	36.2	5.79	190.71	32.6	5.85
1981	382.18	39.4	9.70	190.95	32.2	5.93	229.05	36.3	6.31	208.97	32.6	6.41

[1] Data include Alaska and Hawaii beginning in 1959.

12. Weekly hours, by industry division and major manufacturing group, seasonally adjusted

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July p	Aug. p
PRIVATE SECTOR	35.3	35.2	35.2	35.0	35.1	35.1	35.0	34.4	35.0	34.9	34.8	35.0	34.9	34.9	34.9
MANUFACTURING	39.7	39.8	39.9	39.4	39.5	39.3	39.1	37.6	39.4	39.0	39.0	39.1	39.2	39.3	39.0
Overtime hours	2.8	2.8	3.0	2.7	2.7	2.5	2.4	2.3	2.4	2.3	2.4	2.3	2.4	2.4	2.4
Durable goods	40.1	40.2	40.4	39.7	40.0	39.7	39.5	38.2	39.8	39.5	39.5	39.6	39.7	39.7	39.5
Overtime hours	2.8	2.8	3.0	2.7	2.6	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.3
Lumber and wood products	38.5	38.7	38.4	37.6	37.8	37.7	37.7	35.0	37.9	37.6	37.6	38.5	38.7	38.4	38.0
Furniture and fixtures	38.1	38.4	38.4	37.4	38.0	37.6	37.9	33.6	37.7	37.3	37.4	37.5	37.8	37.8	37.6
Stone, clay, and glass products	40.8	40.6	40.7	40.3	40.1	40.1	39.7	38.6	40.1	40.0	40.0	40.2	40.4	40.6	40.5
Primary metal industries	40.1	40.5	40.8	40.6	40.0	39.6	39.2	38.3	39.4	38.8	38.5	38.5	38.9	38.9	39.2
Fabricated metal products	40.4	40.3	40.4	39.6	40.0	39.7	39.5	38.1	39.7	39.5	39.4	39.5	39.4	39.5	39.2
Machinery, except electrical	41.0	40.9	41.1	40.3	40.8	40.7	40.4	39.3	40.7	40.2	40.1	39.8	39.6	39.9	39.6
Electric and electronic equipment	39.6	39.9	40.3	39.7	39.8	39.4	39.5	38.3	39.8	39.4	39.3	39.4	39.5	39.8	39.4
Transportation equipment	40.6	40.9	41.2	40.1	40.6	40.4	39.7	39.0	40.5	40.4	41.1	41.1	41.6	41.0	40.9
Instruments and related products	40.5	40.4	40.6	40.4	40.3	40.2	39.9	39.0	39.9	39.9	39.9	40.2	40.2	40.1	40.0
Miscellaneous manufacturing	38.7	38.8	38.9	38.4	38.9	39.0	38.5	37.3	38.6	38.6	38.5	38.7	38.6	38.7	38.6
Nondurable goods	39.0	39.1	39.2	38.9	38.9	38.7	38.6	36.8	38.9	38.5	38.4	38.5	38.6	38.7	38.4
Overtime hours	2.8	2.8	2.9	2.8	2.8	2.7	2.6	2.5	2.6	2.5	2.6	2.5	2.5	2.6	2.6
Food and kindred products	39.7	39.7	39.4	39.3	39.5	39.5	39.8	39.1	40.2	39.5	39.4	39.4	39.5	39.9	39.4
Textile mill products	40.1	39.6	39.8	38.8	39.0	38.7	37.8	32.3	38.3	37.6	37.7	37.3	37.8	37.8	37.8
Apparel and other textile products	35.4	35.7	35.9	35.2	35.5	35.5	35.1	31.4	35.5	35.0	34.7	34.8	35.1	35.2	35.1
Paper and allied products	42.2	42.5	42.5	43.0	42.4	42.0	41.8	41.3	42.3	41.8	42.1	41.8	42.0	42.1	41.6
Printing and publishing	37.1	37.3	37.3	37.1	37.1	37.1	37.1	36.9	37.4	37.1	37.1	36.8	37.1	37.0	36.7
Chemicals and allied products	41.5	41.6	41.7	42.2	41.5	41.2	41.3	41.0	41.2	40.7	40.7	41.0	41.0	40.9	40.5
Petroleum and coal products	41.8	43.2	42.9	43.1	42.2	42.5	42.7	44.3	43.5	43.5	44.0	44.1	44.1	43.3	44.3
Rubber and miscellaneous plastics products	40.0	40.3	40.5	39.7	39.9	39.6	39.4	37.9	40.0	39.6	39.8	39.9	40.1	40.1	39.6
Leather and leather products	36.7	36.8	36.7	36.2	36.7	36.5	36.1	34.1	35.6	35.8	35.6	35.6	35.7	35.9	35.7
WHOLESALE AND RETAIL TRADE	32.2	32.2	32.2	32.1	32.0	32.1	32.0	31.7	32.0	31.9	31.8	32.0	31.9	31.9	32.0
WHOLESALE TRADE	38.5	38.6	38.6	38.5	38.4	38.5	38.4	38.1	38.5	38.4	38.3	38.5	38.6	38.5	38.6
RETAIL TRADE	30.2	30.1	30.1	30.1	29.9	30.0	29.9	29.7	29.9	29.8	29.8	30.0	29.8	29.9	30.0
SERVICES	32.6	32.6	32.5	32.5	32.6	32.6	32.6	32.5	32.6	32.6	32.7	32.7	32.7	32.6	32.7

NOTE: The industry divisions of mining; construction; tobacco manufactures (a major manufacturing group, nondurable goods); transportation and public utilities; and finance, insurance, and real estate are no longer shown. This is because the seasonal component in these is small relative to the trend-cycle, or irregular components, or both, and consequently cannot be precisely separated.

p = preliminary.

13. Hourly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July p	Aug. p
PRIVATE SECTOR	$6.66	$7.25	$7.30	$7.40	$7.42	$7.47	$7.45	$7.55	$7.54	$7.55	$7.58	$7.63	$7.64	$7.67	$7.69
Seasonally adjusted	(1)	(1)	7.34	7.37	7.40	7.45	7.48	7.52	7.53	7.54	7.59	7.65	7.67	7.70	7.73
MINING	9.17	10.05	10.12	10.27	10.25	10.39	10.41	10.65	10.62	10.62	10.65	10.66	10.82	10.81	10.95
CONSTRUCTION	9.94	10.80	10.92	11.07	11.05	11.18	11.25	11.58	11.32	11.33	11.32	11.48	11.41	11.53	11.61
MANUFACTURING	7.27	7.99	8.03	8.16	8.16	8.20	8.27	8.42	8.34	8.37	8.42	8.45	8.50	8.55	8.51
Durable goods	7.75	8.53	8.59	8.70	8.73	8.77	8.83	8.82	8.89	8.91	8.94	9.01	9.06	9.11	9.09
Lumber and wood products	6.55	7.00	7.13	7.16	7.10	7.16	7.18	7.36	7.27	7.28	7.24	7.41	7.58	7.63	7.61
Furniture and fixtures	5.49	5.91	5.99	6.01	6.06	6.05	6.12	6.29	6.19	6.21	6.21	6.23	6.30	6.33	6.36
Stone, clay, and glass products	7.50	8.27	8.41	8.53	8.50	8.54	8.56	8.70	8.62	8.65	8.72	8.80	8.86	8.93	8.92
Primary metal industries	9.77	10.81	10.89	11.22	10.97	11.10	11.08	11.23	11.20	11.15	11.24	11.23	11.31	11.36	11.45
Fabricated metal products	7.45	8.20	8.26	8.33	8.39	8.42	8.53	8.55	8.57	8.64	8.69	8.79	8.83	8.85	8.88
Machinery, except electrical	8.00	8.81	8.84	8.96	9.04	9.08	9.18	9.19	9.20	9.18	9.24	9.26	9.27	9.31	9.34
Electric and electronic equipment	6.94	7.62	7.73	7.75	7.80	7.83	7.90	7.98	7.96	8.01	8.03	8.05	8.09	8.18	8.25
Transportation equipment	9.35	10.39	10.37	10.49	10.74	10.74	10.76	10.79	10.82	10.89	10.89	11.08	11.21	11.26	11.21
Instruments and related products	6.80	7.43	7.55	7.59	7.60	7.68	7.81	7.93	7.94	8.00	8.07	8.16	8.23	8.30	8.36
Miscellaneous manufacturing	5.46	5.96	5.96	6.05	6.05	6.11	6.19	6.27	6.29	6.32	6.35	6.38	6.41	6.40	6.37
Nondurable goods	6.55	7.18	7.23	7.36	7.33	7.38	7.44	7.57	7.54	7.57	7.65	7.66	7.70	7.77	7.73
Food and kindred products	6.85	7.43	7.48	7.58	7.51	7.61	7.67	7.82	7.74	7.79	7.90	7.92	7.90	7.87	7.84
Tobacco manufactures	7.74	8.88	8.70	8.76	8.67	9.04	8.96	9.21	9.56	9.72	10.05	9.93	10.35	10.32	9.42
Textile mill products	5.07	5.52	5.65	5.69	5.72	5.73	5.72	5.76	5.76	5.76	5.79	5.79	5.79	5.81	5.82
Apparel and other textile products	4.56	4.96	4.96	5.04	5.05	5.04	5.04	5.18	5.13	5.15	5.18	5.16	5.18	5.18	5.19
Paper and allied products	7.84	8.60	8.67	8.95	8.82	8.89	8.96	9.06	8.99	9.03	9.11	9.14	9.28	9.40	9.40
Printing and publishing	7.53	8.18	8.25	8.37	8.40	8.42	8.48	8.58	8.56	8.59	8.59	8.61	8.66	8.72	8.76
Chemicals and allied products	8.30	9.12	9.19	9.38	9.37	9.42	9.53	9.68	9.66	9.71	9.81	9.83	9.95	10.01	10.01
Petroleum and coal products	10.10	11.38	11.32	11.55	11.47	11.58	11.59	11.91	12.29	12.32	12.50	12.52	12.53	12.40	12.39
Rubber and miscellaneous plastics products	6.52	7.16	7.23	7.29	7.30	7.31	7.38	7.51	7.49	7.45	7.52	7.56	7.64	7.67	7.63
Leather and leather products	4.58	4.99	4.97	5.09	5.09	5.11	5.15	5.19	5.22	5.24	5.32	5.32	5.36	5.31	5.38
TRANSPORTATION AND PUBLIC UTILITIES	8.87	9.70	9.87	9.95	9.94	10.05	10.06	10.10	10.13	10.07	10.14	10.17	10.20	10.28	10.41
WHOLESALE AND RETAIL TRADE	5.48	5.93	5.94	6.04	6.01	6.04	6.02	6.17	6.16	6.16	6.18	6.20	6.20	6.20	6.21
WHOLESALE TRADE	6.96	7.57	7.65	7.70	7.73	7.79	7.81	7.94	7.94	7.93	7.97	8.03	8.01	8.06	8.09
RETAIL TRADE	4.88	5.25	5.25	5.37	5.29	5.32	5.31	5.43	5.42	5.43	5.44	5.47	5.47	5.47	5.47
FINANCE, INSURANCE, AND REAL ESTATE	5.79	6.31	6.38	6.39	6.43	6.52	6.47	6.56	6.62	6.59	6.64	6.77	6.71	6.77	6.84
SERVICES	5.85	6.41	6.41	6.52	6.58	6.67	6.66	6.79	6.79	6.77	6.81	6.85	6.84	6.86	6.90

[1] Not available.

p = preliminary.

14. Hourly Earnings Index, for production workers on private nonagricultural payrolls, by industry

[1977 = 100]

Industry	Not seasonally adjusted					Seasonally adjusted						
	Aug. 1981	June 1982	July 1982 p	Aug. 1982 p	Percent change from: Aug. 1981 to Aug. 1982	Aug. 1981	Apr. 1982	May 1982	June 1982	July 1982 p	Aug. 1982 p	Percent change from: July 1982 to Aug. 1982
PRIVATE SECTOR (in current dollars)	140.0	147.6	148.5	149.1	6.5	140.5	146.3	147.7	148.1	148.8	149.7	0.6
Mining	149.5	158.6	161.6	162.0	8.3	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Construction	133.6	139.1	140.7	141.6	6.0	132.8	138.7	139.9	138.7	140.5	140.7	.1
Manufacturing	142.9	152.4	153.3	153.4	7.3	143.5	150.8	151.8	152.5	153.3	154.0	.4
Transportation and public utilities	141.6	147.3	147.7	149.8	5.8	141.6	146.9	148.2	149.1	148.3	149.8	1.0
Wholesale and retail trade	139.1	144.9	145.2	145.6	4.7	139.7	143.7	145.1	145.2	145.4	146.2	.5
Finance, insurance, and real estate	139.7	146.9	148.2	149.8	7.3	140.1	144.9	148.0	147.2	148.5	150.3	1.2
Services	138.0	146.6	147.6	148.4	7.5	139.2	145.1	146.5	147.3	148.5	149.7	.8
PRIVATE SECTOR (in constant dollars)	91.9	92.4	92.3	(2)	(2)	92.5	93.7	93.7	93.1	92.9	(2)	(2)

[1] This series is not seasonally adjusted because the seasonal component is small relative to the trend-cycle, irregular components, or both, and consequently cannot be separated with sufficient precision.

[2] Not available

p = preliminary.

15. Weekly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July p	Aug. p
PRIVATE SECTOR															
Current dollars	$225.10	$255.20	$259.88	$259.74	$261.18	$262.20	$262.24	$255.95	$262.39	$261.89	$262.27	$265.52	$267.40	$269.96	$271.46
Seasonally adjusted	(1)	(1)	258.37	257.86	259.74	261.50	261.10	258.69	263.55	263.15	264.89	267.75	267.88	268.73	(1)
Constant (1977) dollars	172.74	170.13	170.64	168.88	169.49	169.71	169.30	164.70	168.31	168.37	167.80	168.16	167.33	167.90	168.82
MINING	397.06	438.19	447.30	450.85	456.13	461.32	466.37	456.89	463.03	466.16	464.76	454.12	453.10	465.88	458.81
CONSTRUCTION	367.78	398.52	408.41	398.31	419.62	414.78	417.75	385.95	408.39	419.21	415.44	429.75	427.88	439.29	437.70
MANUFACTURING															
Current dollars	288.62	318.00	320.40	322.32	323.95	325.54	329.97	312.38	326.93	327.27	325.85	329.55	334.05	333.45	(1)
Constant (1977) dollars	212.06	212.00	210.37	209.57	210.22	210.71	213.02	201.02	209.70	210.33	208.46	208.71	209.04	207.37	206.40
Durable goods	310.78	342.91	345.32	349.26	350.07	351.88	356.73	336.29	352.93	352.84	350.45	355.90	360.59	357.11	357.24
Lumber and wood products	252.18	270.90	278.07	271.36	271.22	269.90	272.80	248.71	272.63	273.73	270.05	285.29	287.53	292.99	293.75
Furniture and fixtures	209.17	226.94	231.21	226.58	233.82	230.51	238.07	204.10	231.51	233.50	230.39	231.76	238.77	234.21	240.41
Stone, clay, and glass products	308.00	335.76	344.81	348.32	344.25	345.87	343.26	325.38	337.90	344.27	347.93	355.52	361.49	362.56	363.84
Primary metal industries	391.76	437.81	442.90	457.76	436.51	440.67	438.77	431.23	443.52	434.85	434.99	430.11	439.96	438.13	443.12
Fabricated metal products	300.98	330.46	332.89	330.70	337.29	337.64	345.47	323.19	337.88	342.14	338.91	348.33	349.67	344.27	347.21
Machinery except electrical	329.00	358.33	359.79	361.98	367.93	372.29	381.89	360.25	374.44	370.87	367.75	367.82	367.09	384.95	388.13
Electric and electronic equipment	276.21	304.04	309.20	307.88	311.22	311.63	318.16	304.04	316.81	316.40	313.17	315.56	318.56	319.84	323.40
Transportation equipment	379.61	424.95	421.02	418.55	440.34	438.19	445.46	414.34	437.13	438.96	441.05	455.39	466.34	457.16	452.88
Instruments and related products	275.40	300.17	305.02	306.64	307.04	313.34	317.87	306.10	317.60	320.80	318.77	327.22	330.85	327.85	332.73
Miscellaneous manufacturing	211.30	231.25	231.84	234.14	237.77	241.35	242.03	229.46	241.54	244.58	242.57	245.63	247.43	244.48	245.88
Nondurable goods	256.45	280.74	284.86	287.78	290.60	288.56	291.65	277.85	291.04	289.93	291.47	294.14	297.99	299.92	298.38
Food and kindred products	271.95	294.97	298.45	300.89	296.65	302.88	309.87	302.63	307.28	303.81	308.52	312.05	312.05	314.80	312.82
Tobacco manufactures	294.89	344.54	354.09	352.15	341.60	350.75	341.38	332.48	369.15	362.56	367.83	369.40	367.44	385.97	385.50
Textile mill products	203.31	218.59	225.44	221.34	225.37	224.62	220.79	179.71	210.46	217.15	215.39	219.44	220.60	216.71	220.58
Apparel and other textile products	161.42	177.07	180.05	177.41	180.79	180.43	178.32	155.40	180.58	180.77	178.19	180.08	183.89	183.37	184.25
Paper and allied products	330.85	365.50	367.81	368.64	373.97	376.05	362.58	374.18	377.58	376.55	380.80	379.31	386.76	382.92	380.10
Printing and publishing	279.36	305.11	309.36	313.04	312.48	314.07	321.39	312.31	317.58	318.69	316.11	315.99	319.55	321.77	324.12
Chemicals and allied products	344.45	379.39	380.47	385.84	388.86	391.67	398.35	394.94	397.85	395.20	399.27	401.06	406.98	407.41	403.40
Petroleum and coal products	422.18	491.62	486.76	512.82	494.36	499.10	493.73	514.51	518.64	522.37	550.00	549.63	553.83	545.80	550.12
Rubber and miscellaneous plastics products	290.80	288.55	292.09	289.41	293.46	291.67	295.94	283.89	298.65	295.77	297.04	300.13	306.36	302.97	302.15
Leather and leather products	168.06	183.63	183.39	183.24	186.80	187.03	187.46	172.83	184.27	186.54	187.26	191.52	196.71	190.63	193.14
TRANSPORTATION AND PUBLIC UTILITIES	351.25	382.18	389.87	390.04	388.65	393.96	395.36	388.65	397.10	392.73	393.43	394.80	399.84	404.24	410.15
WHOLESALE AND RETAIL TRADE	176.46	190.95	194.83	194.49	192.32	192.68	194.45	191.89	194.66	194.66	195.91	197.78	199.02	202.12	203.07
WHOLESALE TRADE	267.96	292.20	296.06	296.45	298.38	300.69	302.25	300.13	303.31	303.72	304.45	308.35	309.16	311.92	313.06
RETAIL TRADE	147.38	158.03	162.23	162.17	157.64	158.54	160.89	157.47	159.35	159.84	161.02	163.01	164.65	167.93	166.46
FINANCE, INSURANCE, AND REAL ESTATE	209.60	229.05	232.23	230.04	232.77	236.02	234.21	237.47	239.64	239.22	240.37	245.75	242.23	245.75	248.98
SERVICES	190.71	208.97	210.89	211.25	213.85	216.78	217.12	219.32	220.68	220.03	221.33	222.60	224.35	227.07	228.39

[1] Not available.

p = preliminary.

UNEMPLOYMENT INSURANCE DATA

National unemployment insurance data are compiled monthly by the Employment and Training Administration of the U.S. Department of Labor from monthly reports of unemployment insurance activity prepared by State agencies. Railroad unemployment insurance data are prepared by the U.S. Railroad Retirement Board.

Definitions

Data for **all programs** represent an unduplicated count of insured unemployment under State programs, Unemployment Compensation for Ex-Servicemen, and Unemployment Compensation for Federal Employees, and the Railroad Insurance Act.

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

An **application** for benefits is filed by a railroad worker at the beginning of his first period of unemployment in a benefit year; no application is required for subsequent periods in the same year. **Number of payments** are payments made in 14-day registration periods. The **average amount of benefit payment** is an average for all compensable periods, not adjusted for recovery of overpayments or settlement of underpayments. However, **total benefits paid** have been adjusted.

16. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1981						1982						
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July p
All programs:													
Insured unemployment	3,012	2,874	2,880	2,753	3,228	3,935	4,681	4,723	4,892	4,760	4,388	4,328	4,493
State unemployment insurance program:[1]													
Initial claims[2]	2,114	1,610	1,681	1,996	2,286	3,272	3,328	2,272	2,418	2,347	r1,989	r2,399	2,654
Insured unemployment (average weekly volume)	2,743	2,658	2,486	2,592	3,061	3,778	4,470	4,376	4,282	4,087	3,729	3,707	3,910
Rate of insured unemployment	3.1	3.0	2.9	3.0	3.5	4.3	5.1	5.0	4.9	4.6	4.3	4.3	4.6
Weeks of unemployment compensated	10,486	9,594	9,565	9,424	10,052	14,592	15,982	15, 631	18,144	16,156	r13,980	r14,637	14,056
Average weekly benefit amount for total unemployment	$103.47	$105.94	$107.39	$108.92	$110.52	$112.83	$114.83	$116.95	$117.10	$117.51	$118.07	$118.50	$117.27
Total uenefits paid	$1,081,899	$1,004,384	$1,001,020	$997,757	$1,080,810	$1,592,546	$1,764,206	$1,781,830	$2,072,842	$1,848,260	r$1,573,461	r$1,989,079	$1,679,416
Unemployment compensation for ex-servicemen:[3]													
Initial claims[1]	22	19	15	11	9	11	8	8	10	9	8	10	10
Insured unemployment (average weekly volume)	44	44	34	28	22	19	16	13	11	10	9	8	7
Weeks of unemployment compensated	203	190	153	116	91	93	65	49	48	37	31	29	25
Total benefits paid	$22,785	$21,425	$17,144	$12,852	$10,043	$10,155	$7,098	$5,304	$5,141	$4,029	r$3,395	r$3,310	$2,821
Unemployment compensation for Federal civilian employees:[4]													
Initial claims	15	17	18	20	16	17	17	12	13	13	11	14	13
Insured unemployment (average weekly volume)	25	25	29	32	36	39	40	40	38	33	29	28	29
Weeks of unemployment compensated	105	102	100	112	127	174	162	154	172	147	r120	r123	120
Total benefits paid	$10,805	$9,543	$10,495	$11,719	$13,491	$18,891	$18,040	$17,517	$19,677	$16,821	r$13,526	r$13,907	$12,445
Railroad unemployment insurance:													
Applications	41	13	15	21	13	19	22	11	9	5	5	36	68
Insured unemployment (average weekly volume)	28	29	34	40	44	54	75	67	65	57	44	44	55
Number of payments	32	63	74	86	83	117	153	140	154	130	95	93	100
Average amount of benefit payment	$199.63	$202.53	$207.98	$197.26	$207.08	$212.33	$213.39	$214.07	$215.71	$209.48	$200.75	$199.15	$202.54
Total benefits paid	$11,541	$7,071	15,046	15,994	$16,377	$25,292	$30,544	$29,011	$33,853	$26,262	$19.110	$18,574	$17,998
Employment service:[5]													
New applications and renewals	....	....	16,502	....	....	4,081	....	....	7,439	....	....	....	10,985
Nonfarm placements	....	....	3,509	....	....	731	....	....	1,232	....	....	....	1,902

[1] Initial claims and State insured unemployment include data under the program for Puerto Rican sugarcane workers.

[2] Excludes transition claims under State programs.

[3] Excludes data on claims and payments made jointly with other programs.

[4] Excludes data on claims and paurnents made jointly with State programs.

[5] Cumulative total for fiscal year (October 1-September 30). Data computed quarterly.

Note: Data for Puerto Rico and the Virgin Islands included. Dashes indicate data not available.

r=revised.

p=preliminary.

PRICE DATA

PRICE DATA are gathered by the Bureau of Labor Statistics from retail and primary markets in the United States. Price indexes are given in relation to a base period (1967 = 100, unless otherwise noted).

Definitions

The **Consumer Price Index** is a monthly statistical measure of the average change in prices in a fixed market basket of goods and services. Effective with the January 1978 index, the Bureau of Labor Statistics began publishing CPI's for two groups of the population. One index, a new CPI for All Urban Consumers, covers 80 percent of the total noninstitutional population; and the other index, a revised CPI for Urban Wage Earners and Clerical Workers, covers about half the new index population. The All Urban Consumers index includes, in addition to wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctor's and dentist's fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items is kept essentially unchanged between major revisions so that only price changes will be measured. Prices are collected from over 18,000 tenants, 24,000 retail establishments, and 18,000 housing units for property taxes in 85 urban areas across the country. All taxes directly associated with the purchase and use of items are included in the index. Because the CPI's are based on the expenditures of two population groups in 1972–73, they may not accurately reflect the experience of individual families and single persons with different buying habits.

Though the CPI is often called the "Cost-of-Living Index," it measures only price change, which is just one of several important factors affecting living costs. Area indexes do not measure differences in the level of prices among cities. They only measure the average change in prices for each area since the base period.

Producer Price Indexes measure average changes in prices received in primary markets of the United States by producers of commodities in all stages of processing. The sample used for calculating these indexes contains about 2,800 commodities and about 10,000 quotations per month selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The universe includes all commodities produced or imported for sale in commercial transactions in primary markets in the United States.

Producer Price Indexes can be organized by stage of processing or by commodity. The stage of processing structure organizes products by degree of fabrication (that is, finished goods, intermediate or semifinished goods, and crude materials). The commodity structure organizes products by similarity of end-use or material composition.

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States, from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire. Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

In calculating Producer Price Indexes, price changes for the various commodities are averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1972. The detailed data are aggregated to obtain indexes for stage of processing groupings, commodity groupings, durability of product groupings, and a number of special composite groupings.

Price indexes for the output of selected SIC industries measure average price changes in commodities produced by particular industries, as defined in the *Standard Industrial Classification Manual 1972* (Washington, U.S. Office of Management and Budget, 1972). These indexes are derived from several price series, combined to match the economic activity of the specified industry and weighted by the value of shipments in the industry. They use data from comprehensive industrial censuses conducted by the U.S. Bureau of the Census and the U.S. Department of Agriculture.

Notes on the data

Beginning with the May 1978 issue of the *Review*, regional CPI's cross classified by population size, were introduced. These indexes will enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes will be published bimonthly. (See table 19.)

For further details about the new and the revised indexes and a comparison of various aspects of these indexes with the old unrevised CPI, see *Facts About the Revised Consumer Price Index*, a pamphlet in the Consumer Price Index Revision 1978 series. See also *The Consumer Price Index: Concepts and Content Over the Years*, Report 517, revised edition (Bureau of Labor Statistics, May 1978).

For interarea comparisons of living costs at three hypothetical standards of living, see the family budget data published in the *Handbook of Labor Statistics, 1977*, Bulletin 1966 (Bureau of Labor Statistics, 1977), tables 122–133. Additional data and analysis on price changes are provided in the *CPI Detailed Report* and *Producer Prices and Price Indexes*, both monthly publications of the Bureau.

As of January 1976, the Wholesale Price Index (as it was then called) incorporated a revised weighting structure reflecting 1972 values of shipments. From January 1967 through December 1975, 1963 values of shipments were used as weights.

For a discussion of the general method of computing consumer, producer, and industry price indexes, see *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976), chapters 13–15. See also John F. Early, "Improving the measurement of producer price change," *Monthly Labor Review*, April 1978, pp. 7–15. For industry prices, see also Bennett R. Moss, "Industry and Sector Price Indexes," *Monthly Labor Review*, August 1965, pp. 974–82.

17. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967–81

[1967 = 100]

Year	All items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	116.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.2	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	6.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	267.2	11.3	203.7	8.5	213.6	8.8
1981	272.3	10.2	267.8	7.7	293.2	11.4	186.6	5.2	281.3	12.3	295.1	10.4	219.0	7.5	233.3	9.2

18. Consumer Price Index for All Urban Consumers and revised CPI for Urban Wage Earners and Clerical Workers, U.S. city average—general summary and groups, subgroups, and selected items

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
All items	274.4	283.4	283.1	284.3	287.1	290.6	292.2	274.6	282.9	282.5	283.7	286.5	290.1	291.8
Food and beverages	268.9	275.8	275.6	276.5	278.1	280.2	280.8	269.4	276.0	275.9	276.8	278.4	280.5	281.2
Housing	297.0	307.3	306.7	309.4	313.8	317.5	319.2	297.0	306.7	306.2	309.2	313.7	317.5	319.3
Apparel and upkeep	184.7	188.0	191.1	191.9	191.5	190.8	189.7	185.5	187.3	190.5	191.2	190.6	189.6	188.7
Transportation	282.6	288.0	285.1	282.9	285.6	292.8	296.1	283.6	289.6	286.6	284.3	287.1	294.5	297.9
Medical care	295.8	316.2	318.8	321.7	323.8	326.4	330.0	295.4	314.9	317.4	320.2	322.3	324.8	329.1
Entertainment	221.1	231.2	232.8	233.9	234.4	235.6	236.6	218.7	228.1	229.5	230.5	231.1	232.3	233.5
Other goods and services	234.4	250.3	252.2	253.8	255.0	255.8	257.2	232.4	247.1	249.3	250.9	252.4	253.1	254.5
Commodities	255.0	259.5	258.8	258.9	261.5	265.1	266.5	255.7	259.9	259.1	259.2	261.7	265.4	266.9
Commodities less food and beverages	244.7	248.1	247.1	247.0	249.8	254.0	255.7	245.5	248.6	247.5	247.2	250.1	254.5	256.3
Nondurables less food and beverages	262.9	265.3	263.4	259.7	261.0	266.3	268.2	266.0	267.5	265.3	261.3	262.6	268.2	270.3
Durables	229.6	233.7	233.5	235.8	238.8	243.2	244.7	228.4	232.5	232.4	234.8	238.9	242.3	243.9
Services	308.8	325.3	325.5	328.4	331.8	334.9	337.0	309.6	325.5	325.8	329.1	332.4	335.7	337.9
Rent, residential	207.8	218.6	219.6	220.1	221.8	222.6	224.8	207.4	218.1	219.1	219.6	221.3	222.1	224.3
Household services less rent	374.8	383.7	382.5	387.3	403.0	407.7	409.4	378.4	387.7	396.6	402.3	408.2	413.3	415.3
Transportation services	275.0	287.6	288.8	290.3	291.3	294.7	297.2	273.8	286.7	287.9	289.2	290.0	293.2	295.7
Medical care services	319.2	342.4	345.1	348.0	350.2	353.0	357.3	318.5	340.6	343.0	345.8	348.0	350.7	354.7
Other services	237.6	253.0	254.0	255.3	255.9	257.0	258.0	236.8	251.3	252.4	253.8	254.4	255.5	256.6
Special indexes:														
All items less food	272.7	282.1	281.7	282.8	286.0	289.7	291.5	273.1	281.7	281.3	282.5	285.6	289.4	291.4
All items less mortgage interest costs	259.3	267.1	267.2	267.9	270.3	273.6	275.1	260.0	267.2	267.3	267.9	270.3	273.7	275.3
Commodities less food	242.6	246.0	245.2	245.0	247.8	251.9	253.5	243.5	246.6	245.8	245.3	248.1	252.4	254.1
Nondurables less food	257.5	260.1	258.4	256.0	258.2	261.2	263.0	260.4	262.2	260.2	256.6	257.8	263.0	265.0
Nondurables less food and apparel	297.8	300.5	296.6	291.4	293.4	301.0	304.3	298.8	302.0	297.8	292.3	294.4	302.4	305.8
Nondurables	267.1	271.7	270.7	269.3	270.7	274.4	275.7	268.7	272.8	271.6	270.1	271.5	275.4	276.8
Services less rent	329.1	345.7	345.7	349.1	352.8	356.5	358.5	329.3	346.3	346.4	350.2	353.8	357.7	359.9
Services less medical care	305.4	321.1	321.1	324.0	327.5	330.7	332.5	306.3	321.6	321.6	324.9	328.3	331.7	333.6
Domestically produced farm foods	259.5	265.1	263.8	264.5	267.1	270.3	270.7	259.0	264.0	262.7	263.5	266.0	269.2	269.7
Selected beef cuts	275.3	271.7	272.0	275.1	281.6	289.1	287.4	277.9	273.1	273.3	276.4	283.1	290.6	288.8
Energy	415.7	413.0	406.1	395.7	402.1	418.6	424.5	418.9	415.4	407.9	398.9	403.1	420.4	426.5
All items less energy	263.5	273.4	273.6	275.7	278.3	280.7	282.0	262.7	272.1	272.3	274.5	277.0	279.4	280.8
All items less food and energy	259.0	269.5	269.8	272.2	274.9	277.3	278.7	258.1	268.0	268.3	270.9	273.6	276.0	277.6
Commodities less food and energy	219.4	224.5	225.3	227.2	229.9	232.1	233.1	218.7	223.6	224.5	226.4	229.1	231.3	232.4
Energy commodities	451.3	440.1	424.5	406.6	410.2	430.8	436.2	451.9	440.7	425.0	406.9	410.5	431.6	439.0
Services less energy	304.9	321.9	321.5	324.5	327.2	329.9	331.8	305.7	322.2	321.8	325.2	327.9	330.6	332.6
Purchasing power of the consumer dollar, 1967 = $1	$0.364	$0.353	$0.353	$0.352	$0.348	$0.344	$0.342	$0.364	$0.353	$0.354	$0.352	$0.349	$0.345	$0.343

18. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
FOOD AND BEVERAGES	268.9	275.8	275.6	276.5	278.1	280.2	280.8	269.4	276.0	275.9	276.8	278.4	280.5	281.2
Food	276.2	283.3	283.0	283.9	285.5	287.8	288.5	276.6	283.4	283.1	284.1	285.7	288.0	288.6
Food at home	271.6	278.0	277.1	277.9	279.8	282.6	282.8	271.1	277.0	276.2	277.0	278.8	281.6	281.9
Cereals and bakery products	272.4	280.9	281.3	281.7	283.3	283.6	284.3	271.5	279.8	280.0	280.4	282.0	282.3	283.0
Cereals and cereal products (12/77 = 100)	149.0	154.0	153.9	153.6	154.5	154.5	154.8	150.6	155.0	154.8	154.6	155.4	155.5	155.8
Flour and prepared flour mixes (12/77 = 100)	138.5	138.1	139.2	139.7	141.8	142.1	143.5	141.9	139.6	139.6	140.1	142.1	142.5	144.0
Cereal (12/77 = 100)	153.4	164.8	165.2	165.4	165.7	166.1	166.3	154.8	166.8	167.2	167.4	167.8	168.2	168.5
Rice, pasta, and cornmeal (12/77 = 100)	151.2	152.4	151.2	149.6	150.2	149.4	148.9	153.2	153.6	152.4	150.8	151.5	150.6	150.0
Bakery products (12/77 = 100)	142.5	148.8	147.1	147.5	148.3	148.6	149.0	141.4	145.7	146.0	146.3	147.2	147.4	147.8
White bread	236.4	243.8	242.3	242.8	243.8	242.4	246.1	233.9	240.0	238.3	238.8	240.0	238.3	241.9
Other breads (12/77 = 100)	140.6	143.7	145.1	145.2	146.3	145.6	145.1	142.9	145.5	147.0	147.1	148.2	147.5	147.0
Fresh biscuits, rolls, and muffins (12/77 = 100)	142.4	146.4	148.4	147.6	149.7	149.9	148.9	141.7	142.8	144.6	143.8	146.0	146.2	145.4
Fresh cakes and cupcakes (12/77 = 100)	142.7	147.0	148.0	148.4	149.0	149.2	148.9	141.4	145.8	146.4	146.8	147.4	147.5	147.2
Cookies (12/77 = 100)	143.0	149.2	149.4	150.2	150.5	150.7	150.0	142.6	150.1	150.2	151.2	151.4	151.5	150.9
Crackers, bread, and cracker products (12/77 = 100)	131.6	135.4	135.3	137.3	139.6	140.9	141.8	131.2	136.8	136.5	138.7	141.0	142.3	143.2
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	143.9	147.0	146.3	146.8	147.3	148.9	148.5	142.8	149.3	148.7	149.3	149.9	151.5	151.1
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	147.2	151.5	153.5	153.4	153.6	156.3	156.2	140.9	144.8	146.8	146.5	146.7	149.4	149.2
Meats, poultry, fish, and eggs	254.1	258.8	256.9	258.3	261.0	266.0	268.5	254.1	256.4	256.4	257.8	260.7	265.8	268.3
Meats, poultry, and fish	260.7	261.2	262.1	264.2	268.2	274.3	276.2	260.5	260.7	261.5	263.6	267.7	273.9	275.8
Meats	259.6	260.2	261.2	263.6	269.7	277.2	278.8	259.7	259.7	260.6	262.8	269.0	276.5	278.2
Beef and veal	274.5	271.5	271.7	274.8	281.1	288.2	286.7	276.5	272.2	272.3	275.3	281.9	289.0	287.4
Ground beef other than canned	264.5	265.0	265.8	266.9	269.4	274.6	272.5	267.9	266.3	266.9	267.9	270.7	275.9	273.9
Chuck roast	283.5	285.8	284.3	285.4	287.2	295.4	296.2	295.5	295.0	293.1	294.1	296.2	304.9	305.3
Round roast	245.6	245.3	243.0	244.9	252.4	257.0	251.8	249.8	248.9	245.9	247.9	255.9	260.1	254.7
Round steak	258.9	256.1	258.8	262.8	269.2	278.8	271.2	257.0	254.4	256.4	260.6	267.8	277.2	269.4
Sirloin steak	284.3	257.1	260.6	271.1	282.3	294.1	295.6	285.6	257.8	262.2	272.4	283.8	295.5	298.0
Other beef and veal (12/77 = 100)	163.5	161.4	161.5	163.7	169.0	173.3	173.3	162.4	159.7	159.8	162.1	167.5	171.9	171.7
Pork	231.5	238.9	239.5	241.6	249.9	259.5	265.4	232.6	238.5	238.9	241.0	249.2	258.9	264.9
Bacon	228.1	245.6	249.6	255.9	267.7	280.7	283.9	230.5	249.3	253.3	259.7	271.9	285.3	288.7
Chops	221.8	222.1	216.3	223.4	230.0	241.2	248.9	222.4	220.2	214.7	221.7	228.2	239.6	247.3
Ham other than canned (12/77 = 100)	102.0	107.0	109.2	105.4	111.1	112.6	115.3	100.4	104.7	106.5	102.8	108.3	109.6	112.4
Sausage	289.7	300.0	305.8	305.7	313.3	326.3	331.9	293.4	301.0	306.6	306.3	314.2	327.2	332.9
Canned ham	233.0	246.1	247.6	245.6	249.9	253.2	255.3	234.4	249.9	251.2	248.9	253.2	256.4	258.7
Other pork (12/77 = 100)	133.6	133.8	132.6	135.2	138.9	145.4	150.3	134.5	133.1	131.7	134.5	138.2	144.7	149.5
Other meats	258.4	258.1	262.4	262.8	264.0	268.5	272.0	255.6	257.4	261.7	261.8	263.2	267.8	271.3
Frankfurters	251.8	258.0	260.5	259.5	262.7	268.8	274.2	251.9	257.1	260.0	258.4	261.8	268.3	273.4
Bologna, liverwurst, and salami (12/77 = 100)	145.9	146.1	149.2	150.2	150.7	154.6	156.5	144.6	146.2	149.4	150.3	150.7	154.6	156.6
Other lunchmeats (12/77 = 100)	129.1	131.7	133.7	133.2	134.3	135.5	137.3	128.5	129.7	131.7	131.2	132.3	133.4	135.1
Lamb and organ meats (12/77 = 100)	147.6	137.7	141.0	142.6	141.2	143.1	143.9	148.9	141.0	144.2	145.6	144.4	146.5	147.3
Poultry	204.8	195.7	194.7	193.3	196.0	197.5	199.6	203.1	193.8	192.8	191.5	194.1	195.8	197.8
Fresh whole chicken	206.9	196.3	195.1	194.1	196.8	199.1	201.2	202.9	194.4	192.8	192.0	194.7	197.0	198.8
Fresh and frozen chicken parts (12/77 = 100)	133.0	128.9	127.5	127.6	128.3	129.3	129.4	133.3	127.1	125.9	125.9	126.5	127.5	127.9
Other poultry (12/77 = 100)	130.0	123.2	123.9	121.3	124.3	124.6	127.3	129.3	122.6	123.3	120.8	123.9	124.3	126.9
Fish and seafood	356.9	373.8	376.3	382.0	366.3	365.2	370.2	353.5	373.2	375.5	381.4	365.0	364.2	368.7
Canned fish and seafood (12/77 = 100)	140.6	140.9	141.0	141.5	139.8	139.9	140.5	139.0	140.4	140.5	140.8	139.2	139.4	139.9
Fresh and frozen fish and seafood (12/77 = 100)	133.1	143.2	144.7	147.9	139.4	138.6	141.3	131.9	143.2	144.6	148.0	138.9	138.3	140.8
Eggs	174.2	205.1	195.2	186.9	172.3	162.5	173.6	175.0	206.1	196.3	187.9	173.4	163.4	174.7
Dairy products	244.2	246.5	246.5	247.5	247.0	246.3	247.5	243.9	245.8	245.9	246.8	246.3	245.7	246.8
Fresh milk and cream (12/77 = 100)	134.9	135.5	135.3	135.9	135.7	135.2	135.6	134.4	134.9	134.8	135.3	135.1	134.7	135.1
Fresh whole milk	220.7	221.5	221.7	222.2	222.0	221.3	221.6	219.9	220.5	220.8	221.3	221.1	220.4	220.7
Other fresh milk and cream (12/77 = 100)	134.9	135.8	135.1	136.2	135.7	135.4	136.2	134.5	135.5	134.6	135.7	135.2	134.9	135.7
Processed dairy products (12/77 = 100)	142.5	144.8	144.9	145.6	145.2	144.9	145.9	143.1	145.1	145.3	145.9	145.5	145.2	146.2
Butter	245.8	248.9	250.1	250.1	251.1	250.9	251.1	247.7	251.4	252.7	252.7	253.7	253.4	253.7
Cheese (12/77 = 100)	140.7	142.8	143.3	143.7	144.0	143.2	144.2	141.3	143.1	143.6	144.0	144.3	143.6	144.5
Ice cream and related products (12/77 = 100)	147.6	150.0	149.5	150.9	148.7	149.6	150.4	148.0	149.1	148.9	150.2	147.9	148.7	149.6
Other dairy products (12/77 = 100)	136.6	140.0	139.5	139.9	139.7	138.7	141.3	137.2	140.8	140.3	140.8	140.4	139.4	142.0
Fruits and vegetables	284.4	301.5	293.1	294.0	297.9	305.6	299.7	281.7	297.4	289.1	290.3	293.6	301.0	295.3
Fresh fruits and vegetables	294.0	319.6	302.1	304.1	311.7	325.9	313.8	290.2	313.4	296.1	296.9	305.1	318.6	307.1
Fresh fruits	292.1	291.2	297.8	306.7	318.8	340.8	332.4	285.5	280.1	287.3	295.5	306.9	327.0	320.5
Apples	251.9	279.5	288.7	287.5	299.8	321.4	331.8	253.1	279.9	288.5	287.8	300.1	321.9	333.3
Bananas	240.6	251.0	263.0	268.5	261.6	267.9	245.4	233.8	247.9	261.1	266.1	259.3	265.5	243.6
Oranges	327.8	313.1	316.3	330.8	362.1	406.6	438.2	307.0	281.1	285.9	300.2	328.3	367.5	398.9
Other fresh fruits (12/77 = 100)	160.4	154.5	157.2	163.4	168.2	177.1	161.6	150.9	149.0	151.8	157.6	162.4	170.3	156.1
Fresh vegetables	295.9	346.2	306.1	301.8	305.1	311.9	296.4	294.4	343.5	304.2	302.0	303.7	311.1	295.0
Potatoes	414.9	297.4	301.0	306.1	320.3	344.9	370.9	404.2	291.5	294.8	300.8	313.6	339.7	366.0
Lettuce	261.3	408.9	270.9	355.2	291.6	269.1	254.5	259.2	408.0	271.3	358.6	293.5	270.0	253.0
Tomatoes	194.0	288.5	258.1	220.5	226.5	275.6	270.2	195.5	293.2	261.8	224.9	230.6	278.9	274.9
Other fresh vegetables (12/77 = 100)	154.5	199.1	185.0	166.3	179.3	177.5	155.6	155.8	197.2	184.0	166.7	178.6	177.0	154.8
Processed fruits and vegetables	276.4	284.2	285.8	285.5	285.4	285.9	286.3	274.6	282.0	283.7	283.3	283.3	283.9	284.8
Processed fruits (12/77 = 100)	143.1	147.9	149.0	148.2	148.3	148.0	148.5	142.8	147.4	148.6	147.7	147.9	147.6	148.1
Frozen fruit and fruit juices (12/77 = 100)	144.0	147.8	149.2	147.1	145.7	144.4	143.5	142.9	148.6	148.2	146.1	144.8	143.4	142.6
Fruit juices other than frozen (12/77 = 100)	146.8	151.5	152.4	151.5	152.2	151.7	152.2	146.1	150.3	151.4	150.4	151.0	150.7	151.0
Canned and dried fruits (12/77 = 100)	138.4	144.3	145.3	145.6	146.4	147.0	148.8	139.1	144.8	145.9	146.2	147.0	147.6	149.4
Processed vegetables (12/77 = 100)	134.6	137.7	138.2	138.6	138.5	139.3	139.7	133.6	136.6	137.2	137.5	137.4	138.2	138.6
Frozen vegetables (12/77 = 100)	133.2	141.7	142.0	144.0	143.9	145.6	146.7	134.1	143.1	143.4	145.3	145.2	146.9	148.0

18. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
FOOD AND BEVERAGES — Continued														
Food — Continued														
Food at home — Continued														
Fruits and vegetables — Continued														
Cut corn and canned beans except lima (12/77 = 100)	136.0	140.7	141.2	140.5	140.7	141.1	141.0	134.8	138.3	138.8	137.9	138.5	138.8	138.6
Other canned and dried vegetables (12/77 = 100)	134.6	134.1	134.8	135.0	134.6	135.2	135.4	132.8	132.6	133.3	133.5	133.2	133.8	134.1
Other foods at home	323.3	330.7	331.7	331.6	332.6	332.6	332.2	324.2	331.5	332.6	332.6	333.5	333.5	333.1
Sugar and sweets	360.0	364.2	365.5	365.3	365.7	366.8	369.5	362.8	364.1	365.4	365.2	365.6	366.9	369.7
Candy and chewing gum (12/77 = 100)	145.9	150.0	150.3	150.9	150.0	150.4	150.5	147.3	149.8	150.1	150.8	149.9	150.5	150.6
Sugar and artificial sweeteners (12/77 = 100)	164.6	160.0	161.0	159.9	160.5	161.4	164.6	166.6	161.3	162.4	161.1	161.8	162.8	166.1
Other sweets (12/77 = 100)	142.9	146.9	147.4	147.2	148.9	148.9	149.8	141.8	145.1	145.5	145.3	147.0	146.9	147.9
Fats and oils (12/77 = 100)	260.0	260.5	259.6	260.4	260.6	260.7	259.3	260.0	260.6	259.7	260.4	260.6	260.7	259.3
Margarine	255.9	258.7	256.7	259.6	259.7	261.2	258.4	256.6	256.1	256.1	259.1	259.3	260.8	258.0
Nondairy substitutes and peanut butter (12/77 = 100)	181.0	157.8	156.1	157.3	156.0	156.5	154.9	179.4	158.3	154.4	155.6	154.2	154.9	153.1
Other fats, oils, and salad dressings (12/77 = 100)	129.4	129.8	129.5	129.0	128.6	129.1	129.2	129.4	130.2	130.0	129.5	130.2	129.7	129.7
Nonalcoholic beverages	410.3	423.4	424.8	424.1	425.6	424.8	422.8	411.3	425.0	426.6	426.0	427.3	426.6	424.4
Cola drinks, excluding diet cola	294.7	304.6	306.6	304.9	306.1	305.9	302.9	290.8	302.0	303.8	302.4	303.6	303.3	300.4
Carbonated drinks, including diet cola (12/77 = 100)	139.6	143.8	143.4	143.4	144.3	143.1	143.3	138.3	141.7	141.4	141.5	142.3	141.2	141.1
Roasted coffee	351.4	364.4	366.6	369.6	369.3	365.1	364.3	346.6	359.9	362.2	365.0	364.3	360.1	359.3
Freeze dried and instant coffee	334.3	342.8	343.6	343.4	344.3	344.3	344.9	334.9	342.5	343.4	343.0	343.9	343.8	344.4
Other noncarbonated drinks (12/77 = 100)	134.2	138.4	138.9	138.7	138.9	140.0	139.2	134.0	138.6	139.1	138.9	139.1	140.2	139.5
Other prepared foods	256.3	265.3	266.5	266.6	267.5	267.8	268.0	257.9	266.9	268.1	268.3	269.3	269.5	269.8
Canned and packaged soup (12/77 = 100)	133.2	135.9	135.6	135.7	135.7	136.3	136.9	134.5	137.9	137.8	137.8	137.7	138.3	138.9
Frozen prepared foods (12/77 = 100)	143.7	146.2	147.0	147.2	147.8	147.3	146.7	142.3	145.6	146.5	146.7	147.3	146.8	146.0
Snacks (12/77 = 100)	147.5	153.4	153.4	152.9	153.5	153.2	152.7	150.0	155.2	155.4	155.0	155.6	155.2	154.8
Seasonings, olives, pickles, and relish (12/77 = 100)	142.0	151.3	153.2	153.6	152.8	153.3	152.7	141.4	150.3	152.2	152.7	151.9	152.4	152.1
Other condiments (12/77 = 100)	142.3	146.9	148.2	148.7	150.2	150.6	151.4	144.4	148.4	149.9	150.4	151.9	152.4	153.2
Miscellaneous prepared foods (12/77 = 100)	140.7	147.0	147.7	147.6	148.5	148.3	149.3	141.0	147.1	147.9	147.7	148.7	148.5	149.5
Other canned and packaged prepared foods (12/77 = 100)	139.0	143.0	143.2	143.3	143.5	144.5	144.6	139.8	144.5	144.5	144.6	144.9	145.8	145.9
Food away from home	292.4	301.2	302.4	303.6	304.8	305.9	307.6	295.2	304.2	305.4	306.7	307.8	309.0	310.7
Lunch (12/77 = 100)	142.6	146.6	147.0	147.5	148.2	148.9	149.6	143.6	148.2	148.6	149.1	149.8	150.5	151.2
Dinner (12/77 = 100)	141.3	145.2	145.7	146.3	147.1	147.4	148.1	143.0	146.8	147.3	147.9	148.8	149.1	149.8
Other meals and snacks (12/77 = 100)	141.6	146.9	147.9	148.6	148.5	149.2	150.5	142.7	147.6	148.7	149.3	149.2	149.9	151.1
Alcoholic beverages	200.5	205.6	206.6	207.4	208.0	208.4	209.2	202.8	207.6	208.8	209.5	210.1	210.4	211.3
Alcoholic beverages at home (12/77 = 100)	130.1	133.3	134.0	134.6	135.0	135.0	135.5	131.9	134.6	135.4	136.0	136.2	136.3	136.9
Beer and ale	201.8	207.4	209.2	210.5	210.3	210.6	211.4	202.4	206.5	208.3	209.6	209.4	209.6	210.5
Whiskey	143.7	146.8	147.0	147.2	148.2	148.3	148.9	144.7	147.7	147.8	148.0	149.0	149.1	149.8
Wine	227.5	234.2	235.3	236.4	236.9	235.3	236.5	236.9	241.6	243.3	244.4	244.9	242.7	245.0
Other alcoholic beverages (12/77 = 100)	116.3	117.8	118.1	118.2	119.0	119.7	119.6	115.9	117.8	118.0	118.0	118.9	119.6	119.6
Alcoholic beverages away from home (12/77 = 100)	134.1	137.6	138.2	138.4	139.1	140.3	140.8	134.0	139.1	139.7	139.9	140.6	141.6	142.1
HOUSING	297.0	307.3	306.7	309.4	313.8	317.5	319.2	297.0	306.7	306.2	309.2	313.7	317.5	319.3
Shelter	318.5	329.5	327.6	331.4	336.7	340.9	342.8	320.2	330.3	328.5	332.8	338.3	342.6	344.6
Rent, residential	207.8	218.6	219.6	220.1	221.8	222.6	224.8	207.4	218.1	219.1	219.6	221.3	222.1	224.3
Other rental costs	293.6	316.9	320.1	323.7	323.6	327.3	330.0	293.3	315.6	318.9	322.8	322.6	326.3	329.4
Lodging while out of town	318.3	335.9	340.9	346.6	346.6	352.2	356.5	316.3	333.0	337.9	343.9	344.0	349.4	354.2
Tenants' insurance (12/77 = 100)	133.3	143.5	144.1	144.9	144.4	145.5	145.6	133.7	143.6	144.3	144.7	143.8	144.8	144.8
Homeownership	358.0	368.7	365.7	370.6	377.4	382.8	384.5	361.2	370.8	367.9	373.6	380.5	386.0	388.0
Home purchase	271.4	270.4	269.2	272.3	279.3	285.6	287.7	271.2	268.3	267.1	270.5	278.1	284.4	286.8
Financing, taxes, and insurance	480.0	507.2	500.9	508.4	516.2	521.8	524.3	486.9	513.2	507.0	516.0	523.8	529.7	532.4
Property insurance	387.1	393.7	394.1	393.6	396.7	400.6	401.5	388.3	396.0	396.5	396.0	399.2	402.7	403.7
Property taxes	201.4	215.1	216.6	217.2	218.3	218.8	219.3	203.2	217.2	218.5	219.1	220.2	220.7	221.1
Contracted mortgage interest cost	630.1	668.1	655.5	667.1	678.5	686.7	690.4	632.8	666.6	656.4	670.2	681.4	690.0	694.0
Mortgage interest rates	229.4	243.9	240.7	242.1	240.2	238.3	237.3	230.3	245.4	242.3	244.4	242.1	240.2	239.2
Maintenance and repairs	319.3	328.2	327.2	331.6	334.5	336.1	334.7	316.2	324.6	323.7	328.3	330.9	332.4	331.5
Maintenance and repair services	349.0	359.4	357.8	363.6	367.0	369.1	366.9	350.5	360.1	358.6	365.0	368.0	370.0	368.1
Maintenance and repair commodities	249.3	254.6	255.0	256.2	257.8	258.3	258.7	242.4	248.2	248.6	249.7	251.3	252.1	252.9
Paint and wallpaper, supplies, tools, and equipment (12/77 = 100)	146.7	150.9	151.8	153.1	154.2	153.3	153.4	138.2	143.7	144.7	145.8	147.0	146.0	146.5
Lumber, awnings, glass, and masonry (12/77 = 100)	125.0	124.6	123.9	124.5	124.5	124.7	125.0	123.0	121.7	121.2	121.9	121.9	122.1	1225
Plumbing, electrical, heating, and cooling supplies (12/77 = 100)	132.7	133.8	133.4	133.4	135.1	136.2	137.1	130.1	133.4	133.1	133.1	134.9	136.0	136.6
Miscellaneous supplies and equipment (12/77 = 100)	129.2	134.8	135.1	135.6	136.3	138.4	138.3	132.5	136.9	137.1	137.4	138.2	140.6	140.5
Fuel and other utilities	325.1	337.1	339.3	339.2	345.4	352.2	354.7	326.4	337.9	340.2	340.3	346.5	353.6	356.2
Fuels	417.2	427.6	430.5	428.2	438.0	448.4	452.0	417.0	426.8	429.9	427.8	437.4	448.3	451.9
Fuel oil, coal, and bottled gas	677.9	683.1	664.0	641.3	644.6	656.6	659.9	681.1	686.0	666.7	644.0	647.7	659.7	662.9
Fuel oil	711.0	713.8	682.3	666.2	670.6	684.8	688.6	713.8	716.3	694.4	668.4	673.3	687.5	691.1
Other fuels (6/78 = 100)	164.0	170.0	168.0	166.4	165.7	165.6	166.0	165.4	171.4	169.5	167.9	167.1	166.9	167.4
Gas (piped) and electricity	357.6	368.7	375.9	377.8	[r]389.0	[r]398.9	402.1	356.7	367.3	374.8	376.8	[r]387.8	[r]398.2	401.5
Electricity	303.2	306.8	313.3	312.8	314.9	327.5	330.5	306.2	305.5	312.3	311.8	314.4	327.7	330.8
Utility (piped) gas	418.6	450.8	458.6	465.3	[r]494.6	[r]497.2	500.2	415.8	448.7	456.6	463.6	[r]490.8	[r]493.8	496.9

18. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1982							1981	1982					
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
HOUSING — Continued														
Fuel and other utilities — Continued														
Other utilities and public services	180.8	183.9	195.0	197.7	198.9	200.4	201.4	181.3	184.3	195.4	198.2	199.5	201.1	202.1
Telephone services	147.2	157.9	158.5	160.8	161.6	163.2	163.8	147.5	158.0	158.6	161.0	161.9	163.5	164.2
Local charges (12/77 = 100)	116.7	125.3	125.6	127.9	128.9	131.2	131.9	116.9	125.4	125.7	128.1	129.2	131.6	132.3
Interstate toll calls (12/77 = 100)	109.1	116.6	117.7	119.9	120.0	119.6	119.7	109.6	116.7	117.8	120.2	120.4	120.1	120.1
Intrastate toll calls (12/77 = 100)	101.5	109.1	109.0	108.9	109.3	109.8	110.0	101.3	108.8	108.7	108.7	109.0	109.4	109.6
Water and sewerage maintenance	294.0	313.3	316.9	320.7	323.5	324.9	327.7	295.8	315.7	˙319.7	323.6	326.7	328.0	330.8
Household furnishings and operations	222.4	230.2	231.6	232.6	233.4	233.7	234.1	219.1	226.7	228.0	229.1	230.0	230.4	230.9
Housefurnishings	186.0	191.4	192.7	193.8	194.7	194.7	194.7	184.1	189.3	190.4	191.7	192.5	192.6	192.7
Textile housefurnishings	202.9	216.0	217.7	218.7	220.9	220.2	218.6	206.2	218.5	219.9	221.4	223.9	223.3	221.1
Household linens (12/77 = 100)	123.3	131.0	134.7	135.8	135.4	134.6	131.9	126.0	132.1	135.6	137.0	136.8	135.9	133.3
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	129.8	138.5	136.7	136.9	140.1	140.1	140.8	131.5	141.0	138.7	139.1	142.8	143.0	143.2
Furniture and bedding	208.0	209.4	212.1	214.7	215.1	214.4	214.2	202.3	205.5	208.2	211.0	211.3	210.9	210.5
Bedroom furniture (12/77 = 100)	135.0	140.5	140.8	142.3	144.5	143.0	144.8	130.7	137.1	137.2	138.9	140.7	139.7	141.2
Sofas (12/77 = 100)	117.6	116.4	118.0	119.3	119.1	117.5	117.7	116.2	116.5	118.2	119.6	119.4	118.2	118.1
Living room chairs and tables (12/77 = 100)	117.9	118.6	121.6	123.2	122.8	123.2	121.9	119.5	118.8	121.8	123.3	122.9	123.3	122.0
Other furniture (12/77 = 100)	136.2	138.1	140.5	142.3	141.6	142.3	140.9	132.9	133.4	135.8	137.9	137.0	137.7	136.3
Appliances including TV and sound equipment	147.1	149.9	150.1	150.6	151.4	151.4	151.6	146.3	149.6	149.7	150.3	151.1	151.2	151.5
Television and sound equipment (12/77 = 100)	108.8	109.2	109.1	108.7	108.8	108.6	108.7	107.7	108.4	108.2	107.7	107.9	107.7	107.8
Television	105.6	104.5	104.7	104.2	104.3	104.4	104.0	104.5	103.3	103.5	103.0	103.0	103.1	102.7
Sound equipment (12/77 = 100)	112.7	114.5	114.0	113.7	113.9	113.5	114.0	111.4	113.8	113.2	112.8	113.0	112.7	113.2
Household appliances	174.2	179.7	180.3	182.1	183.6	183.8	184.2	173.6	179.9	180.4	182.3	183.8	184.2	184.8
Refrigerators and home freezers	174.2	182.6	183.7	184.8	186.2	187.7	187.4	178.1	187.9	189.3	190.6	191.8	193.2	192.9
Laundry equipment (12/77 = 100)	128.1	133.5	133.3	136.4	136.6	136.7	137.3	128.3	133.8	133.5	136.6	136.8	136.9	137.5
Other household appliances (12/77 = 100)	119.6	121.6	122.2	122.9	124.3	123.9	124.4	117.1	119.7	120.0	120.7	122.3	122.3	123.0
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	119.2	121.0	121.9	122.3	123.7	123.1	123.3	117.1	118.9	119.3	119.7	121.4	121.6	122.2
Office machines, small electric appliances, and air conditioners (12/77 = 100)	120.1	122.4	122.5	123.5	124.9	124.8	125.6	117.1	120.5	120.7	121.8	123.3	123.0	123.9
Other household equipment (12/77 = 100)	131.2	136.7	137.3	137.8	138.3	139.0	139.6	129.8	134.7	135.3	135.6	136.0	136.9	137.5
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	132.4	139.1	140.9	140.3	141.4	142.3	142.7	127.1	131.0	133.3	132.9	133.9	134.9	135.4
Clocks, lamps, and decor items (12/77 = 100)	125.0	129.8	129.0	130.2	131.4	132.2	132.3	122.9	126.0	125.4	126.5	127.4	128.2	128.3
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	139.5	143.3	143.1	145.0	144.4	145.6	145.9	136.4	139.5	139.0	140.6	139.8	141.4	141.9
Lawn equipment, power tools, and other hardware (12/77 = 100)	122.7	130.3	132.1	130.8	132.1	131.9	133.2	126.7	135.5	137.3	136.0	137.4	137.1	138.5
Housekeeping supplies	271.5	282.4	284.2	284.9	285.5	286.5	288.4	267.9	278.8	280.4	281.2	281.8	283.1	285.0
Soaps and detergents	268.5	278.0	279.5	280.0	278.8	280.8	281.4	263.1	274.4	275.7	276.3	275.2	277.0	277.6
Other laundry and cleaning products (12/77 = 100)	134.8	141.0	142.1	142.7	143.3	143.8	145.3	133.6	139.8	140.9	141.6	142.3	142.7	144.2
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	138.8	145.7	145.7	146.4	146.0	146.5	147.7	139.0	145.6	145.4	146.2	145.6	146.1	147.4
Stationery, stationery supplies, and gift wrap (12/77 = 100)	126.6	130.4	130.7	131.4	132.0	132.5	134.3	127.9	133.4	133.8	134.6	135.3	136.0	137.8
Miscellaneous household products (12/77 = 100)	140.5	146.9	147.5	147.5	149.3	150.2	150.3	136.6	141.8	142.4	142.4	144.1	144.9	145.1
Lawn and garden supplies (12/77 = 100)	138.8	141.8	144.7	144.7	144.8	144.0	145.3	131.7	134.1	136.7	136.8	136.6	136.7	138.1
Housekeeping services	295.3	308.1	309.9	310.4	311.3	311.7	312.5	293.4	306.8	308.2	309.2	310.2	310.9	311.6
Postage	308.0	337.5	337.5	337.5	337.5	337.5	337.5	308.1	337.5	337.5	337.5	337.5	337.5	337.5
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	143.1	146.4	150.8	152.1	153.1	154.2	155.3	142.8	149.1	150.6	152.2	153.3	154.5	155.4
Appliance and furniture repair (12/77 = 100)	127.8	134.2	135.0	135.6	136.6	137.0	137.5	126.4	132.8	133.5	134.1	135.1	135.5	136.0
APPAREL AND UPKEEP	184.7	188.0	191.1	191.9	191.5	190.8	189.7	185.5	187.3	190.5	191.2	190.6	189.6	188.7
Apparel commodities	175.1	177.6	180.8	181.4	180.9	180.0	178.6	176.6	177.4	180.8	181.3	180.5	179.4	178.2
Apparel commodities less footwear	171.2	173.4	176.8	177.4	176.7	175.6	174.0	172.8	173.0	176.6	177.1	176.0	174.7	173.4
Men's and boys'	175.6	179.3	181.7	183.1	183.8	183.1	182.4	176.9	179.4	181.6	182.9	183.7	183.2	182.6
Men's (12/77 = 100)	110.3	113.0	114.5	115.5	115.0	115.4	114.9	111.6	113.5	114.7	115.7	116.2	115.8	115.4
Suits, sport coats, and jackets (12/77 = 100)	102.5	104.8	107.2	107.6	108.1	107.3	105.5	97.4	98.2	100.4	101.1	101.4	100.6	99.2
Coats and jackets (12/77 = 100)	96.7	95.8	98.1	99.1	99.9	99.5	98.2	100.8	97.2	99.7	100.7	101.5	101.1	99.8
Furnishings and special clothing (12/77 = 100)	129.6	134.7	136.8	138.2	138.7	138.0	138.7	124.8	131.1	133.1	134.5	135.3	134.7	136.3
Shirts (12/77 = 100)	115.5	119.3	119.9	121.3	121.2	121.5	121.6	118.8	121.8	122.3	123.4	123.1	123.8	123.6
Dungarees, jeans, and trousers (12/77 = 100)	108.5	108.6	108.6	109.7	110.3	109.7	109.5	113.2	114.1	114.2	115.1	115.6	115.2	115.0
Boys' (12/77 = 100)	115.1	116.0	117.8	118.3	118.8	118.5	118.6	113.6	114.3	116.1	116.5	117.1	116.9	116.9
Coats, jackets, sweaters, and shirts (12/77 = 100)	107.0	105.9	109.4	111.2	111.5	110.7	109.0	107.6	106.3	109.7	111.5	112.0	111.5	109.7
Furnishings (12/77 = 100)	124.5	128.2	128.7	130.3	131.2	131.9	132.1	120.6	124.2	124.7	126.0	127.2	128.0	128.2
Suits, trousers, sport coats, and jackets (12/77 = 100)	117.7	119.1	120.1	119.0	119.6	119.4	120.7	115.6	116.7	117.8	116.8	117.3	117.1	118.3
Women's and girls'	153.5	154.7	160.3	160.9	159.1	157.3	154.6	157.9	157.1	163.0	163.4	160.8	158.4	156.2
Women's (12/77 = 100)	101.2	102.9	106.8	107.1	105.7	104.4	102.1	104.5	104.8	109.0	109.1	107.1	105.4	103.5
Coats and jackets	153.9	156.4	162.0	163.4	158.3	156.4	154.9	159.0	163.1	173.1	172.9	165.7	162.9	161.8
Dresses	162.2	152.8	163.1	166.6	162.0	160.1	152.8	154.1	140.9	148.1	151.1	147.1	145.4	138.4
Separates and sportswear (12/77 = 100)	95.1	96.3	100.3	100.1	101.2	100.2	96.7	99.1	96.8	101.2	101.0	101.9	101.0	97.6
Underwear, nightwear, and hosiery (12/77 = 100)	120.0	126.2	127.1	127.4	128.1	127.9	127.7	120.1	126.0	126.9	127.3	127.9	127.6	127.4
Suits (12/77 = 100)	78.6	87.0	92.7	89.4	83.4	78.6	77.6	100.6	105.6	114.1	111.0	100.6	92.7	93.1
Girls' (12/77 = 100)	106.5	102.7	105.6	ᶜ106.7	106.3	105.8	106.3	106.9	103.1	106.0	106.9	106.2	105.2	105.4
Coats, jackets, dresses, and suits (12/77 = 100)	100.0	92.6	98.2	98.8	96.9	95.1	98.8	98.9	91.5	97.2	97.6	95.0	92.4	96.0
Separates and sportswear (12/77 = 100)	106.1	103.4	104.6	105.4	105.9	106.0	103.6	108.9	106.0	106.9	107.6	108.0	107.7	104.1
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	117.6	118.0	119.6	122.0	122.4	122.9	123.8	116.3	117.0	118.7	121.0	121.5	121.9	122.7

18. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
APPAREL AND UPKEEP—Continued														
Apparel commodities—Continued														
Apparel commodities less footwear—Continued														
Infants' and toddlers'	259.8	262.2	264.7	267.0	269.0	268.7	268.8	272.9	271.4	275.4	278.2	279.3	278.2	277.8
Other apparel commodities	212.4	214.3	212.7	210.8	209.7	209.9	209.7	204.8	202.8	201.6	199.5	199.8	198.9	198.7
Sewing materials and notions (12/77 = 100)	115.3	117.6	118.1	118.5	119.3	119.2	120.0	113.6	115.9	116.5	116.9	117.7	117.6	118.5
Jewelry and luggage (12/77 = 100)	146.6	147.4	145.7	143.8	142.5	142.8	142.2	141.0	138.1	136.7	134.5	133.5	133.6	133.1
Footwear	199.0	202.8	204.9	205.6	206.5	206.6	206.4	199.2	203.3	205.2	206.1	206.0	206.7	206.7
Men's (12/77 = 100)	128.0	130.7	132.5	132.3	132.4	132.1	132.3	129.5	132.6	134.5	134.4	134.5	134.1	134.3
Boys' and girls' (12/77 = 100)	130.1	129.5	129.2	130.4	131.5	132.1	131.7	128.7	132.3	132.1	133.6	134.6	134.8	134.4
Women's (12/77 = 100)	118.7	122.7	124.7	125.1	125.8	125.8	125.6	117.8	119.0	120.8	121.1	121.6	121.6	121.5
Apparel services	258.9	269.4	271.3	273.4	274.7	275.3	276.6	256.3	267.2	269.0	271.0	272.3	273.0	274.3
Laundry and drycleaning other than coin operated (12/77 = 100)	153.8	161.4	162.4	163.5	164.4	164.8	165.4	153.1	159.9	160.9	162.0	162.8	163.3	163.8
Other apparel services (12/77 = 100)	136.7	139.8	141.1	142.5	142.9	143.1	144.1	135.1	140.3	141.5	142.7	143.1	143.4	144.6
TRANSPORTATION	282.6	288.0	285.1	282.9	285.6	292.8	296.1	283.9	289.6	286.6	284.3	287.1	294.5	297.9
Private	279.6	284.5	281.3	278.8	281.5	288.9	292.3	281.6	286.9	283.7	281.2	284.0	291.6	295.1
New cars	192.5	195.5	194.4	196.0	197.5	198.1	198.6	192.9	195.3	194.2	195.9	197.3	197.9	198.5
Used cars	260.3	279.7	280.9	285.1	291.4	298.2	302.4	260.3	279.7	280.9	285.2	291.4	298.2	302.4
Gasoline	412.9	399.1	383.9	366.7	370.4	392.3	400.3	414.0	400.6	385.4	c367.9	371.7	393.8	401.6
Automobile maintenance and repair	293.5	307.7	310.2	311.9	313.6	316.0	318.0	293.4	308.4	311.1	312.8	314.4	316.8	318.7
Body work (12/77 = 100)	144.1	153.7	154.5	155.0	155.7	156.3	157.5	143.3	152.1	152.7	153.3	154.0	154.7	156.0
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	139.9	146.5	148.7	149.5	150.8	151.6	151.9	141.4	150.2	152.8	153.7	154.9	155.7	156.1
Maintenance and servicing (12/77 = 100)	137.4	142.7	143.9	144.5	145.0	146.8	147.9	137.3	142.3	143.4	144.0	144.4	146.2	147.3
Power plant repair (12/77 = 100)	139.9	147.3	148.0	149.1	150.1	150.8	151.7	139.1	146.8	147.5	148.6	149.6	150.3	151.2
Other private transportation	242.9	253.4	254.5	255.1	255.7	258.7	260.8	246.0	256.8	257.8	258.2	258.8	261.8	264.0
Other private transportation commodities	208.8	214.8	215.6	214.9	216.9	217.5	216.3	210.8	217.3	218.2	c217.3	219.4	220.0	218.8
Motor oil, coolant, and other products (12/77 = 100)	144.8	149.3	150.2	150.7	149.9	150.7	151.5	143.4	147.8	148.7	149.2	148.4	149.0	150.3
Automobile parts and equipment (12/77 = 100)	133.6	137.4	137.9	137.2	138.8	139.2	138.2	135.2	139.4	138.9	139.2	140.9	141.2	140.1
Tires	185.6	191.3	191.7	190.1	192.3	192.8	151.8	188.4	195.1	195.5	193.7	196.0	196.4	195.5
Other parts and equipment (12/77 = 100)	131.7	134.6	135.7	136.2	138.0	138.3	136.6	132.2	134.9	135.9	136.6	138.4	138.6	136.8
Other private transportation services	254.3	266.1	267.2	268.2	269.4	272.2	275.1	257.7	269.8	270.8	271.6	271.8	275.5	278.5
Automobile insurance	259.8	268.1	269.8	270.4	271.6	274.0	275.4	259.6	268.0	269.6	270.2	271.3	273.5	274.9
Automobile finance charges (12/77 = 100)	180.9	188.9	188.9	187.2	186.3	192.3	193.6	179.9	188.3	188.2	186.7	185.9	191.2	192.6
Automobile rental, registration, and other fees (12/77 = 100)	118.0	128.9	129.7	133.3	133.3	133.3	137.4	118.4	129.5	130.1	133.7	133.7	133.8	138.4
State registration	147.9	167.1	168.5	174.2	174.2	174.3	183.6	147.9	166.5	167.8	173.8	173.8	173.9	183.2
Drivers' licenses (12/77 = 100)	105.9	121.7	122.9	123.0	127.7	127.7	132.8	105.6	121.7	123.0	123.0	127.9	127.9	133.1
Vehicle inspection (12/77 = 100)	128.6	129.3	129.3	129.0	126.7	126.7	128.5	129.3	130.6	130.6	130.4	128.3	128.3	129.9
Other vehicle-related fees (12/77 = 100)	136.6	144.8	145.3	149.5	149.2	149.3	151.0	143.1	152.4	152.5	156.4	156.2	156.3	158.7
Public	323.1	336.8	336.7	339.3	342.1	345.6	347.2	317.7	331.0	331.0	333.3	335.1	337.9	339.8
Airline fare	367.3	379.3	379.0	382.7	388.9	396.0	397.4	365.6	376.3	376.3	379.8	385.2	392.4	393.2
Intercity bus fare	343.5	365.7	365.6	367.0	366.0	363.7	368.3	343.6	367.4	367.0	368.7	367.5	365.4	370.6
Intracity mass transit	290.7	306.7	306.6	308.1	308.3	309.2	311.0	291.0	305.8	305.7	307.2	307.1	307.9	310.3
Taxi fare	287.1	296.7	297.2	297.6	297.6	298.0	299.3	295.7	306.1	306.6	307.3	307.2	307.6	308.7
Intercity train fare	304.6	314.0	314.1	332.1	337.9	338.2	338.4	304.9	314.5	314.5	332.1	337.9	338.2	338.4
MEDICAL CARE	295.6	316.2	318.8	321.7	323.8	326.4	330.0	295.4	314.9	317.4	320.2	322.3	324.8	328.1
Medical care commodities	187.7	197.7	200.0	202.4	204.1	205.6	206.5	189.2	198.3	200.6	203.0	204.8	206.3	207.1
Prescription drugs	173.7	183.7	186.1	188.8	190.4	191.8	193.4	175.0	184.7	187.0	189.7	191.4	192.7	194.4
Anti-infective drugs (12/77 = 100)	133.9	138.4	139.3	140.9	142.5	143.3	144.2	135.8	140.4	141.1	142.5	144.1	145.1	146.0
Tranquilizers and sedatives (12/77 = 100)	138.4	146.8	148.6	152.0	153.8	154.9	156.1	137.6	146.5	148.3	151.8	153.8	154.7	155.8
Circulatories and diuretics (12/77 = 100)	126.5	134.0	135.7	136.7	137.0	138.4	139.3	127.9	134.0	135.6	136.6	136.8	138.2	139.1
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	158.1	168.4	170.8	173.3	175.4	177.2	179.6	158.2	169.7	172.0	174.6	176.9	178.6	181.1
Pain and symptom control drugs (12/77 = 100)	139.1	148.8	150.8	153.1	153.7	154.6	155.4	141.8	150.3	152.3	154.6	155.2	156.0	157.1
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	131.8	139.9	142.7	144.7	145.9	146.3	147.9	132.5	139.9	142.7	144.8	146.0	146.4	148.1
Nonprescription drugs and medical supplies (12/77 = 100)	134.5	141.1	142.5	143.9	145.1	146.3	146.4	135.8	141.6	143.2	144.6	145.9	147.1	147.1
Eyeglasses (12/77 = 100)	125.8	128.9	129.5	130.1	130.9	131.6	131.6	125.0	127.6	128.1	128.7	129.7	130.4	130.4
Internal and respiratory over-the-counter drugs	213.1	225.1	228.1	231.1	233.4	235.2	234.9	215.4	226.4	229.6	232.5	235.0	236.8	236.2
Nonprescription medical equipment and supplies (12/77 = 100)	129.9	137.1	138.1	138.9	139.5	141.1	142.2	132.2	137.7	138.8	139.7	140.4	142.0	143.2
Medical care services	319.2	342.4	345.1	348.0	350.2	353.0	357.3	318.5	340.6	343.0	345.8	348.0	350.7	354.7
Professional services	280.4	294.2	295.8	297.8	299.2	301.2	302.8	280.8	294.3	295.9	c297.9	299.3	301.3	302.9
Physicians' services	300.7	318.8	320.3	322.2	324.0	326.4	328.7	304.7	321.7	323.2	325.2	327.0	329.4	331.6
Dental services	266.5	276.8	278.6	281.1	282.1	283.9	284.8	264.6	274.9	276.6	279.2	280.3	282.1	282.9
Other professional services (12/77 = 100)	136.8	141.5	142.4	142.5	143.4	143.8	144.6	132.7	138.5	139.4	139.4	140.2	140.7	141.5
Other medical care services	386.1	400.8	404.7	408.7	411.9	415.7	423.2	384.6	398.0	401.6	405.4	408.5	412.1	419.4
Hospital and other medical services (12/77 = 100)	151.7	167.1	168.5	169.8	170.6	171.6	174.7	150.3	165.7	166.9	168.3	169.1	170.0	172.9
Hospital room	478.0	533.8	538.5	542.2	543.8	546.8	557.8	472.2	527.0	531.0	535.2	536.7	539.4	549.7
Other hospital and medical care services (12/77 = 100)	150.4	163.8	165.2	166.4	167.6	168.5	171.2	149.4	163.0	164.2	165.5	166.6	167.5	170.0

18. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	July	Feb.	Mar.	Apr.	May.	June	July	July	Feb.	Mar.	Apr.	May	June	July
ENTERTAINMENT	221.1	231.2	232.8	233.9	234.4	235.6	236.6	218.7	228.1	229.5	230.5	231.1	232.3	233.5
Entertainment commodities	225.5	234.3	236.6	238.0	238.8	239.6	241.1	221.1	228.9	230.8	232.0	232.8	233.8	235.5
Reading materials (12/77 = 100)	136.0	144.1	146.1	146.8	148.5	149.4	150.4	135.9	143.3	145.3	146.1	147.7	148.6	149.7
Newspapers	265.0	273.1	276.4	280.1	281.6	283.9	285.9	265.0	272.8	276.0	279.7	281.2	283.4	285.6
Magazines, periodicals, and books (12/77 = 100)	137.3	149.9	152.4	151.6	154.4	155.0	156.1	137.4	149.7	152.2	151.4	154.2	154.8	156.0
Sporting goods and equipment (12/77 = 100)	127.0	131.5	132.3	132.9	132.8	132.7	132.8	120.6	123.9	124.3	124.7	124.9	125.3	125.7
Sport vehicles (12/77 = 100)	129.9	133.9	135.4	136.1	135.4	135.7	135.4	118.5	121.9	122.5	122.8	122.6	123.9	124.1
Indoor and warm weather sport equipment (12/77 = 100)	117.7	119.6	119.9	120.4	121.0	119.6	120.3	117.0	117.7	118.1	118.6	119.2	117.1	118.0
Bicycles	191.0	197.3	197.6	198.9	199.4	197.6	198.3	192.1	198.9	198.9	200.2	200.7	198.8	199.4
Other sporting goods and equipment (12/77 = 100)	122.7	127.0	125.6	126.3	127.6	127.9	129.4	122.9	127.4	126.0	126.5	127.9	128.3	129.8
Toys, hobbies, and other entertainment (12/77 = 100)	129.3	133.2	134.5	135.4	135.5	136.1	137.3	128.5	132.3	133.5	134.3	134.4	134.9	136.1
Toys, hobbies, and music equipment (12/77 = 100)	127.9	131.7	133.4	134.1	134.8	135.9	137.2	125.3	128.6	130.2	130.7	131.4	132.4	133.7
Photographic supplies and equipment (12/77 = 100)	125.7	128.9	128.3	129.8	130.0	130.3	130.8	127.0	127.9	129.5	131.0	131.2	131.5	131.9
Pet supplies and expenses (12/77 = 100)	134.5	140.6	140.8	141.9	141.0	140.6	142.0	135.1	141.6	141.7	142.7	141.8	141.5	143.0
Entertainment services	215.2	227.1	227.8	228.5	228.7	230.5	230.8	215.8	227.8	228.4	229.2	229.2	230.9	231.3
Fees for participant sports (12/77 = 100)	131.6	140.9	141.9	142.0	141.6	142.5	141.8	131.6	142.5	143.5	143.7	142.9	143.8	143.0
Admissions (12/77 = 100)	125.9	131.6	131.2	132.2	133.0	133.5	135.5	125.7	130.6	130.3	131.2	132.1	132.6	134.6
Other entertainment services (12/77 = 100)	121.7	125.0	125.1	125.2	125.7	127.9	127.8	123.2	125.9	125.9	125.9	126.4	128.7	128.8
OTHER GOODS AND SERVICES	234.4	250.3	252.2	253.8	255.0	255.8	257.2	232.4	247.1	249.3	250.9	252.4	253.1	254.5
Tobacco products	219.3	230.7	234.1	236.1	237.4	237.8	239.2	218.4	229.8	233.2	234.0	236.6	237.0	238.3
Cigarettes	221.6	233.6	237.3	238.0	240.4	240.7	242.2	220.7	232.7	236.3	236.9	239.6	239.9	241.3
Other tobacco products and smoking accessories (12/77 = 100)	132.5	136.8	138.1	139.9	141.0	141.8	142.1	133.4	136.9	138.2	140.1	141.1	142.0	142.2
Personal care	233.4	242.3	243.7	245.9	246.5	247.8	249.4	231.2	240.4	241.8	244.1	244.7	246.0	247.5
Toilet goods and personal care appliances	228.7	238.5	240.6	243.8	244.5	246.3	247.7	228.4	239.2	241.5	244.7	245.4	247.0	248.6
Products for the hair, hairpieces, and wigs (12/77 = 100)	133.9	138.4	140.8	142.9	142.1	143.2	145.0	131.7	137.8	140.0	142.3	141.7	142.6	144.2
Dental and shaving products (12/77 = 100)	139.0	145.6	148.0	149.0	150.1	150.5	150.9	137.1	144.2	146.6	147.6	148.6	148.9	149.5
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	127.7	136.0	135.1	136.5	137.6	139.6	139.9	128.3	135.8	136.1	137.5	138.5	140.1	140.5
Other toilet goods and small personal care appliances (12/77 = 100)	133.0	137.0	137.4	140.3	140.5	140.8	141.8	135.9	140.2	140.7	143.5	144.0	144.4	145.4
Personal care services	238.4	246.5	247.3	248.7	249.2	250.1	251.8	234.4	241.8	242.6	244.0	244.4	245.4	246.9
Beauty parlor services for women	240.5	247.7	248.9	250.7	251.3	252.3	254.4	235.1	241.3	242.5	244.3	245.0	245.9	247.9
Haircuts and other barber shop services for men (12/77 = 100)	132.7	138.4	138.4	138.8	138.9	139.4	139.8	131.8	137.2	137.2	137.6	137.7	138.2	138.5
Personal and educational expenses	259.2	289.2	290.4	291.9	292.8	293.3	294.5	260.1	290.2	291.7	293.5	294.6	295.2	296.4
Schoolbooks and supplies	231.3	262.9	263.3	263.8	264.2	264.6	264.8	235.2	267.1	267.5	268.0	268.4	268.8	269.0
Personal and educational services	265.8	295.8	297.1	298.7	299.8	300.3	301.7	266.4	296.3	298.0	300.0	301.4	302.0	303.4
Tuition and other school fees	133.5	150.6	151.1	151.4	151.4	151.5	152.0	133.7	150.9	151.7	152.0	152.0	152.1	152.5
College tuition (12/77 = 100)	133.0	150.1	150.7	151.0	151.0	151.2	151.8	132.9	149.8	150.9	151.3	151.3	151.4	152.0
Elementary and high school tuition (12/77 = 100)	135.3	152.2	152.2	152.2	152.2	152.2	152.2	136.4	152.9	152.9	152.9	152.9	152.9	152.9
Personal expenses (12/77 = 100)	147.9	156.1	157.4	160.9	163.6	164.5	166.0	146.6	155.3	156.7	160.5	163.6	164.6	166.1
Special indexes:														
Gasoline, motor oil, coolant, and other products	407.1	393.9	379.3	362.6	366.1	387.3	395.0	408.0	395.3	380.6	363.7	367.2	388.6	396.2
Insurance and finance	402.7	424.8	420.9	426.3	431.5	436.5	439.1	402.4	423.5	419.9	425.9	430.9	436.0	438.8
Utilities and public transportation	286.5	299.1	302.7	305.1	[r]311.0	[r]316.6	318.7	285.6	297.7	301.5	304.0	[r]309.8	[r]315.6	317.8
Housekeeping and home maintenance services	332.3	344.0	344.0	347.5	349.8	351.2	350.3	332.8	344.2	344.0	348.2	350.4	351.8	351.0

[1] Not available.
r = revised.

c = corrected.

19. Consumer Price Index for All Urban Consumers: Cross classification of region and population size class by expenditure category and commodity and service group

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000-1.250 million)			Size class C (75,000-385,000)			Size class D (75,000 or less)		
	1982			1982			1982			1982		
	Feb.	Apr.	June	Feb.	Apr.	June	Feb.	Apr.	June	Feb.	Apr.	June
Northeast												
EXPENDITURE CATEGORY												
All items	144.2	143.6	147.7	150.7	150.0	156.5	158.1	158.6	163.5	151.4	151.9	156.9
Food and beverages	143.3	143.7	145.9	142.7	142.2	144.1	145.7	147.4	148.8	140.4	140.4	142.9
Housing	146.0	144.5	151.6	155.7	155.3	165.2	172.5	173.3	182.1	159.5	160.5	169.3
Apparel and upkeep	117.0	119.1	118.6	120.5	122.5	122.8	123.1	127.4	128.3	119.9	125.1	123.4
Transportation	156.5	153.7	157.2	164.2	160.0	164.6	161.6	158.6	162.2	161.7	158.1	161.2
Medical care	145.1	146.4	147.5	147.0	148.9	150.2	148.7	150.4	152.7	144.8	151.5	155.4
Entertainment	133.3	135.5	136.5	132.4	136.2	137.5	136.1	135.8	136.4	137.6	139.0	141.1
Other goods and services	136.9	139.0	139.8	140.6	141.1	142.1	142.9	145.3	146.7	140.6	142.9	144.0
COMMODITY AND SERVICE GROUP												
Commodities	142.1	140.8	144.6	147.9	146.6	151.5	150.1	149.6	153.8	147.6	146.5	150.6
Commodities less food and beverages	141.4	139.0	143.8	150.5	148.7	155.1	152.2	150.6	156.2	151.0	149.4	154.3
Services	146.9	147.4	151.8	155.1	155.4	161.9	171.0	173.4	179.1	157.3	160.4	166.8
North Central region												
EXPENDITURE CATEGORY												
All items	153.6.	155.2	159.6	151.9	155.1	156.3	149.1	151.2	155.2	151.0	153.3	156.4
Food and beverages	141.6	141.9	144.1	140.8	141.7	142.8	143.1	143.1	145.0	144.7	146.2	148.7
Housing	164.9	168.8	175.1	159.9	167.2	163.3	152.7	157.2	162.1	155.5	160.7	164.0
Apparel and upkeep	112.7	114.8	114.0	121.1	122.7	123.0	121.8	125.8	124.7	118.5	123.5	120.5
Transportation	161.1	158.7	165.1	159.7	156.9	163.2	161.0	158.4	165.7	160.3	157.2	163.1
Medical care	148.4	150.9	153.0	150.8	152.8	155.2	150.3	153.8	155.6	154.5	157.0	158.3
Entertainment	137.1	137.0	137.1	126.4	130.3	129.5	136.1	138.1	139.2	132.5	130.9	131.5
Other goods and services	138.8	140.3	141.4	145.1	146.5	152.5	137.3	139.0	141.2	144.6	146.4	148.3
COMMODITY AND SERVICE GROUP												
Commodities	145.2	145.4	149.4	145.4	146.4	148.5	143.5	144.3	148.8	142.1	143.7	147.9
Commodities less food and beverages	146.9	147.0	151.9	147.3	148.3	150.9	143.6	144.8	150.5	141.0	142.6	147.6
Services	166.1	169.8	174.8	162.6	169.3	166.2	158.4	162.4	165.6	165.0	168.7	169.8
South												
EXPENDITURE CATEGORY												
All items	152.6	152.9	156.3	157.2	155.7	158.4	154.0	152.3	157.8	152.3	153.5	156.5
Food and beverages	144.2	145.0	146.7	144.8	144.9	146.9	144.1	144.0	146.0	146.1	145.9	147.7
Housing	160.2	161.1	165.2	168.3	165.2	167.2	162.7	159.1	167.0	158.8	161.5	164.6
Apparel and upkeep	122.6	125.6	124.9	121.1	124.3	123.6	117.0	120.2	118.6	105.7	111.1	109.4
Transportation	161.5	157.5	163.4	162.8	159.7	167.0	160.7	157.1	165.1	159.9	155.8	163.3
Medical care	145.9	149.5	152.8	150.5	152.3	154.5	155.4	160.1	162.5	162.5	165.1	166.6
Entertainment	129.3	130.1	132.0	140.0	141.2	143.1	140.4	141.1	142.7	140.4	145.7	145.2
Other goods and services	141.2	142.8	144.1	140.7	142.4	143.3	142.0	143.7	144.5	147.9	150.2	150.4
COMMODITY AND SERVICE GROUP												
Commodities	146.8	146.3	149.1	148.4	147.6	150.9	146.0	144.3	149.2	145.0	146.0	149.7
Commodities less food and beverages	148.0	146.9	150.1	149.9	148.8	152.6	146.8	144.5	150.6	144.6	146.0	150.5
Services	160.7	162.1	166.5	170.4	167.8	169.8	166.3	164.5	170.6	163.3	164.8	166.8
West												
EXPENDITURE CATEGORY												
All items	157.9	158.5	160.8	157.1	157.0	158.6	150.2	151.1	149.7	153.3	157.9	159.9
Food and beverages	143.9	144.5	146.4	147.9	147.6	148.9	143.4	143.5	145.1	148.1	148.5	149.9
Housing	167.2	168.1	170.1	164.9	164.8	165.6	154.4	156.3	150.3	153.9	163.5	165.5
Apparel and upkeep	121.7	120.6	120.0	126.4	126.6	125.2	118.8	119.7	122.3	131.9	140.4	140.5
Transportation	164.2	162.9	167.7	163.6	161.7	165.9	160.9	158.3	163.5	164.5	160.5	162.8
Medical care	157.8	160.7	164.4	153.7	156.0	159.5	154.8	157.3	158.6	157.9	162.4	166.2
Entertainment	135.1	137.7	138.5	135.5	136.8	139.4	130.4	133.9	134.2	147.8	148.9	150.6
Other goods and services	144.5	147.5	147.0	145.3	148.9	149.1	137.1	139.5	139.9	147.6	149.8	153.3
COMMODITY AND SERVICE GROUP												
Commodities	146.0	145.5	147.8	148.4	148.1	149.5	145.2	146.4	147.5	147.5	148.9	151.3
Commodities less food and beverages	146.9	145.9	148.4	148.6	148.3	149.7	145.9	147.5	148.5	147.3	149.1	152.0
Services	173.7	175.9	178.1	169.1	169.3	171.1	157.3	157.9	152.8	161.8	171.2	172.5

20. Consumer Price Index—U.S. city average, and selected areas

[1967 = 100 unless otherwise specified]

Area[1]	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
U.S. city average[2]	274.4	283.4	283.1	284.3	287.1	290.6	292.2	274.6	282.9	282.5	283.7	286.5	290.1	291.8
Anchorage, Alaska (10/67 = 100)	246.1	...	260.0	...	263.8	...	263.6	241.7	...	254.5	...	258.0	...	259.1
Atlanta, Ga.	...	279.8	...	280.2	...	291.1	...	...	282.7	...	282.9	...	282.9	...
Baltimore, Md.	272.5	...	281.8	...	283.6	...	286.1	273.7	...	282.2	...	283.7	...	287.0
Boston, Mass.	268.3	...	269.8	...	272.5	...	279.2	266.5	...	269.8	...	272.0	...	278.7
Buffalo, N.Y.	...	259.9	...	258.3	...	265.8	...	...	258.0	...	256.4	...	264.1	...
Chicago, Ill.-Northwestern Ind.	272.7	274.9	276.4	280.2	287.7	291.8	293.1	271.7	275.4	276.5	280.0	287.0	291.5	292.7
Cincinnati, Ohio-Ky.-Ind.	273.3	...	284.9	...	288.7	...	293.3	276.3	...	287.2	...	291.2	...	295.9
Cleveland, Ohio	...	285.9	...	296.5	...	297.8	...	...	285.0	...	295.7	...	297.0	...
Dallas-Ft. Worth, Tex.	...	293.6	...	297.2	...	304.8	...	...	289.8	...	292.7	...	300.5	...
Denver-Boulder, Colo.	294.2	...	309.2	...	313.4	...	319.9	299.9	...	315.0	...	319.5	...	326.3
Detroit, Mich.	283.1	277.8	278.2	283.7	285.9	289.1	292.4	278.9	274.8	275.1	280.3	282.7	286.0	289.3
Honolulu, Hawaii	...	282.2	...	283.8	...	289.5	...	...	283.2	...	284.7	...	289.5	...
Houston, Tex.	...	304.1	...	304.9	...	313.9	...	...	300.3	...	302.1	...	310.9	...
Kansas City, Mo.-Kansas	...	276.0	...	274.0	...	281.6	...	...	274.1	...	272.1	...	280.1	...
Los Angeles-Long Beach, Anaheim, Calif.	272.2	285.6	286.6	286.8	287.1	290.1	289.3	276.3	289.4	290.4	290.5	290.6	293.9	293.0
Miami, Fla. (11/77 = 100)	146.1	...	155.1	...	155.7	...	155.1	147.3	...	156.4	...	157.0	...	156.9
Milwaukee, Wis.	285.6	...	289.3	...	292.9	...	296.5	291.2	...	292.5	...	296.0	...	299.6
Minneapolis-St. Paul, Minn.-Wis.	...	306.0	...	301.7	...	304.1	...	...	305.3	...	301.2	...	303.8	...
New York, N.Y.-Northeastern N.J.	262.5	269.0	267.4	268.2	270.9	276.7	277.3	262.3	267.8	265.9	266.5	269.4	275.3	276.1
Northeast, Pa. (Scranton)	266.0	...	267.2	...	270.2	...	275.1	269.0	...	268.4	...	272.1	...	277.3
Philadelphia, Pa.-N.J.	267.8	275.5	274.7	275.1	275.1	279.7	281.1	268.5	275.1	274.3	274.5	274.7	279.1	280.9
Pittsburgh, Pa.	...	278.6	...	275.3	...	285.1	...	...	280.0	...	276.7	...	285.9	...
Portland, Oreg.-Wash.	280.8	...	286.7	...	282.1	...	292.5	279.2	...	283.9	...	279.7	...	290.6
St. Louis, Mo.-Ill.	269.4	...	280.7	...	285.7	...	290.2	269.2	...	279.3	...	284.5	...	289.2
San Diego, Calif.	305.4	...	319.0	...	329.2	...	334.8	300.5	...	313.9	...	323.3	...	329.4
San Francisco-Oakland, Calif.	...	295.8	...	298.8	...	304.6	...	...	294.9	...	297.8	...	303.4	...
Seattle-Everett, Wash.	282.3	...	293.4	...	301.2	...	296.6	277.8	...	289.6	...	297.1	...	292.9
Washington, D.C.-Md.-Va.	267.1	...	278.8	...	278.4	...	281.3	271.4	...	283.8	...	283.3	...	286.3

[1] The areas listed include not only the central city but the entire portion of the Standard Metropolitan Statistical Area, as defined for the 1970 Census of Population, except that the Standard Consolidated Area is used for New York and Chicago.

[2] Average of 85 cities.

21. Producer Price Indexes, by stage of processing

[1967=100]

Commodity grouping	Annual average 1981	1981					1982							
		Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.[1]	May	June	July	Aug.
FINISHED GOODS														
Finished goods	269.8	271.5	271.5	274.3	274.7	275.4	277.9	277.9	277.3	r277.3	277.7	279.9	281.7	282.4
Finished consumer goods	271.3	273.0	273.1	275.1	275.2	275.8	278.3	278.6	277.7	r277.3	277.6	280.0	282.0	282.7
Finished consumer foods	253.6	256.3	256.2	254.0	252.7	252.9	256.4	258.2	257.1	r260.0	262.3	263.4	260.7	259.8
Crude	263.8	256.9	253.5	253.6	260.0	273.9	280.6	282.5	283.3	r268.6	259.4	254.3	240.6	238.6
Processed	250.6	254.2	254.4	252.0	249.9	249.0	252.1	254.0	254.5	r257.3	260.4	262.0	260.4	259.6
Nondurable goods less foods	319.6	322.1	324.2	324.3	325.4	326.3	329.3	330.3	328.8	r325.7	324.1	328.1	334.7	336.7
Durable goods	218.6	218.3	215.8	224.5	224.7	225.4	226.2	224.0	223.9	r224.1	224.7	226.2	227.0	227.7
Consumer nondurable goods less food and energy	208.8	210.4	211.8	212.6	213.6	213.9	217.4	219.6	220.5	r222.3	222.9	222.9	223.3	224.0
Capital equipment	264.3	265.8	265.3	271.5	273.0	274.1	276.2	275.0	275.8	r277.2	278.3	279.6	280.9	281.4
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	306.0	310.1	309.7	309.4	309.0	309.4	311.0	311.1	310.6	r309.9	309.8	310.0	311.4	311.0
Materials and components for manufacturing	286.1	289.8	290.2	290.2	289.5	289.3	290.4	290.9	290.4	r290.6	291.5	290.0	289.6	289.1
Materials for food manufacturing	260.4	261.0	254.6	250.9	248.8	245.6	250.7	252.8	252.0	r254.4	260.0	260.9	260.0	258.3
Materials for nondurable manufacturing	285.8	291.0	291.2	290.9	289.4	288.8	289.0	289.3	288.8	r287.6	288.1	285.8	283.6	282.9
Materials for durable manufacturing	312.1	316.0	317.1	316.7	314.9	314.0	313.6	313.1	310.9	r311.0	310.6	307.3	308.2	307.2
Components for manufacturing	259.3	261.8	263.8	265.1	266.9	267.8	268.8	270.9	271.8	r272.6	273.8	273.9	274.2	274.6
Materials and components for construction	287.6	290.7	290.0	290.1	290.2	291.1	292.0	293.0	293.3	r294.0	293.4	294.2	294.0	293.3
Processed fuels and lubricants	585.4	607.8	601.4	596.9	595.1	598.1	604.4	596.8	593.0	r579.9	569.9	581.2	601.6	603.8
Manufacturing industries	498.6	508.3	500.5	497.5	496.4	499.0	505.9	497.8	496.1	r487.5	482.3	492.0	508.4	511.0
Nonmanufacturing industries	680.8	695.6	690.5	684.7	682.2	685.6	691.3	684.2	678.3	r661.1	646.7	659.3	683.4	685.2
Containers	276.1	280.3	280.6	280.9	280.6	280.2	282.5	285.5	286.3	r287.0	287.1	286.7	286.4	285.6
Supplies	263.8	266.1	266.1	266.6	267.2	268.3	269.8	270.4	270.6	r272.1	273.6	273.6	273.5	272.9
Manufacturing industries	253.1	256.0	256.8	258.2	259.2	261.0	262.6	263.3	264.5	r265.3	267.2	267.3	267.3	267.1
Nonmanufacturing industries	269.6	271.6	271.1	271.2	271.6	272.4	273.8	274.4	274.1	276.0	277.2	277.1	277.0	276.2
Feeds	230.4	229.1	221.3	215.9	212.0	214.6	214.8	212.0	208.1	r213.1	214.2	213.1	211.1	203.7
Other supplies	276.4	279.3	280.7	282.3	283.7	284.1	285.7	287.3	287.9	r288.9	290.2	290.4	290.7	291.3
CRUDE MATERIALS														
Crude materials for further processing	329.0	333.0	327.4	318.9	313.9	311.5	318.4	321.6	320.0	r322.6	328.1	325.7	323.4	320.5
Foodstuffs and feedstuffs	257.4	261.8	253.4	245.7	238.3	233.7	242.6	248.3	247.9	r254.4	262.3	259.8	255.5	250.7
Nonfood materials	482.3	485.3	486.0	479.2	476.3	478.6	481.5	479.3	475.2	r469.9	470.4	467.9	470.0	471.1
Nonfood materials except fuel	413.7	413.9	410.2	404.1	397.8	396.2	399.5	394.8	387.1	r378.8	376.6	370.0	369.1	369.6
Manufacturing industries	429.4	429.6	425.4	418.6	411.7	409.8	413.2	407.5	398.4	389.0	386.4	378.9	378.4	378.9
Construction	261.8	263.1	263.6	264.7	264.8	265.2	267.6	270.5	273.2	r273.3	274.0	273.7	270.4	270.7
Crude fuel	751.2	786.7	788.7	779.0	792.5	813.0	812.9	824.5	839.7	r851.2	866.1	885.2	903.1	906.9
Manufacturing industries	864.9	883.0	911.4	898.4	915.8	942.5	940.3	954.4	974.7	r989.1	1,008.2	1,033.6	1,056.0	1,060.9
Nonmanufacturing industries	674.0	687.8	704.8	697.8	708.2	724.0	725.6	735.4	746.6	r755.8	767.4	781.7	796.0	798.9
SPECIAL GROUPINGS														
Finished goods excluding foods	273.3	274.6	274.7	279.1	280.0	280.9	283.0	282.4	281.9	r281.1	280.9	283.4	286.7	287.9
Finished consumer goods excluding foods	276.5	277.7	277.9	281.6	282.4	283.2	285.2	284.9	284.0	r282.3	281.6	284.6	288.7	290.1
Finished consumer goods less energy	233.6	235.0	234.9	237.2	237.2	237.6	240.5	241.3	241.3	r243.0	244.1	244.9	244.5	244.7
Intermediate materials less foods and feeds	310.1	314.5	314.6	314.6	314.5	314.9	316.4	316.4	316.0	r315.1	314.6	314.8	316.4	316.3
Intermediate materials less energy	285.2	288.5	288.7	288.8	288.5	288.7	289.9	290.7	290.5	r291.0	291.7	290.9	290.6	290.0
Intermediate foods and feeds	250.3	250.2	243.5	239.3	235.2	235.2	238.8	239.4	237.7	r240.9	245.0	245.3	244.1	240.6
Crude materials less agricultural products	545.6	549.1	551.4	543.4	540.7	543.5	546.1	543.9	538.4	r531.6	531.7	529.4	531.8	532.2
Crude materials less energy	254.0	258.0	250.4	243.2	235.8	231.6	238.1	243.4	242.8	r247.3	252.5	248.6	245.0	241.5

[1] Data for April 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

22. Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981					1982							
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.[1]	May	June	July	Aug.
	All commodities	293.4	296.4	295.7	296.1	295.5	295.8	298.3	298.6	298.0	r298.0	298.6	299.4	300.6	300.4
	All commodities (1957-59 = 100)	311.3	314.5	313.7	314.2	313.5	313.8	316.5	316.8	316.2	r316.2	316.8	317.7	318.9	318.7
	Farm products and processed foods and feeds	251.5	254.2	250.3	246.0	242.5	241.0	246.0	248.4	247.5	r251.6	255.6	255.3	252.5	250.1
	Industrial commodities	304.1	307.2	307.4	309.0	309.3	310.0	311.8	311.6	311.0	309.9	309.5	310.7	313.0	313.4
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	254.9	257.9	251.1	243.1	237.4	234.6	242.2	247.1	244.7	250.6	258.1	252.7	246.5	242.0
01-1	Fresh and dried fruits and vegetables	267.3	258.1	252.8	248.8	254.0	280.5	289.2	290.1	257.3	r267.6	270.7	263.8	238.4	237.7
01-2	Grains	248.4	242.7	227.0	227.6	226.5	213.6	225.2	223.2	220.9	226.0	228.2	225.7	212.8	197.2
01-3	Livestock	246.0	262.0	257.3	244.5	231.1	225.0	236.8	251.2	255.6	267.6	282.9	277.5	270.3	268.4
01-4	Live poultry	201.2	210.3	196.7	185.7	175.0	171.4	186.8	197.3	197.7	186.2	192.7	207.2	212.5	189.3
01-5	Plant and animal fibers	242.0	232.5	206.5	211.7	196.5	189.4	190.2	193.5	199.5	207.4	214.1	203.1	220.8	207.5
01-6	Fluid milk	287.4	295.0	287.3	294.3	288.2	296.7	287.6	285.8	282.5	280.3	278.8	278.9	279.0	278.8
01-7	Eggs	187.1	180.7	193.2	193.8	209.7	195.5	187.0	200.6	204.0	192.1	164.3	158.3	171.7	171.7
01-8	Hay, hayseeds, and oilseeds	274.1	284.3	267.2	230.4	221.1	218.8	218.4	217.6	213.7	222.8	224.3	219.3	220.0	218.1
01-9	Other farm products	273.8	263.9	268.9	263.3	273.1	280.2	280.1	273.7	273.0	274.2	273.9	271.8	265.5	274.4
02	Processed foods and feeds	248.7	251.2	248.9	246.6	244.3	243.6	247.1	248.1	248.1	r251.1	254.4	255.8	254.8	253.6
02-1	Cereal and bakery products	255.5	257.7	258.5	256.9	256.5	255.1	256.6	253.3	253.3	r253.5	253.9	253.3	253.6	253.2
02-2	Meats, poultry, and fish	246.2	254.4	253.3	246.6	240.0	236.1	243.7	247.9	250.0	r258.2	267.1	271.1	266.1	262.3
02-3	Dairy products	245.6	245.3	245.5	246.8	246.9	247.2	247.7	248.0	248.0	248.4	248.5	248.7	248.8	249.0
02-4	Processed fruits and vegetables	261.2	267.3	270.0	271.7	270.5	271.8	273.2	276.3	275.9	r275.2	273.4	275.4	275.9	274.9
02-5	Sugar and confectionery	275.0	267.3	246.8	246.7	244.1	247.6	256.8	257.2	255.0	r256.0	265.8	269.5	276.1	286.0
02-6	Beverages and beverage materials	248.0	249.4	249.1	250.0	251.4	251.9	253.9	255.1	256.4	256.6	256.7	258.5	256.7	257.3
02-7	Fats and oils	227.4	229.5	224.3	223.4	221.5	219.1	216.6	216.8	213.7	r218.1	222.2	222.0	221.4	216.0
02-8	Miscellaneous processed foods	250.1	252.1	253.0	249.9	250.1	250.1	251.0	250.9	249.5	r249.6	248.0	248.6	248.0	245.9
02-9	Prepared animal feeds	230.2	228.9	222.9	218.1	214.7	217.2	217.4	214.9	211.4	r216.3	217.4	216.4	214.6	207.9
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	199.7	202.4	202.9	204.0	203.6	203.4	205.0	205.6	205.0	r205.4	205.1	204.5	204.1	203.9
03-1	Synthetic fibers (12/75 = 100)	156.3	161.2	161.0	162.7	161.6	161.5	162.9	163.2	161.3	r163.0	164.3	163.6	162.4	163.1
03-2	Processed yarns and threads (12/75 = 100)	138.0	142.0	142.3	144.4	140.3	139.6	139.2	140.7	140.5	140.4	141.0	139.4	139.2	135.9
03-3	Gray fabrics (12/75 = 100)	146.8	149.0	149.1	148.0	147.4	147.2	148.2	147.3	146.6	r146.3	145.5	145.6	144.8	144.5
03-4	Finished fabrics (12/75 = 100)	125.2	126.8	126.8	126.7	126.5	125.6	126.0	127.1	125.6	r125.4	125.4	124.0	123.8	124.4
03-81	Apparel	186.0	187.8	188.0	189.9	190.8	191.0	192.7	193.2	193.4	r194.1	192.7	193.0	193.1	193.5
03-82	Textile housefurnishings	226.7	228.8	232.2	233.0	233.4	233.6	237.6	240.8	241.4	r241.8	246.4	244.4	243.0	240.7
04	Hides, skins, leather, and related products	260.9	261.3	261.7	260.0	259.8	260.7	261.8	261.6	260.6	r263.4	263.4	262.7	261.3	263.2
04-2	Leather	319.8	313.7	313.2	313.7	311.3	312.3	319.0	317.7	313.3	r310.6	309.5	308.7	307.4	304.7
04-3	Footwear	240.9	242.5	242.9	239.6	239.8	240.1	238.9	238.6	239.8	r244.8	242.5	243.8	241.7	247.3
04-4	Other leather and related products	241.8	245.1	245.0	245.0	245.4	245.4	247.5	248.1	248.1	r248.1	253.2	250.5	252.0	249.9
05	Fuels and related products and power	694.5	704.3	703.5	698.1	698.1	702.5	705.1	697.8	689.7	r670.6	681.9	677.4	701.8	705.7
05-1	Coal	497.2	507.0	510.2	510.8	512.7	515.2	525.3	529.9	529.6	r532.6	534.4	534.1	538.6	539.1
05-2	Coke	456.4	469.7	469.7	469.7	469.7	469.7	469.7	469.7	467.5	r467.5	468.2	462.7	463.9	460.0
05-3	Gas fuels[2]	939.4	949.3	976.6	965.6	983.0	1,003.7	987.9	987.6	990.5	r992.7	1,003.4	1,029.7	1,055.4	1,073.7
05-4	Electric power	367.2	385.8	383.8	378.4	378.3	384.2	392.8	392.9	403.7	r406.3	405.5	406.6	416.9	415.3
05-61	Crude petroleum[3]	803.5	796.8	796.8	788.2	785.9	787.2	787.2	770.3	744.6	r717.9	718.2	718.5	718.7	718.7
05-7	Petroleum products, refined[4]	805.9	813.4	806.1	802.3	798.3	798.6	801.9	789.7	770.6	r733.5	712.7	738.5	777.1	781.8
06	Chemicals and allied products	287.6	293.3	293.3	292.4	292.0	291.8	292.9	293.6	294.6	r294.3	296.2	293.5	291.8	291.6
06-1	Industrial chemicals[5]	363.3	371.5	371.8	367.9	363.7	362.8	362.9	362.2	361.4	r357.8	358.1	352.9	349.7	349.7
06-21	Prepared paint	249.8	250.7	250.7	250.7	254.5	256.4	258.9	258.9	258.9	r258.9	265.1	265.1	265.1	265.1
06-22	Paint materials	300.1	308.5	308.0	308.1	308.3	305.8	306.6	306.4	306.8	r306.7	306.2	304.2	304.3	302.3
06-3	Drugs and pharmaceuticals	193.5	195.0	197.8	198.5	198.2	198.9	202.2	204.4	205.9	r208.9	209.4	209.6	209.9	211.1
06-4	Fats and oils, inedible	295.6	305.6	285.6	277.7	282.5	280.4	272.8	274.2	290.1	282.6	288.4	287.5	278.2	254.2
06-5	Agricultural chemicals and chemical products	285.0	293.4	292.6	293.1	295.7	294.9	296.8	298.0	297.1	r295.8	294.9	294.0	291.5	290.6
06-6	Plastic resins and materials	289.2	297.5	298.8	299.5	293.2	294.2	286.1	287.3	285.5	r286.0	285.4	281.9	280.6	282.4
06-7	Other chemicals and allied products	254.2	257.3	257.4	256.9	259.9	260.0	263.8	264.9	268.5	r270.0	275.9	273.0	270.7	271.8
07	Rubber and plastic products	232.6	234.1	235.7	237.3	238.0	238.3	237.3	239.3	240.8	r241.1	242.9	243.3	243.1	243.6
07-1	Rubber and rubber products	256.2	256.9	260.3	262.9	264.4	264.6	262.5	266.0	266.7	r266.6	271.2	271.5	271.8	272.5
07-11	Crude rubber	281.8	284.7	283.1	279.8	279.0	280.8	281.8	282.1	283.5	r283.3	283.6	282.4	280.2	278.6
07-12	Tires and tubes	250.6	249.9	256.5	257.1	255.9	255.4	253.6	256.7	253.7	r253.4	255.0	255.3	255.6	257.9
07-13	Miscellaneous rubber products	251.4	253.1	253.9	261.1	266.7	267.2	263.8	268.8	274.3	r274.7	284.6	285.4	286.1	286.0
07-2	Plastic products (6/78 = 100)	128.5	129.6	129.9	130.3	130.3	130.6	130.5	131.0	132.3	r132.6	132.3	132.6	132.3	132.3
08	Lumber and wood products	292.8	294.5	289.3	284.3	282.1	285.4	285.5	285.2	285.3	r286.5	283.9	288.7	288.3	284.4
08-1	Lumber	325.1	329.9	320.2	311.7	306.6	309.9	310.0	308.1	308.2	r312.4	309.2	315.2	319.2	312.7
08-2	Millwork	273.4	272.3	271.4	271.3	271.8	273.7	277.1	278.6	276.5	r276.6	275.8	280.1	281.8	280.2
08-3	Plywood	245.7	245.6	240.8	234.3	233.5	239.7	237.4	235.1	236.5	r234.0	230.6	238.9	232.4	229.3
08-4	Other wood products	239.1	239.8	240.5	239.9	239.3	239.4	238.2	238.7	238.6	237.7	237.3	237.1	236.0	235.8

See footnotes at end of table.

22. Continued—Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981					1982							
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.[1]	May	June	July	Aug.
	INDUSTRIAL COMMODITIES – Continued														
09	Pulp, paper, and allied products	273.8	275.9	277.8	279.2	280.4	281.0	285.5	286.3	287.4	r288.5	289.1	289.3	288.9	289.1
09-1	Pulp, paper, and products, excluding building paper and board	270.8	273.7	274.8	275.7	275.8	275.6	276.1	276.8	276.6	r275.3	275.4	274.6	272.9	272.6
09-11	Woodpulp	387.1	394.2	394.2	402.3	413.7	413.7	410.3	410.3	411.6	r389.9	388.2	380.3	370.5	369.2
09-12	Wastepaper	175.7	182.1	178.5	165.1	144.5	143.4	135.2	128.8	129.2	128.1	121.5	115.2	115.6	116.0
09-13	Paper	279.8	282.1	285.9	287.8	287.4	287.2	289.2	289.8	289.6	r289.4	288.8	288.2	287.0	286.1
09-14	Paperboard	258.1	260.6	261.6	261.7	261.6	260.0	259.7	261.4	261.1	261.2	258.8	255.9	256.0	255.5
09-15	Converted paper and paperboard products	258.8	262.4	262.8	263.2	263.1	263.2	263.9	264.7	264.5	r264.3	264.7	265.0	264.6	264.4
09-2	Building paper and board	231.7	234.2	234.2	233.3	232.1	230.3	233.8	231.4	238.6	r238.3	238.5	238.4	238.2	243.8
10	Metals and metal products	300.4	304.1	304.9	305.3	304.2	303.3	304.7	304.2	302.9	r303.1	303.4	300.1	300.2	300.2
10-1	Iron and steel	333.8	339.9	339.8	341.3	340.0	339.9	343.1	342.9	342.5	r342.8	341.2	338.3	337.4	337.4
10-17	Steel mill products	337.6	344.9	345.3	348.7	348.6	348.9	350.6	350.3	350.5	352.2	352.1	349.9	349.1	348.7
10-2	Nonferrous metals	285.8	287.3	289.4	285.4	281.1	277.1	274.4	273.6	267.2	266.1	263.5	253.7	256.1	256.1
10-3	Metal containers	315.6	318.7	318.8	318.2	318.1	316.8	324.3	326.2	327.2	r330.0	330.1	330.2	329.9	328.8
10-4	Hardware	263.2	265.3	267.8	269.5	271.5	272.0	274.1	274.8	278.2	r278.5	276.7	277.9	278.9	280.3
10-5	Plumbing fixtures and brass fittings	267.5	271.2	271.6	272.9	273.1	274.0	274.6	276.4	279.1	280.3	281.0	282.5	283.0	274.7
10-6	Heating equipment	224.2	227.9	228.5	229.0	228.8	229.9	233.4	233.1	235.4	r236.0	237.3	238.6	239.1	238.6
10-7	Fabricated structural metal products	295.5	299.3	300.0	302.6	303.2	303.0	303.4	304.0	304.5	r305.2	304.8	305.2	303.8	304.4
10-8	Miscellaneous metal products	270.5	272.9	273.7	276.1	278.0	278.3	281.2	278.7	279.0	r279.7	280.0	280.5	280.8	280.9
11	Machinery and equipment	263.3	266.2	268.1	269.3	270.4	272.0	274.1	275.4	276.2	r277.6	278.1	278.4	279.4	279.7
11-1	Agricultural machinery and equipment	288.3	290.3	292.8	295.5	300.8	302.8	303.1	304.6	306.4	r306.8	307.0	308.8	310.2	311.4
11-2	Construction machinery and equipment	320.8	325.0	326.5	328.3	329.6	332.0	337.0	337.9	339.2	r341.5	343.4	343.7	346.1	346.4
11-3	Metalworking machinery and equipment	301.3	303.5	305.3	306.6	307.9	312.9	315.9	317.2	317.8	r318.6	320.3	320.8	321.9	322.4
11-4	General purpose machinery and equipment	288.7	292.3	293.9	295.1	296.2	297.9	300.0	301.3	302.0	r303.4	303.3	303.1	304.4	304.5
11-6	Special industry machinery and equipment	307.9	310.3	312.8	314.6	315.0	316.4	320.4	320.7	321.3	r322.9	324.1	324.7	327.1	326.9
11-7	Electrical machinery and equipment	220.2	222.6	224.2	225.3	226.0	227.0	228.7	229.5	230.3	r231.7	231.7	231.9	232.0	232.0
11-9	Miscellaneous machinery	252.6	256.0	258.5	259.0	259.8	260.4	261.4	264.0	264.9	r266.1	267.2	268.0	268.9	270.3
12	Furniture and household durables	198.5	199.6	201.0	201.3	202.1	202.9	203.5	204.6	205.5	r206.0	206.1	206.6	206.8	207.4
12-1	Household furniture	219.7	220.7	222.2	222.8	225.1	226.6	227.5	227.4	227.6	r229.7	230.9	231.1	230.9	231.4
12-2	Commercial furniture	257.5	259.1	261.6	262.1	263.3	263.9	266.7	271.2	273.6	r274.2	275.5	276.2	277.8	278.0
12-3	Floor coverings	178.7	181.9	181.7	180.9	182.3	181.4	180.3	182.6	180.6	r181.1	180.5	180.7	180.1	179.4
12-4	Household appliances	187.3	189.1	190.1	190.8	190.9	191.3	193.4	195.3	197.3	r197.8	197.8	198.5	199.3	200.1
12-5	Home electronic equipment	88.2	87.6	87.8	88.1	88.0	88.6	89.3	88.6	89.1	r87.9	88.1	88.2	88.2	88.0
12-6	Other household durable goods	281.0	280.9	285.8	285.8	285.3	286.2	283.4	283.7	285.0	r285.9	283.1	284.6	283.6	287.4
13	Nonmetallic mineral products	309.5	314.1	313.2	313.3	313.7	313.5	315.6	319.0	319.9	r320.2	319.1	318.7	320.3	320.4
13-11	Flat glass	212.6	218.3	218.3	218.5	218.5	216.1	216.2	216.2	216.2	216.2	216.2	216.2	226.1	226.1
13-2	Concrete ingredients	296.3	298.0	298.5	298.4	298.5	298.7	306.2	308.4	309.8	r309.5	310.7	310.9	310.6	311.7
13-3	Concrete products	291.2	293.4	292.9	293.3	293.4	293.6	295.5	295.9	296.3	r297.7	297.1	297.9	298.2	298.3
13-4	Structural clay products, excluding refractories	249.8	250.9	255.3	256.2	256.6	257.5	257.5	257.7	257.7	r258.1	258.1	258.4	258.8	258.8
13-5	Refractories	302.4	307.1	307.1	307.8	308.9	311.3	316.8	335.1	337.4	338.7	340.4	340.9	340.9	341.2
13-6	Asphalt roofing	407.5	420.9	401.6	402.9	410.2	405.6	401.3	400.4	394.4	r386.7	384.0	388.8	392.3	392.5
13-7	Gypsum products	256.2	255.3	252.9	252.4	251.3	249.7	250.4	256.0	260.7	r263.2	258.4	258.4	255.8	253.9
13-8	Glass containers	328.7	335.5	335.5	335.5	335.5	335.5	335.4	352.2	356.0	r358.1	357.4	357.4	357.4	357.3
13-9	Other nonmetallic minerals	483.8	475.3	474.3	473.3	473.5	474.7	474.7	478.7	478.6	r479.1	472.1	465.2	468.4	468.2
14	Transportation equipment (12/68 = 100)	235.4	235.9	231.8	244.5	248.3	248.8	248.6	245.2	245.2	r245.8	247.2	249.6	250.4	251.2
14-1	Motor vehicles and equipment	237.6	238.4	232.8	247.8	248.9	248.5	250.8	246.8	246.8	r247.2	248.7	251.5	252.5	253.3
14-4	Railroad equipment	336.1	338.7	338.7	338.7	341.3	340.1	345.8	345.8	348.3	r343.5	349.6	349.6	349.3	354.7
15	Miscellaneous products	265.7	262.6	267.0	268.5	269.5	267.6	268.3	273.5	272.7	r273.2	272.3	271.6	273.8	272.4
15-1	Toys, sporting goods, small arms, ammunition	211.9	212.7	213.6	213.0	212.7	213.3	218.4	220.1	220.7	r221.0	222.7	222.9	222.9	224.4
15-2	Tobacco products	268.3	268.8	274.5	278.2	278.2	278.2	278.2	308.6	308.6	r308.7	308.7	308.7	311.3	311.3
15-3	Notions	258.8	267.7	267.8	268.7	268.7	268.7	270.3	270.4	271.5	r271.5	280.3	280.3	280.3	280.3
15-4	Photographic equipment and supplies	210.0	207.1	208.7	208.9	209.0	209.1	209.9	210.5	212.1	r214.2	210.9	210.8	210.6	210.6
15-5	Mobile homes (12/74 = 100)	156.8	158.3	158.7	158.1	159.3	159.3	159.5	159.6	161.9	r162.2	162.1	162.5	162.5	162.5
15-6	Other miscellaneous products	347.4	334.6	345.5	348.5	344.8	344.6	342.2	341.1	334.5	r334.1	330.8	328.0	333.1	326.5

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[1] Data for April 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Figures for natural gas are lagged 1 month.

[3] Includes only domestic production.

[4] Most prices for refined petroleum products are lagged 1 month.

[5] Some prices for industrial chemicals are lagged 1 month.

r = revised.

23. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1981	1981					1982							
		Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.[1]	May	June	July	Aug.
All commodities — less farm products	295.7	298.7	298.5	299.5	299.4	300.0	302.0	301.9	301.4	300.9	301.1	302.3	304.1	304.3
All foods	251.8	252.7	251.7	249.1	247.4	247.6	251.6	253.2	251.6	r254.7	257.9	259.0	256.8	255.9
Processed foods	252.1	256.0	252.8	250.0	247.8	248.5	250.5	251.9	252.1	r255.1	259.0	260.9	259.8	258.9
Industrial commodities less fuels	263.7	266.1	266.4	266.7	269.0	269.4	271.1	271.5	271.7	r272.3	272.6	272.5	272.7	272.7
Selected textile mill products (Dec. 1975 = 100)	135.8	137.2	138.1	138.2	138.4	137.9	138.3	138.7	139.0	r139.0	138.9	138.1	137.5	137.6
Hosiery	134.3	135.3	136.5	136.5	136.5	136.7	138.9	138.9	137.5	r138.0	138.5	138.5	138.5	138.5
Underwear and nightwear	203.4	204.7	204.7	204.7	205.7	208.3	213.9	215.6	215.9	r215.9	216.3	217.8	218.0	218.1
Chemicals and allied products, including synthetic rubber and fibers and yarns	278.4	284.0	284.4	283.8	283.2	283.1	284.3	285.1	285.6	r285.6	287.3	284.8	283.0	283.4
Pharmaceutical preparations	189.9	189.4	191.6	192.8	192.5	193.3	196.6	199.3	201.1	r204.5	205.3	205.3	205.7	207.2
Lumber and wood products, excluding millwork	303.0	306.2	298.0	290.1	288.4	290.7	289.9	287.9	288.5	r290.5	297.2	294.0	294.6	289.2
Steel mill products, including fabricated wire products	337.6	344.9	345.3	348.7	348.6	348.9	350.6	350.3	350.5	352.2	352.1	349.9	348.7	348.4
Finished steel mill products, excluding fabricated wire products	336.2	343.3	343.7	347.4	347.2	347.5	349.3	348.9	349.2	351.0	350.9	348.6	347.7	347.3
Finished steel mill products, including fabricated wire products	336.2	343.3	343.7	347.4	347.2	347.5	349.3	348.9	348.2	351.0	350.9	348.6	347.4	347.0
Special metals and metal products	279.4	281.9	280.1	286.7	286.8	286.6	287.9	288.0	285.3	r285.6	286.4	285.8	286.3	286.6
Fabricated metal products	280.0	283.1	283.9	286.0	287.0	287.1	289.4	289.0	289.9	r290.8	294.3	294.6	294.0	293.9
Copper and copper products	203.8	206.2	205.1	201.9	198.9	195.4	194.5	194.1	190.8	r191.6	191.6	180.0	179.5	180.1
Machinery and motive products	256.7	258.6	257.7	264.3	265.8	266.9	268.9	268.1	268.5	r269.6	270.5	271.8	272.8	273.3
Machinery and equipment, except electrical	288.5	291.7	293.8	295.0	296.4	298.4	300.7	302.3	303.1	r304.6	305.2	305.7	307.2	307.7
Agricultural machinery, including tractors	297.3	298.2	301.6	305.7	312.5	314.7	315.1	316.0	318.4	r319.0	318.2	318.8	320.5	321.5
Metalworking machinery	329.7	331.4	333.9	336.7	338.3	341.2	343.8	344.9	346.4	348.8	349.4	350.3	352.7	353.2
Numerically controlled machine tools (Dec. 1971 = 100)	238.3	241.8	241.8	241.8	242.2	242.0	240.1	239.8	239.9	r239.9	240.3	240.3	239.6	239.6
Total tractors	324.7	327.8	330.7	338.3	342.2	342.3	348.9	348.9	349.1	r352.4	352.4	353.2	354.2	354.8
Agricultural machinery and equipment less parts	289.8	291.1	294.0	297.6	303.5	305.8	308.5	307.4	308.7	r310.3	308.6	311.0	311.8	312.5
Farm and garden tractors less parts	300.1	301.4	305.5	313.0	319.6	319.7	319.7	319.7	323.5	r323.5	322.9	324.3	324.2	324.8
Agricultural machinery, excluding tractors less parts	295.2	295.8	298.7	299.9	303.5	310.9	311.6	313.2	314.6	r315.6	314.7	316.5	317.7	319.0
Industrial valves	315.9	319.8	322.7	322.4	323.4	325.3	329.6	330.2	330.5	r331.1	327.8	327.2	329.2	329.2
Industrial fittings	302.1	303.0	304.3	304.1	304.1	304.1	304.1	304.1	304.1	r309.1	309.1	309.1	310.2	310.2
Construction materials	283.0	285.5	284.4	284.6	284.1	285.2	286.6	286.9	287.5	r288.2	287.9	289.1	289.0	289.2

[1] Data for April 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

24. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1981		1981				1982							
		Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.[1]	May	June	July	Aug.
Total durable goods	269.8	271.9	271.8	275.0	275.4	276.0	277.6	277.4	277.4	278.1	278.4	278.4	279.1	279.1
Total nondurable goods	312.4	318.2	315.0	312.8	311.4	311.4	314.7	315.4	314.2	r313.6	314.5	316.0	317.7	317.3
Total manufactures	286.0	288.6	288.3	289.8	289.7	289.9	291.9	292.0	291.4	r291.1	291.3	292.4	293.9	293.9
Durable	269.7	271.7	271.7	275.1	275.8	276.5	278.0	277.8	277.8	r278.7	279.1	279.4	280.1	280.1
Nondurable	303.6	306.9	306.3	305.5	304.5	304.3	306.8	307.2	305.9	r304.1	304.1	306.2	308.6	308.6
Total raw or slightly processed goods	330.7	335.8	332.7	326.4	323.3	323.6	328.9	330.6	329.7	r331.9	334.9	333.6	333.3	331.8
Durable	271.2	275.9	270.4	263.7	253.4	247.8	253.8	253.7	250.1	r245.3	239.4	225.2	225.0	225.7
Nondurable	334.0	339.1	336.3	330.0	327.4	328.2	333.4	335.2	334.5	r337.2	340.8	340.6	340.2	338.6

[1] Data for April 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

25. Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981					1982							
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.[1]	May	June	July	Aug.
	MINING														
1011	Iron ores (12/75 = 100)	167.8	168.1	168.1	168.1	171.3	171.3	171.3	171.3	171.3	171.3	177.1	177.1	177.1	177.1
1092	Mercury ores (12/75 = 100)	348.0	365.4	364.5	354.1	354.1	343.7	347.9	313.7	325.0	327.0	308.3	307.5	308.2	287.5
1211	Bituminous coal and lignite	493.7	503.4	506.0	506.2	507.8	510.3	520.9	525.8	524.9	r527.9	529.4	529.8	533.5	534.7
1311	Crude petroleum and natural gas	898.6	900.3	913.6	900.8	907.5	921.7	919.7	913.9	905.4	r893.3	902.0	915.1	925.3	926.7
1442	Construction sand and gravel	277.4	278.2	279.2	279.7	279.8	280.7	287.4	289.9	293.1	r292.6	294.4	295.2	295.3	298.5
1455	Kaolin and ball clay (6/76 = 100)	138.7	137.1	137.1	143.4	143.4	143.4	149.6	149.6	149.6	151.7	151.7	151.7	151.7	151.7
	MANUFACTURING														
2011	Meatpacking plants	243.1	250.9	252.7	244.1	237.0	234.1	237.6	244.4	247.3	r254.0	264.3	265.7	258.4	253.0
2013	Sausages and other prepared meats	241.4	254.0	253.9	252.2	248.9	247.0	245.6	251.0	248.6	r253.0	265.9	273.7	272.2	275.4
2016	Poultry dressing plants	192.0	201.2	188.8	175.5	172.8	166.7	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
2021	Creamery butter	274.8	273.7	275.0	279.2	278.5	275.0	275.0	276.4	276.8	275.3	274.9	274.9	275.0	276.3

See footnotes at end of table.

25. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981					1982							
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.[1]	May	June	July	Aug.
	MANUFACTURING — Continued														
2022	Cheese, natural and processed (12/72 = 100)	215.7	214.5	215.0	215.4	215.9	218.4	218.6	217.9	216.7	r216.5	217.1	217.9	218.6	218.8
2024	Ice cream and frozen desserts (12/72 = 100)	211.9	212.7	212.7	212.5	212.5	212.7	212.8	212.8	210.9	214.2	214.2	214.2	213.6	213.6
2033	Canned fruits and vegetables	248.5	252.9	254.3	257.0	258.4	258.9	260.8	262.6	262.4	r262.3	262.3	264.6	265.5	263.2
2034	Dehydrated food products (12/73 = 100)	177.6	178.7	183.4	182.1	181.4	182.1	184.0	181.8	181.5	181.5	178.5	178.5	180.4	180.0
2041	Flour mills (12/71 = 100)	196.0	191.0	195.3	191.1	191.5	189.2	191.5	187.5	187.3	182.5	188.4	189.1	185.5	180.2
2044	Rice milling	277.2	284.3	268.2	247.3	235.4	215.1	205.9	192.2	183.5	177.9	183.0	180.3	177.6	183.0
2048	Prepared foods, n.e.c. (12/75 = 100)	124.5	124.8	118.6	117.3	116.4	116.0	116.0	115.9	114.6	115.4	116.7	115.7	115.4	113.3
2061	Raw cane sugar	273.5	254.6	212.3	219.9	224.3	230.8	247.6	245.1	233.0	242.9	269.2	286.7	311.5	318.1
2063	Beet sugar	314.3	287.5	270.7	250.3	230.4	250.5	266.4	272.2	272.2	r269.7	280.2	280.2	280.5	257.4
2067	Chewing gum	309.8	303.2	303.2	303.2	303.2	303.2	303.3	303.3	303.3	303.4	303.4	303.4	303.3	304.7
2074	Cottonseed oil mills	199.0	206.0	182.3	172.0	167.2	182.4	184.9	170.5	158.1	r164.7	167.9	170.2	174.6	173.1
2075	Soybean oil mills	245.8	245.8	234.2	229.7	221.2	221.9	223.1	220.4	216.6	r225.8	232.0	226.4	224.1	205.5
2077	Animal and marine fats and oils	288.0	294.1	281.2	274.0	272.3	266.6	260.4	262.6	271.8	273.3	271.5	272.3	264.3	242.4
2083	Malt	282.5	286.1	275.4	275.4	275.4	275.4	267.1	267.1	267.1	258.1	258.8	259.8	259.8	259.8
2085	Distilled liquor, except brandy (12/75 = 100)	134.7	135.5	135.5	135.5	137.9	137.9	140.1	137.9	140.2	140.2	139.8	139.8	139.8	140.4
2091	Canned and cured seafoods (12/73 = 100)	187.8	188.4	188.8	188.2	188.3	188.5	187.2	187.0	187.7	188.2	188.0	188.4	187.8	184.3
2092	Fresh or frozen packaged fish	369.1	347.1	353.5	356.9	360.8	369.5	386.8	389.2	419.1	r432.2	427.5	442.8	418.9	426.2
2095	Roasted coffee (12/72 = 100)	238.1	235.7	237.3	238.2	238.2	240.4	245.1	247.7	248.8	r250.6	247.9	247.6	247.0	246.4
2098	Macaroni and spaghetti	252.0	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5
2111	Cigarettes	277.7	278.3	284.2	288.4	288.4	288.4	288.4	319.7	319.7	r319.8	319.8	319.8	324.9	324.9
2121	Cigars	170.0	169.7	174.5	174.5	174.5	174.5	174.5	178.6	178.6	r179.6	176.6	176.6	176.6	176.6
2131	Chewing and smoking tobacco	320.7	321.3	325.3	326.1	326.1	326.1	326.1	349.4	349.4	349.4	353.6	353.6	358.3	358.3
2211	Weaving mills, cotton (12/72 = 100)	232.7	237.4	236.0	233.2	229.8	227.6	227.3	227.1	226.4	r226.3	227.7	226.0	222.0	221.7
2221	Weaving mills, synthetic (12/77 = 100)	138.7	139.3	139.5	139.4	139.8	139.5	139.8	139.7	140.0	139.2	138.9	138.0	137.5	137.1
2251	Women's hosiery, except socks (12/75 = 100)	113.5	115.0	115.0	115.2	115.1	115.2	115.6	115.6	116.1	r116.2	117.0	117.0	117.0	117.0
2254	Knit underwear mills	210.2	210.8	210.9	210.9	212.8	213.0	225.2	225.2	225.9	226.0	226.0	228.7	230.8	231.1
2257	Circular knit fabric mills (6/76 = 100)	110.9	112.0	111.9	112.0	112.4	111.8	112.4	113.2	110.7	110.2	109.7	108.2	108.6	108.7
2261	Finishing plants, cotton (6/76 = 100)	144.9	146.2	145.4	144.9	143.5	141.4	140.5	140.3	140.8	141.6	141.4	141.3	140.2	139.8
2262	Finishing plants, synthetics, silk (6/76 = 100)	128.5	127.8	129.0	129.1	129.1	128.6	129.4	129.9	128.5	r128.5	128.2	127.2	126.7	128.7
2272	Tufted carpets and rugs	154.2	157.4	157.3	155.7	157.0	156.7	155.5	156.7	155.7	156.1	156.4	156.9	156.1	155.4
2281	Yarn mills, except wool (12/71 = 100)	221.7	225.4	223.8	222.4	219.9	217.2	216.3	215.7	215.4	r214.4	214.9	214.0	213.7	213.2
2282	Throwing and winding mills (6/76 = 100)	139.3	146.8	148.0	154.5	145.6	146.0	145.7	150.3	150.0	r151.0	152.6	149.3	149.0	140.4
2284	Thread mills (6/76 – 100)	151.4	151.1	154.8	157.0	157.0	156.8	156.8	156.8	156.8	156.7	156.6	156.5	156.5	158.0
2298	Cordage and twine (12/77 = 100)	134.8	134.3	139.3	139.3	139.3	140.7	141.0	141.0	141.0	141.0	141.0	141.0	141.0	141.0
2311	Men's and boys' suits and coats	224.0	226.2	226.5	227.4	228.4	230.5	233.7	233.6	233.8	r234.4	234.6	235.3	237.2	239.8
2321	Men's and boys' shirts and nightwear	209.5	210.6	211.5	212.4	212.6	213.4	173.4	215.9	216.9	217.3	173.6	215.7	216.0	216.1
2322	Men's and boys' underwear	230.6	230.8	230.8	230.8	233.0	233.0	246.9	246.9	247.4	247.4	247.4	251.2	251.2	251.2
2323	Men's and boys' neckwear (12/75 = 100)	114.6	113.9	113.9	113.9	113.9	113.9	115.3	117.3	117.3	117.3	117.3	121.3	121.3	121.3
2327	Men's and boys' separate trousers	186.2	186.4	186.4	186.8	186.9	187.1	188.4	188.4	188.4	r194.1	194.9	195.0	195.6	195.6
2328	Men's and boys' work clothing	248.6	251.1	251.2	253.1	253.2	253.3	252.5	254.2	254.9	r255.2	253.7	254.1	252.9	253.1
2331	Women's and misses' blouses and waists (6/78 = 100)	120.6	121.2	121.3	126.4	126.7	126.7	126.5	126.5	126.5	r126.5	123.7	123.7	123.6	123.8
2335	Women's and misses' dresses (12/77 = 100)	121.3	124.3	123.5	123.4	124.1	122.7	123.0	123.0	123.1	122.9	122.9	123.1	123.7	123.6
2341	Women's and children's underwear (12/72 = 100)	169.7	170.6	170.6	170.6	171.6	171.6	174.7	174.9	175.0	r175.0	177.2	179.4	179.4	179.4
2342	Brassieres and allied garments (12/75 = 100)	136.7	138.8	138.8	138.8	138.9	140.1	145.1	148.8	148.8	r148.8	148.5	148.5	148.4	148.4
2361	Children's dresses and blouses (12/77 = 100)	120.9	121.7	121.7	122.0	122.5	123.2	123.2	123.2	123.2	r122.2	121.0	121.0	119.4	120.3
2381	Fabric dress and work gloves	289.3	289.2	289.2	289.2	289.2	289.2	293.8	297.4	295.5	295.5	295.5	294.5	294.5	288.2
2394	Canvas and related products (12/77 = 100)	132.0	133.1	134.6	137.6	137.6	139.7	144.9	144.9	147.2	r145.7	146.5	143.8	143.8	143.8
2396	Automotive and apparel trimmings (12/77 = 100)	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
2421	Sawmills and planing mills (12/71 = 100)	228.2	231.2	225.2	219.5	216.5	218.6	218.0	216.9	216.9	r218.8	216.8	219.7	221.6	217.5
2436	Softwood veneer and plywood (12/75 = 100)	142.0	139.6	135.4	129.3	129.0	134.5	132.5	130.5	131.8	r129.1	126.0	133.3	129.6	126.7
2439	Structural wood members, n.e.c. (12/75 = 100)	156.6	156.9	156.6	154.8	154.2	153.2	153.9	153.5	152.6	r153.4	151.5	152.9	154.5	155.1
2448	Wood pallets and skids (12/75 = 100)	152.5	152.9	152.8	152.0	150.4	149.9	148.8	149.0	148.2	r145.9	144.6	144.2	144.1	143.8
2451	Mobile homes (12/74 = 100)	156.9	158.3	158.7	159.2	159.3	160.3	160.4	160.5	162.7	r163.0	163.1	163.4	163.4	163.4
2492	Particleboard (12/75 = 100)	173.6	173.6	170.5	168.0	168.9	170.3	172.6	170.7	177.7	r178.2	176.7	178.9	175.4	174.5
2511	Wood household furniture (12/71 = 100)	197.4	199.2	200.1	201.0	202.0	202.8	203.6	204.3	205.1	r207.4	207.3	207.6	208.1	208.0
2512	Upholstered household furniture (12/71 = 100)	174.0	175.1	175.3	175.6	179.5	182.1	184.4	179.3	179.3	r181.8	185.1	185.1	184.1	185.5
2515	Mattresses and bedsprings	192.3	194.6	195.2	195.2	197.5	198.0	204.4	205.6	205.6	r205.7	210.3	210.3	210.1	210.4
2521	Wood office furniture	254.2	254.7	257.1	257.1	257.0	257.6	261.9	270.7	270.8	r270.8	271.9	271.9	272.0	272.4
2611	Pulp mills (12/73 = 100)	252.4	251.3	251.3	255.0	262.5	262.5	258.6	258.6	260.7	r253.6	254.8	246.5	238.5	237.2
2621	Paper mills, except building (12/74 = 100)	156.2	157.4	158.8	158.8	158.7	158.6	162.0	162.0	162.0	r161.3	160.5	160.8	160.7	159.9
2631	Paperboard mills (12/74 = 100)	151.7	152.4	153.7	153.6	153.5	152.7	152.5	153.4	153.0	r152.8	151.5	150.0	149.1	149.4
2647	Sanitary paper products	343.4	344.3	344.3	344.0	344.1	344.6	344.6	344.6	344.5	r344.5	344.7	347.3	348.4	349.2
2654	Sanitary food containers	244.8	252.0	253.2	253.4	253.3	253.3	254.0	258.9	260.0	r259.9	261.4	261.4	261.4	261.4
2655	Fiber cans, drums, and similar products (12/75 = 100)	163.0	163.2	163.2	167.6	167.6	170.0	178.4	178.5	178.5	178.5	178.7	178.7	178.7	177.5
2812	Alkalies and chlorine (12/73 = 100)	305.9	310.4	316.0	317.7	317.0	324.8	329.4	335.2	335.6	r322.0	338.2	338.2	324.4	325.8
2821	Plastics materials and resins (6/76 = 100)	150.8	155.6	156.0	158.3	153.7	154.3	150.7	152.6	151.0	r152.6	151.9	150.7	150.2	150.8
2822	Synthetic rubber	293.3	298.4	299.3	301.0	301.4	302.7	303.9	306.1	306.7	306.6	307.1	303.8	301.8	299.9
2824	Organic fiber, noncellulosic	155.6	160.3	160.6	164.2	162.5	161.9	161.8	162.9	161.6	r162.5	161.7	161.3	160.5	159.5
2873	Nitrogenous fertilizers (12/75 = 100)	142.8	143.9	142.1	142.9	144.2	142.9	142.4	142.6	142.2	r141.7	141.1	139.5	136.1	136.0
2874	Phosphatic fertilizers	254.1	260.0	259.4	259.4	258.5	259.0	261.0	263.5	261.6	r258.2	258.2	257.6	256.6	248.7
2875	Fertilizers, mixing only	270.7	273.0	272.0	273.6	273.7	270.5	274.3	276.8	278.4	r278.7	278.5	278.8	278.6	277.9
2892	Explosives	311.9	319.8	316.5	318.7	316.5	315.6	314.9	317.6	320.5	r327.2	321.4	319.6	318.4	324.8
2911	Petroleum refining (6/76 = 100)	294.4	297.5	295.8	294.6	293.3	293.1	293.0	289.1	281.7	r267.4	259.2	287.7	291.4	283.7
2951	Paving mixtures and blocks (12/75 = 100)	194.3	196.3	196.0	196.3	196.4	196.0	197.0	198.0	198.1	197.1	196.6	195.1	194.8	194.4
2952	Asphalt felts and coatings (12/75 = 100)	176.9	182.3	174.3	174.9	176.1	176.1	174.2	173.8	171.2	r168.1	167.7	168.8	171.3	171.1
3011	Tires and inner tubes (12/73 = 100)	215.8	215.5	220.6	221.0	220.1	221.2	222.0	222.4	220.3	r216.7	221.2	221.5	221.7	226.2

25. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981					1982							
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.[1]	May	June	July	Aug.
3021	Rubber and plastic footwear (12/71 = 100)	184.4	185.4	185.3	186.0	186.0	185.2	186.1	186.4	186.1	186.0	186.7	187.0	187.0	186.8
3031	Reclaimed rubber (12/73 =100)	194.1	200.3	200.3	200.3	200.3	200.3	200.3	200.4	207.2	[r]208.2	207.2	208.4	207.7	207.4
3079	Miscellaneous plastic products (6/78 = 100)	128.9	130.2	130.3	130.8	130.8	131.0	131.1	131.6	132.8	[r]133.2	132.7	132.9	132.6	132.7
3111	Leather tanning and finishing (12/77 = 100)	150.7	148.5	148.3	148.2	148.8	147.5	150.8	148.3	147.9	[r]148.8	147.3	148.9	147.5	148.5
3143	Men's footwear, except athletic (12/75 = 100)	169.3	171.4	170.9	170.5	170.6	171.3	173.1	172.2	173.5	174.9	175.1	175.2	171.6	175.5
3144	Women's footwear, except athletic	217.1	217.8	218.2	212.5	212.7	212.4	208.5	209.8	210.3	[r]217.0	213.4	215.2	218.3	220.6
3171	Women's handbags and purses (12/75 = 100)	155.5	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.5	157.8
3211	Flat glass (12/71 = 100)	175.3	180.0	180.0	180.1	180.1	177.4	177.5	177.5	177.5	177.5	177.5	177.5	187.7	187.7
3221	Glass containers	329.6	335.4	335.4	335.4	335.4	335.4	335.3	352.1	355.8	[r]358.0	357.3	357.3	357.3	357.2
3241	Cement, hydraulic	329.8	331.8	332.0	330.3	330.3	330.3	328.6	341.5	341.5	[r]341.1	338.6	338.7	337.8	338.0
3251	Brick and structural clay tile	296.5	298.9	299.9	299.9	300.5	303.5	299.9	299.4	299.4	[r]303.4	[r]305.8	306.4	307.2	307.2
3253	Ceramic wall and floor tile (12/75 = 100)	133.4	132.1	140.4	140.4	140.4	140.4	140.4	140.4	140.4	[r]140.6	138.0	138.0	138.0	138.0
3255	Clay refractories	310.2	312.3	312.5	313.9	315.2	318.8	329.6	354.4	355.6	[r]355.2	357.2	357.1	357.2	357.7
3259	Structural clay products, n.e.c.	222.6	223.9	227.5	231.7	231.7	236.6	225.6	226.0	225.8	[r]215.8	218.4	218.5	218.4	218.5
3261	Vitreous plumbing fixtures	254.9	258.6	259.0	259.0	259.3	260.1	261.1	260.6	260.6	[r]261.8	265.4	265.5	264.2	263.8
3262	Vitreous china food utensils	335.0	338.8	338.8	338.8	344.7	344.7	347.7	347.7	347.3	[r]348.5	345.2	348.8	348.8	348.8
3263	Fine earthenware food utensils	309.1	308.6	313.8	313.8	315.0	315.0	315.1	315.1	315.0	[r]314.8	314.1	314.8	314.8	314.8
3269	Pottery products, n.e.c. (12/75 = 100)	160.1	160.7	161.8	161.8	163.7	163.7	164.3	164.3	164.2	[r]164.0	162.6	164.8	164.7	164.7
3271	Concrete block and brick	270.4	274.0	274.2	274.3	274.2	275.1	274.9	276.4	276.4	[r]276.5	276.8	277.0	277.1	277.4
3273	Ready-mixed concrete	298.7	300.0	299.2	299.5	299.4	299.6	301.9	301.9	302.5	[r]303.0	303.0	304.7	305.4	304.8
3274	Lime (12/75 = 100)	172.5	173.9	173.7	173.7	173.5	173.8	178.8	183.7	185.7	[r]186.3	188.1	188.4	188.1	188.3
3275	Gypsum products	250.9	258.9	252.9	251.5	252.5	250.6	250.8	253.8	260.5	[r]262.5	258.8	256.2	256.5	254.3
3291	Abrasive products (12/71 = 100)	232.9	235.1	237.3	237.6	241.0	241.0	241.3	248.3	248.8	[r]250.2	251.2	252.1	252.0	252.3
3297	Nonclay refractories (12/74 = 100)	185.3	188.7	188.7	188.7	190.2	190.3	191.2	198.3	200.4	[r]202.3	203.2	203.9	203.8	203.8
3312	Blast furnaces and steel mills	342.8	350.0	350.3	350.1	352.0	352.3	354.7	354.4	354.4	356.1	355.9	353.6	352.9	352.8
3313	Electrometallurgical products (12/75 = 100)	121.8	121.5	121.4	125.4	125.4	125.3	125.3	123.4	120.3	120.3	120.3	120.4	120.4	121.4
3316	Cold finishing of steel shapes	316.2	325.7	326.2	326.4	326.4	326.7	327.0	327.0	327.0	[r]327.1	327.8	325.6	325.2	325.6
3317	Steel pipes and tubes	341.5	350.6	360.5	362.0	362.3	362.0	363.7	364.1	365.8	[r]365.9	365.8	365.7	364.0	361.6
3321	Gray iron foundries (12/68 = 100)	298.7	299.9	302.0	303.3	305.2	306.1	307.9	310.0	311.5	[r]311.9	311.4	311.6	311.3	311.3
3333	Primary zinc	326.3	353.8	355.9	337.0	337.5	315.7	308.6	311.2	292.0	[r]273.4	259.9	259.7	268.4	277.0
3334	Primary aluminum	333.1	334.4	333.6	333.5	332.5	332.8	324.1	320.2	320.8	[r]312.4	313.8	308.4	305.7	308.0
3351	Copper rolling and drawing	212.3	212.9	214.1	212.3	209.2	207.1	204.8	203.9	198.4	[r]196.4	197.5	198.8	199.2	199.1
3353	Aluminum sheet, plate, and foil (12/75 = 100)	175.8	177.4	178.0	178.9	180.2	180.6	181.8	181.7	181.2	[r]178.8	178.7	178.0	178.2	177.1
3354	Aluminum extruded products (12/75 = 100)	180.1	181.3	181.2	181.3	181.4	181.1	180.8	180.8	180.5	[r]180.2	180.2	180.1	179.5	178.9
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	159.1	157.2	157.7	163.0	166.2	166.1	166.1	166.5	166.3	162.9	163.0	165.4	164.7	164.5
3411	Metal cans	305.1	306.7	308.6	307.0	306.0	304.9	310.8	314.0	313.6	[r]318.6	320.4	319.3	318.6	318.0
3425	Hand saws and saw blades (12/72 = 100)	201.4	204.2	204.6	204.8	205.0	208.0	211.6	214.8	214.9	[r]215.3	220.6	220.9	221.0	221.2
3431	Metal sanitary ware	265.5	269.7	270.2	270.3	271.6	271.8	271.3	272.8	275.1	275.8	275.7	276.0	276.1	276.9
3465	Automotive stampings (12/75 = 100)	146.0	146.4	146.9	147.4	149.7	149.1	150.1	144.7	144.2	[r]144.3	153.0	153.0	153.0	153.3
3482	Small arms ammunition (12/75 = 100)	159.0	159.9	159.9	159.9	159.9	163.9	167.5	167.5	167.5	[r]168.3	171.9	175.9	175.9	175.9
3493	Steel springs, except wire	245.9	248.9	252.4	253.9	254.1	256.1	255.8	257.4	256.4	[r]254.3	256.3	256.2	253.1	253.5
3494	Valves and pipe fittings (12/71 = 100)	248.9	251.0	252.7	252.9	253.5	256.7	257.7	258.9	259.1	[r]260.3	259.2	259.0	260.1	260.1
3498	Fabricated pipe and fittings	361.3	370.0	375.1	377.7	378.6	379.3	378.6	377.7	379.8	385.5	385.4	385.4	383.8	385.6
3519	Internal combustion engines, n.e.c.	311.9	314.2	322.1	323.2	326.4	325.4	329.4	332.0	332.6	[r]334.2	337.0	337.7	338.6	343.8
3531	Construction machinery (12/76 = 100)	156.8	158.5	160.1	161.0	161.6	159.7	162.5	162.4	163.3	[r]164.3	165.2	165.3	166.5	166.7
3532	Mining machinery (12/72 = 100)	282.5	285.3	289.9	289.5	290.6	292.9	295.5	297.6	300.9	[r]302.4	302.7	303.5	304.0	302.4
3533	Oilfield machinery and equipment	395.8	408.5	411.3	415.6	418.2	420.3	427.2	429.2	435.8	[r]438.3	435.8	437.8	438.4	438.6
3534	Elevators and moving stairways	253.9	252.8	254.6	257.0	260.7	265.6	264.3	268.8	271.6	[r]271.8	271.6	273.5	275.5	275.5
3542	Machine tools, metal forming types (12/71 = 100)	308.9	309.5	312.0	311.7	312.3	319.3	318.7	322.8	324.5	[r]325.2	325.6	328.5	333.6	333.6
3546	Power driven hand tools (12/76 = 100)	147.3	148.4	148.6	148.5	148.5	150.0	153.3	153.2	153.9	[r]154.7	156.1	156.4	157.4	157.5
3552	Textile machinery (12/69 = 100)	243.5	245.4	248.2	248.0	247.9	249.9	252.3	253.5	256.0	256.2	256.5	258.1	259.8	259.8
3553	Woodworking machinery (12/72 = 100)	225.0	225.4	228.9	228.9	229.1	229.1	233.7	232.9	233.4	[r]234.7	234.7	234.4	230.0	230.6
3576	Scales and balances, excluding laboratory	229.2	226.6	229.1	229.2	229.3	229.5	229.3	228.8	229.8	229.6	229.5	230.6	231.9	231.9
3592	Carburetors, pistons, rings, valves (6/76 = 100)	178.0	181.3	182.1	186.4	187.2	187.3	185.3	186.6	180.4	[r]182.8	186.2	185.7	186.8	187.2
3612	Transformers	209.9	212.8	214.5	217.3	222.0	222.0	220.5	222.2	222.4	[r]223.3	224.7	224.8	224.7	226.0
3623	Welding apparatus, electric (12/72 = 100)	227.5	229.6	231.6	232.5	233.2	235.8	236.8	236.9	232.3	[r]237.6	232.9	233.1	236.9	237.5
3631	Household cooking equipment (12/75 = 100)	141.2	141.5	141.6	141.6	141.9	142.6	146.0	146.8	147.2	148.2	148.8	148.9	149.2	150.4
3632	Household refrigerators, freezers (6/76 = 100)	132.8	135.5	136.4	137.8	137.9	137.9	140.1	141.1	142.3	142.5	143.2	144.3	145.5	145.9
3633	Household laundry equipment (12/73 = 100)	174.3	174.6	177.2	177.0	178.4	178.8	180.1	180.5	186.2	186.9	188.6	189.0	188.1	188.7
3635	Household vacuum cleaners	158.1	158.8	158.8	161.3	161.0	160.8	165.6	165.2	165.7	[r]165.4	158.3	158.4	158.4	158.4
3636	Sewing machines (12/75 = 100)	148.8	153.8	153.8	158.0	158.0	158.0	156.0	155.8	155.8	[r]154.3	153.7	153.7	153.7	153.0
3641	Electric lamps	277.3	280.0	283.1	285.9	284.8	291.3	282.1	286.1	283.6	[r]286.6	294.5	293.9	291.9	291.9
3644	Noncurrent-carrying wiring devices (12/72 = 100)	249.6	253.8	258.5	258.7	262.1	262.1	257.9	259.0	258.1	[r]260.0	263.0	261.1	260.7	263.3
3646	Commercial lighting fixtures (12/75 = 100)	154.8	155.5	157.6	158.9	159.3	159.2	159.2	161.1	162.4	[r]163.5	167.5	167.2	166.5	165.9
3648	Lighting equipment, n.e.c. (12/75 = 100)	155.9	161.3	161.7	162.0	163.4	163.1	162.8	167.8	168.8	[r]170.9	170.4	170.9	171.1	171.2
3671	Electron tubes receiving type	309.7	327.5	327.5	327.5	327.8	342.2	374.1	374.2	374.4	[r]374.5	375.0	375.1	376.0	376.0
3674	Semiconductors and related devices	[r]90.9	88.2	91.4	91.6	92.0	91.7	90.9	90.2	90.0	[r]89.5	89.6	89.7	89.8	89.5
3675	Electronic capacitors (12/75 = 100)	170.3	178.8	172.4	171.5	168.1	168.6	167.4	169.7	168.4	[r]167.6	168.6	168.6	168.7	168.2
3676	Electronic resistors (12/75 = 100)	141.4	142.5	142.7	142.7	143.0	142.8	143.7	144.0	143.4	[r]144.4	145.2	144.9	144.4	144.8
3678	Electronic connectors (12/75 = 100)	154.9	155.8	155.5	156.8	155.8	155.8	155.9	156.2	156.7	[r]156.4	158.1	158.3	157.8	160.9
3692	Primary batteries, dry and wet	182.2	182.7	182.7	182.7	182.7	182.7	182.0	184.3	185.5	[r]186.5	194.9	195.8	196.3	196.3
3711	Motor vehicles and car bodies (12/75 = 100)	150.3	150.1	143.4	158.6	158.7	158.1	158.8	155.0	154.9	[r]154.8	156.7	158.6	158.7	160.3
3942	Dolls (12/75 = 100)	131.3	130.9	130.9	130.9	130.9	130.9	135.5	136.6	136.6	[r]136.8	136.5	136.5	136.5	136.5
3944	Games, toys, and children's vehicles	221.3	222.0	222.2	222.2	222.6	223.9	229.4	232.5	234.1	[r]234.1	231.7	231.7	231.8	231.8
3955	Carbon paper and inked ribbons (12/75 = 100)	138.5	140.6	140.6	140.2	140.2	140.3	140.3	140.3	140.3	140.3	140.5	140.6	140.5	140.5
3995	Burial caskets (6/76 = 100)	139.5	140.6	143.4	143.4	143.4	142.7	142.7	143.8	145.3	145.3	140.3	140.3	150.8	150.8
3996	Hard surface floor coverings (12/75 = 100)	151.8	153.6	153.7	153.7	153.7	153.7	156.1	155.2	156.1	156.1	156.3	154.3	155.0	156.7

[1] Data for April 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

r = revised.

PRODUCTIVITY DATA

Productivity data are compiled by the Bureau of Labor Statistics from establishment data and from estimates of compensation and output supplied by the U.S. Department of Commerce and the Federal Reserve Board.

Definitions

Output is the constant dollar gross domestic product produced in a given period. Indexes of **output per hour of labor input**, or labor productivity, measure the value of goods and services produced per hour of labor. **Compensation per hour** includes wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. The data also include an estimate of wages, salaries, and supplementary payments for the self-employed, except for nonfinancial corporations, in which there are no self-employed. **Real compensation per hour** is compensation per hour adjusted by the Consumer Price Index for All Urban Consumers.

Unit labor cost measures the labor compensation cost required to produce one unit of output and is derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from the current dollar gross domestic product and dividing by output. In these tables, **unit nonlabor costs** contain all the components of unit nonlabor payments except unit profits. **Unit profits** include corporate profits and inventory valuation adjustments per unit of output.

The **implicit price deflator** is derived by dividing the current dollar estimate of gross product by the constant dollar estimate, making the deflator, in effect, a price index for gross product of the sector reported.

The use of the term "man hours" to identify the labor component of productivity and costs, in tables 26 through 29, has been discontinued. **Hours of all persons** is now used to describe the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all-employee hour** is now used to describe labor productivity in nonfinancial corporations where there are no self-employed.

Notes on the data

In the business sector and the nonfarm business sector, the basis for the output measure employed in the computation of output per hour is Gross Domestic Product rather than Gross National Product. Computation of hours includes estimates of nonfarm and farm proprietor hours.

Output data are supplied by the Bureau of Economic Analysis, U.S. Department of Commerce, and the Federal Reserve Board. Quarterly manufacturing output indexes are adjusted by the Bureau of Labor Statistics to annual estimates of output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are from the Bureau of Economic Analysis and the Bureau of Labor Statistics.

Beginning with the September 1982 issue of the *Review*, all of the productivity and cost measures contained in these tables are based on revised output and compensation measures released by the Bureau of Economic Analysis in July as part of the regular revision cycle of the National Income and Product Accounts. Measures of labor input have been revised to reflect results of the 1980 census, and seasonal factors have been recomputed for use in the preparation of quarterly measures. The word "private" is no longer being used as part of the series title of one of the two business sector measures prepared by BLS; no change has been made in the definition or content of the measures as a result of this change.

26. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950-81

[1977=100]

Item	1950	1955	1960	1965	1970	1974	1975	1976	1977	1978	1979	1980	1981
Business sector:													
Output per hour of all persons	50.4	58.3	65.2	78.3	86.2	r92.5	r94.5	97.6	100.0	100.6	99.6	98.9	100.7
Compensation per hour	20.0	26.4	33.9	41.7	58.2	78.0	85.5	92.9	100.0	108.6	118.1	131.4	144.1
Real compensation per hour	50.5	58.6	69.5	80.1	90.8	95.9	96.3	98.9	100.0	100.9	99.4	96.7	96.0
Unit labor cost	39.7	45.2	52.0	53.3	67.5	r84.4	r90.5	95.1	100.0	108.0	118.5	132.9	143.1
Unit nonlabor payments	43.4	47.6	50.6	57.6	63.2	r78.5	r90.4	94.0	100.0	106.7	112.8	119.3	135.2
Implicit price deflator	41.0	46.0	51.6	54.7	66.0	r82.4	r90.5	94.7	100.0	107.5	117.2	128.3	r140.4
Nonfarm business sector:													
Output per hour of all persons	58.3	62.8	68.3	80.5	86.8	r92.9	r94.7	97.8	100.0	100.6	99.3	98.5	99.9
Compensation per hour	21.8	28.1	35.7	42.8	58.7	78.5	86.0	93.0	100.0	108.6	118.8	130.9	143.6
Real compensation per hour	55.0	64.0	73.0	82.2	91.5	95.4	95.8	99.0	100.0	100.9	99.2	96.3	95.7
Unit labor cost	38.8	45.0	52.2	53.2	67.6	r84.5	r90.8	95.1	100.0	108.0	119.6	133.0	143.8
Unit nonlabor payments	42.7	47.8	50.4	58.0	63.7	r75.8	r88.5	93.5	100.0	105.3	110.3	119.1	134.8
Implicit price deflator	40.1	46.0	51.6	54.8	66.3	r81.6	r90.0	94.6	100.0	107.1	116.5	128.3	140.8
Nonfinancial corporations:													
Output per hour of all employees	(1)	(1)	66.6	80.2	85.7	91.7	94.8	97.8	100.0	101.0	101.2	100.8	102.7
Compensation per hour	(1)	(1)	36.2	43.0	58.3	77.6	85.5	92.5	100.0	108.6	119.2	131.6	144.4
Real compensation per hour	(1)	(1)	74.2	82.5	90.9	95.4	96.2	98.5	100.0	100.8	99.5	96.8	96.2
Unit labor cost	(1)	(1)	54.4	53.5	68.0	84.7	90.2	94.6	100.0	107.5	117.8	130.5	140.6
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	75.6	90.8	95.0	100.0	104.2	106.9	117.7	134.8
Implicit price deflator	(1)	(1)	54.5	56.1	66.3	81.6	90.4	94.7	100.0	106.4	114.1	126.1	138.6
Manufacturing:													
Output per hour of all persons	48.4	56.4	60.0	74.5	79.1	90.8	93.4	97.5	100.0	100.9	101.5	101.7	104.5
Compensation per hour	21.5	28.8	36.7	42.8	57.6	78.3	85.4	92.3	100.0	108.3	118.9	132.8	146.4
Real compensation per hour	54.0	65.1	75.1	82.3	88.8	93.8	96.2	98.3	100.0	100.6	99.2	97.7	97.5
Unit labor cost	42.4	51.0	61.1	57.5	72.7	84.1	91.5	94.6	100.0	107.4	117.1	130.6	140.0
Unit nonlabor payments	54.3	58.5	61.1	60.3	65.0	69.3	87.3	93.7	100.0	102.5	99.9	97.1	108.8
Implicit price deflator	48.8	53.2	61.1	61.0	70.5	79.8	90.3	94.4	100.0	106.0	112.0	120.8	130.8

[1] Not available.

r = revised.

27. Annual changes in productivity, hourly compensation, unit costs, and prices, 1971–81

Item	Year											Annual rate of change	
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1950-81	1960-81
Business sector:													
Output per hour of all persons	3.6	3.5	–r2.8	r–2.4	2.2	r3.3	2.4	0.6	–0.9	–0.7	1.8	r2.5	2.1
Compensation per hour	6.6	6.5	8.0	9.4	9.6	8.6	7.7	8.6	9.7	10.4	9.6	6.2	r7.3
Real compensation per hour	2.2	3.1	1.6	–1.4	0.5	2.6	1.2	0.9	–1.4	–2.8	–0.7	r2.4	r1.8
Unit labor cost	2.9	2.9	r5.3	r12.1	7.3	r5.1	5.1	8.0	10.7	11.2	7.7	3.6	5.0
Unit nonlabor payments	7.6	4.5	r5.9	r4.4	15.1	r4.0	8.4	6.7	5.7	5.8	13.3	r3.5	r4.7
Implicit price deflator	4.4	3.4	r5.5	r9.5	9.8	r4.7	5.6	7.5	9.0	9.4	9.5	r3.6	4.9
Nonfarm business sector:													
Output per hour of all persons	3.3	3.7	r2.4	r–2.5	r2.0	r3.2	2.2	0.6	–1.3	–0.9	1.4	r2.2	r1.9
Compensation per hour	6.6	6.7	7.6	9.4	9.6	8.1	7.5	8.6	9.3	10.2	9.7	5.9	7.0
Real compensation per hour	2.2	3.3	1.3	–1.4	0.4	2.2	1.0	0.9	–1.7	–2.9	–0.7	r2.1	1.5
Unit labor cost	3.2	2.9	r5.0	r12.2	7.5	r4.7	5.2	8.0	10.7	11.2	8.1	r3.6	5.0
Unit nonlabor payments	7.4	3.2	r1.3	r5.9	r16.7	r5.7	6.9	5.3	4.7	8.0	13.1	r3.5	r4.6
Implicit price deflator	4.5	3.0	r3.8	r10.2	r10.3	r5.0	5.7	7.1	8.8	10.2	9.7	3.6	4.9
Nonfinancial corporations:													
Output per hour of all employees	4.8	3.0	2.8	–3.4	3.4	3.2	2.3	1.0	0.2	–0.3	1.8	(1)	2.0
Compensation per hour	6.5	5.8	7.7	9.7	10.1	8.2	8.1	8.6	9.8	10.4	9.7	(1)	6.9
Real compensation per hour	2.1	2.5	1.4	–1.1	0.9	2.3	1.6	0.8	–1.3	–2.8	–0.6	(1)	1.4
Unit labor cost	1.6	2.8	4.9	13.6	6.5	4.9	5.7	7.5	9.6	10.7	7.8	(1)	4.8
Unit nonlabor payments	7.4	2.7	1.5	7.1	20.1	4.6	5.3	4.2	2.6	10.1	14.6	(1)	4.0
Implicit price deflator	3.5	2.8	3.8	11.4	10.9	4.8	5.6	6.4	7.2	10.5	10.0	(1)	4.5
Manufacturing:													
Output per hour of all persons	6.1	5.0	5.4	–2.4	2.9	4.4	2.5	0.9	0.7	0.2	2.8	2.6	r2.7
Compensation per hour	6.1	5.4	7.2	10.6	11.9	8.0	8.3	8.3	9.7	11.8	10.2	5.8	6.9
Real compensation per hour	1.8	2.0	0.9	–0.3	2.5	2.1	1.8	0.8	–1.4	–1.8	–0.2	2.0	1.4
Unit labor cost	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.4	9.0	11.6	7.2	3.1	4.1
Unit nonlabor payments	11.2	0.8	–3.3	–1.8	25.9	7.4	6.7	2.5	–2.6	–2.7	12.0	r2.1	r2.7
Implicit price deflator	3.1	0.5	0.3	9.0	13.1	4.6	6.0	6.0	5.7	7.8	8.4	2.8	r3.7

[1] Not available.

r = revised.

28. Quarterly indexes of productivity, hourly compensation, unit costs, and prices, seasonally adjusted

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1979	1980				1981				1982	
	1980	1981	IV	I	II	III	IV	I	II	III	IV	I	II
Business sector:													
Output per hour of all persons	98.9	100.7	99.1	99.3	98.2	98.9	99.3	100.7	100.7	101.0	100.2	100.0	r100.3
Compensation per hour	131.4	144.1	123.0	126.7	130.0	133.1	136.1	140.0	142.5	145.6	148.2	150.9	153.4
Real compensation per hour	96.7	96.0	97.8	97.0	96.4	96.9	96.2	96.2	96.4	95.7	95.6	96.5	97.1
Unit labor cost	132.9	143.1	124.1	127.6	r132.3	134.7	137.0	139.0	141.5	144.2	147.9	150.9	r153.0
Unit nonlabor payments	119.3	135.2	113.2	116.0	116.2	120.6	124.6	131.8	133.4	137.4	138.3	136.4	r137.3
Implicit price deflator	128.3	140.4	120.4	123.7	126.9	129.9	132.8	136.5	138.8	141.9	144.6	146.0	r147.7
Nonfarm business sector:													
Output per hour of all persons	98.5	99.9	98.8	98.7	97.6	98.4	99.2	100.4	100.0	100.0	99.1	99.2	r99.3
Compensation per hour	130.9	143.6	122.7	126.2	129.3	132.6	135.7	139.5	142.0	145.1	147.7	150.4	r152.6
Real compensation per hour	96.3	95.7	97.6	96.6	96.0	96.5	95.9	96.0	96.0	95.4	95.3	96.3	96.6
Unit labor cost	133.0	143.8	124.1	127.8	132.5	134.7	136.8	139.0	141.9	145.1	149.0	151.6	r153.7
Unit nonlabor payments	119.1	134.8	111.3	115.2	116.7	120.3	124.4	131.5	132.8	136.7	138.4	136.7	r137.4
Implicit price deflator	128.3	140.8	119.8	123.6	127.2	129.9	132.7	136.5	138.9	142.3	145.5	146.6	r148.2
Nonfinancial corporations:													
Output per hour of all employees	100.8	102.7	100.6	100.8	99.8	101.1	101.7	102.8	102.7	102.8	102.2	102.3	p102.9
Compensation per hour	131.6	144.4	123.1	126.8	130.0	133.4	136.3	140.4	142.7	145.7	148.6	151.7	p154.1
Real compensation per hour	96.8	96.2	97.9	97.0	96.4	97.1	96.3	96.5	96.5	95.8	95.9	97.1	p97.5
Total unit costs	131.0	143.4	121.4	125.0	130.4	132.9	135.8	138.3	141.7	144.7	149.1	151.8	p154.0
Unit labor cost	130.5	140.6	122.4	125.8	130.2	131.9	134.1	136.5	138.9	141.7	145.4	148.3	p149.7
Unit nonlabor costs	132.5	151.4	118.7	122.7	131.0	135.7	140.7	143.4	149.6	153.1	159.6	161.8	p166.2
Unit profits	87.9	101.6	84.1	91.1	81.9	87.8	90.5	104.7	98.8	105.2	97.6	86.1	p82.4
Implicit price deflator	126.1	138.6	117.1	121.1	124.8	127.7	130.6	134.5	136.8	140.2	143.2	144.3	p145.8
Manufacturing:													
Output per hour of all persons	101.7	104.5	101.9	102.6	100.4	100.3	103.6	105.2	105.0	105.0	102.8	102.1	r102.2
Compensation per hour	132.8	146.4	122.6	127.1	130.9	135.2	138.4	142.6	144.9	147.3	150.7	154.7	r157.6
Real compensation per hour	97.7	97.5	97.4	97.3	97.1	98.5	97.8	98.0	97.9	96.8	97.2	99.0	99.7
Unit labor cost	130.6	140.0	120.3	123.9	130.3	134.9	133.6	135.5	138.0	140.3	146.6	151.5	r154.3

[1] Not available.

r = revised.

p = preliminary.

29. Percent change from preceding quarter and year in productivity, hourly compensation, unit costs, and prices, seasonally adjusted at annual rate

[1977=100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	IV 1980 to I 1981	I 1981 to II 1981	II 1981 to III 1981	III 1981 to IV 1981	IV 1981 to I 1982	I 1982 to II 1982	I 1980 to I 1981	II 1980 to II 1981	III 1980 to III 1981	IV 1980 to IV 1981	I 1981 to I 1982	II 1981 to II 1982
Business sector:												
Output per hour of all persons	5.6	0.0	1.1	−2.9	−1.0	^{r}1.2	1.4	2.5	2.2	0.9	−0.7	^{r}−0.4
Compensation per hour	11.7	7.5	9.0	7.4	7.3	^{r}6.9	10.5	9.7	9.4	8.9	7.8	^{r}7.6
Real compensation per hour	0.2	0.5	−2.6	−0.4	3.9	^{r}2.2	−0.7	−0.1	−1.3	−0.6	0.3	^{r}0.7
Unit labor costs	5.7	7.5	7.8	10.6	8.4	^{r}5.6	8.9	6.9	7.1	7.9	8.6	^{r}8.1
Unit nonlabor payments	25.0	4.9	12.5	2.9	−5.4	^{r}2.7	13.7	14.8	13.9	11.0	3.5	^{r}3.0
Implicit price deflator	11.6	6.6	9.3	8.0	3.8	^{r}4.7	10.4	9.4	9.2	8.9	6.9	^{r}6.4
Nonfarm business sector:												
Output per hour of all persons	4.9	−1.3	−0.3	−3.5	0.6	^{r}0.5	1.7	2.5	1.6	−0.1	−1.1	^{r}−0.7
Compensation per hour	11.8	7.1	9.0	7.3	7.7	^{r}6.0	10.6	9.8	9.4	8.8	7.8	7.5
Real compensation per hour	0.4	0.1	−2.6	−0.5	4.3	^{r}1.4	−0.6	0.0	−1.2	−0.6	0.3	^{r}0.6
Unit labor costs	6.6	8.6	9.3	11.2	7.1	^{r}5.5	8.8	7.1	7.7	8.9	9.0	^{r}8.3
Unit nonlabor payments	24.9	4.0	12.1	5.1	−4.6	^{r}2.0	14.1	13.8	13.6	11.2	4.0	^{r}3.5
Implicit price deflator	12.1	7.1	10.2	9.2	3.3	^{r}4.4	10.4	9.2	9.6	9.6	7.4	^{r}6.7
Nonfinancial corporations:												
Output per hour of all employees	4.7	−0.4	0.3	−2.3	0.5	^{p}2.3	2.1	2.9	1.7	0.6	−0.5	^{p}2.3
Compensation per hour	12.4	6.9	8.5	8.3	8.6	^{p}6.4	10.7	9.8	9.2	9.0	8.1	^{p}6.4
Real compensation per hour	0.9	−0.1	−3.0	0.5	5.2	^{p}1.7	−0.5	0.1	−1.4	−0.5	0.6	^{p}1.7
Total unit costs	7.5	10.2	8.6	12.8	7.4	^{p}6.0	10.6	8.7	8.9	9.8	9.7	^{p}8.7
Unit labor costs	7.4	7.3	8.2	10.9	8.1	^{p}4.0	8.5	6.7	7.5	8.4	8.6	^{p}7.8
Unit nonlabor costs	8.0	18.5	9.8	17.8	5.7	^{p}11.4	16.9	14.2	12.9	13.4	12.8	^{p}11.1
Unit profits	79.5	−20.8	28.4	−25.9	−39.4	^{p}−16.0	14.9	20.7	19.7	7.9	−17.8	^{p}−16.6
Implicit price deflator	12.3	7.1	10.2	8.9	3.0	^{p}4.4	11.0	9.6	9.7	9.6	7.3	^{p}4.4
Manufacturing:												
Output per hour of all persons	6.3	−0.7	−0.1	−8.2	^{r}−2.4	^{r}0.2	2.6	4.5	4.7	−0.8	^{r}−2.9	^{r}−2.7
Compensation per hour	12.7	6.6	6.8	9.6	11.1	^{r}7.8	12.2	10.7	8.9	8.9	8.5	8.8
Real compensation per hour	1.2	−0.4	−4.6	1.6	7.6	^{r}3.1	0.8	0.9	−1.7	−0.6	1.0	1.8
Unit labor costs	6.0	7.3	6.8	19.4	^{r}13.9	^{r}7.7	9.3	5.9	4.0	9.8	^{r}11.7	^{r}11.8

[1] Not available.

r = revised.

WAGE AND COMPENSATION DATA

DATA FOR THE EMPLOYMENT COST INDEX are reported to the Bureau of Labor Statistics by a sample of 2,000 private nonfarm establishments and 750 State and local government units selected to represent total employment in those sectors. On average, each reporting unit provides wage and compensation information on five well-specified occupations.

Data on negotiated wage and benefit changes are obtained from contracts on file at the Bureau, direct contact with the parties, and secondary sources.

Definitions

The **Employment Cost Index** (ECI) is a quarterly measure of the average change in the cost of employing labor. The rate of total compensation, which comprises wages, salaries, and employer costs for employee benefits, is collected for workers performing specified tasks. Employment in each occupation is held constant over time for all series produced in the ECI, except those by region, bargaining status, and area. As a consequence, only changes in compensation are measured. Industry and occupational employment data from the 1970 Census of Population are used in deriving constant weights for the ECI. While holding total industry and occupational employment fixed, in the estimation of indexes by region, bargaining status, and area, the employment in those measures is allowed to vary over time in accord with changes in the sample. The rate of change (in percent) is available for wages and salaries, as well as for total compensation. Data are collected for the pay period including the 12th day of the survey months of March, June, September, and December. The statistics are neither annualized nor adjusted for seasonal influence.

Wages and salaries consist of earnings before payroll deductions, excluding premium pay for overtime, work on weekends and holidays, and shift differentials. Production bonuses, incentive earnings, commissions, and cost-of-living adjustments are included; nonproduction bonuses are included with other supplemental pay items in the benefits category; and payments-in-kind, free room and board, and tips are excluded. *Benefits* include supplemental pay, insurance, retirement and savings plans, and hours-related and legally required benefits.

Data on negotiated wage changes apply to private nonfarm industry collective bargaining agreements covering 1,000 workers or more. Data on compensation changes apply only to those agreements covering 5,000 workers or more. *First-year* wage or compensation changes refer to average negotiated changes for workers covered by settlements reached in the period and implemented within the first 12 months after the effective date of the agreement. *Changes over the life of the agreement* refer to all adjustments specified in the contract, expressed as an average annual rate. These measures exclude wage changes that may occur under cost-of-living adjustment clauses, that are triggered by movements in the Consumer Price Index. *Wage-rate changes* are expressed as a percent of straight-time hourly earnings; *compensation changes* are expressed as a percent of total wages and benefits.

Effective wage adjustments reflect all negotiated changes implemented in the reference period, regardless of the settlement date. They include changes from settlements reached during the period, changes deferred from contracts negotiated in an earlier period, and cost-of-living adjustments. The data also reflect contracts providing for no wage adjustment in the period. Effective adjustments and each of their components are prorated over all workers in bargaining units with at least 1,000 workers.

Notes on the data

The Employment Cost Index data series began in the fourth quarter of 1975, with the quarterly percent change in wages and salaries in the private nonfarm sector. Data on employer costs for employee benefits were included in 1980, to produce a measure of the percent change in employers' cost for employees' total compensation. State and local government units were added to the ECI coverage in 1981, providing a measure of total compensation change in the civilian nonfarm economy.

Data for the broad white-collar, blue-collar, and service worker groups, and the manufacturing, nonmanufacturing, and service industry groups are presented in the ECI. Additional occupation and industry detail are provided for the wages and salaries component of total compensation in the private nonfarm sector. For State and local government units, additional industry detail is shown for both total compensation and its wages and salaries component.

Historical indexes (June 1981 = 100) of the quarterly rates of changes presented in the ECI are also available.

For a more detailed discussion of the ECI, see chapter 25, "The Employment Cost Index," of the BLS *Handbook of Methods* (Bulletin 1910), and the *Monthly Labor Review* articles: "Employment Cost Index: a measure of change in the 'price of labor,'" July 1975; "How benefits will be incorporated into the Employment Cost Index," January 1978; and "The Employment Cost Index: recent trends and expansion," May 1982.

Additional data for the ECI and other measures of wage and compensation changes appear in *Current Wage Developments*, a monthly periodical of the Bureau.

30. Employment Cost Index

[June 1981 = 100]

Series	1980			1981				1982		Percent change	
										3 months ended	12 months ended
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	June 1982	
Civilian nonfarm workers[1]	—	—	—	—	100.0	102.6	104.5	106.3	107.5	1.1	7.5
Workers, by occupational group											
White-collar workers	—	—	—	—	100.0	102.7	104.9	106.5	107.7	1.1	7.7
Blue-collar workers	—	—	—	—	100.0	102.3	104.1	105.7	107.1	1.3	7.1
Service workers	—	—	—	—	100.0	102.8	104.2	107.2	108.3	1.0	8.3
Workers, by industry division											
Manufacturing	—	—	—	—	100.0	102.1	104.0	106.0	107.2	1.1	7.2
Nonmanufacturing	—	—	—	—	100.0	102.8	104.8	106.4	107.7	1.2	7.7
Services	—	—	—	—	100.0	104.4	107.1	108.2	109.2	.9	9.2
Public administration[2]	—	—	—	—	100.0	104.3	106.0	108.1	109.1	.9	9.1
Private nonfarm workers	90.7	92.8	94.7	98.1	100.0	102.0	104.0	105.8	107.2	1.3	7.2
Workers, by occupational group											
White-collar workers	90.8	92.6	94.5	98.3	100.0	101.8	104.0	105.8	107.2	1.3	7.2
Blue-collar workers	90.5	93.0	94.9	97.8	100.0	102.2	104.0	105.6	107.0	1.3	7.0
Service workers	90.8	92.7	94.3	99.3	100.0	101.9	103.1	106.7	107.9	1.1	7.9
Workers, by industry division											
Manufacturing	90.5	92.6	94.7	98.0	100.0	102.1	104.0	106.0	107.2	1.1	7.2
Nonmanufacturing	90.8	92.9	94.7	98.2	100.0	102.0	103.9	105.7	107.1	1.3	7.1
State and local government workers	—	—	—	—	100.0	105.3	107.4	108.8	109.3	.5	9.3
Workers, by occupational group											
White-collar workers	—	—	—	—	100.0	105.7	107.8	109.1	109.5	.4	9.5
Blue-collar workers	—	—	—	—	100.0	104.2	105.9	108.2	108.9	.6	8.9
Workers, by industry division											
Services	—	—	—	—	100.0	105.8	107.9	109.0	109.4	.4	9.4
Schools	—	—	—	—	100.0	106.0	107.9	108.9	109.1	.2	9.1
Elementary and secondary	—	—	—	—	100.0	106.3	108.3	109.3	109.5	.2	9.5
Hospitals and other services[3]	—	—	—	—	100.0	105.0	107.8	109.5	110.3	.7	10.3
Public administration[2]	—	—	—	—	100.0	104.3	106.0	108.1	109.1	.9	9.1

[1] Excludes household and Federal workers.

[2] Consists of legislative, judicial, administrative, and regulatory activities.

[3] Includes, for example, library, social, and health services.

NOTE: Dashes indicate data not available.

31. Employment Cost Index, wages and salaries, by occupation and industry group

[June 1981 = 100]

Series	1980			1981				1982		Percent change	
										3 months ended	12 months ended
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	June 1982	
Civilian nonfarm workers[1]	—	—	—	—	100.0	102.5	104.4	106.3	107.3	0.9	7.3
Workers, by occupational group											
White-collar workers	—	—	—	—	100.0	102.6	104.7	106.7	107.6	.8	7.6
Blue-collar workers	—	—	—	—	100.0	102.4	104.0	105.5	106.7	1.1	6.7
Service workers	—	—	—	—	100.0	102.5	103.6	106.8	107.9	1.0	7.9
Workers, by industry division											
Manufacturing	—	—	—	—	100.0	102.1	104.0	105.9	107.0	1.0	7.0
Nonmanufacturing	—	—	—	—	100.0	102.7	104.5	106.5	107.5	.9	7.5
Services	—	—	—	—	100.0	104.4	108.6	108.6	109.5	.8	9.5
Public administration[2]	—	—	—	—	100.0	103.8	105.5	107.5	108.4	.8	8.4
Private nonfarm workers	91.5	93.5	95.4	98.0	100.0	102.0	103.8	105.9	107.1	1.1	7.1
Workers, by occupational group											
White-collar workers	91.4	93.3	95.2	98.1	100.0	101.8	103.9	106.2	107.3	1.0	7.3
Professional and technical workers	90.8	93.2	95.3	98.2	100.0	103.3	105.5	108.0	109.4	1.3	9.4
Managers and administrators	92.0	93.5	94.7	98.6	100.0	101.6	102.8	105.8	107.2	1.3	7.2
Salesworkers	90.7	92.2	94.8	96.2	100.0	98.0	101.9	102.2	101.8	−.4	1.8
Clerical workers	91.9	93.8	95.7	98.6	100.0	102.7	104.2	107.0	108.3	1.2	8.3
Blue-collar workers	91.6	93.8	95.7	97.7	100.0	102.3	103.9	105.4	106.6	1.1	6.6
Craft and kindred workers	91.4	94.0	96.1	97.8	100.0	102.9	104.3	106.2	107.6	1.3	7.6
Operatives, except transport	91.5	93.6	95.5	97.8	100.0	102.1	104.1	105.4	106.6	1.1	6.6
Transport equipment operatives	92.2	93.5	95.3	96.8	100.0	101.0	102.7	103.2	104.1	.9	4.1
Nonfarm laborers	91.8	93.9	95.7	97.5	100.0	101.5	103.3	104.1	105.1	1.0	5.1
Service workers	91.9	93.4	94.8	99.2	100.0	101.8	102.7	106.7	107.9	1.1	7.9
Workers, by industry division											
Manufacturing	91.8	93.6	95.7	97.9	100.0	102.1	104.0	105.9	107.0	1.0	7.0
Durables	91.2	93.5	95.7	97.9	100.0	102.1	104.5	106.3	107.4	1.0	7.4
Nondurables	92.7	93.8	95.7	97.8	100.0	102.0	103.1	105.3	106.3	.9	6.3
Nonmanufacturing	91.3	93.4	95.2	98.1	100.0	102.0	103.8	105.9	107.1	1.1	7.1
Construction	91.9	94.5	95.9	97.6	100.0	103.0	104.3	105.9	107.3	1.3	7.3
Transportation and public utilities	90.2	93.1	95.6	97.7	100.0	102.0	103.6	105.7	106.9	1.1	6.9
Wholesale and retail trade	92.2	93.6	95.1	98.2	100.0	101.3	102.3	103.9	105.8	1.8	5.8
Wholesale trade	92.1	93.0	95.9	98.5	100.0	102.0	103.4	106.3	108.9	2.4	8.9
Retail trade	92.2	93.8	94.8	98.1	100.0	101.0	101.9	103.0	104.5	1.5	4.5
Finance, insurance, and real estate	89.4	91.2	93.1	95.7	100.0	98.3	102.3	103.7	102.4	−1.3	2.4
Services	91.9	94.2	95.7	99.6	100.0	103.6	105.8	108.8	110.0	1.1	10.0
State and local government workers	—	—	—	—	100.0	105.0	107.0	108.2	108.7	.5	8.7
Workers, by occupational group											
White-collar workers	—	—	—	—	100.0	105.4	107.5	108.5	108.9	.4	8.9
Blue-collar workers	—	—	—	—	100.0	103.9	105.5	107.5	107.9	.4	7.9
Workers, by industry division	—	—	—								
Services				—	100.0	105.5	107.6	108.4	108.8	.4	8.8
Schools	—	—	—	—	100.0	105.7	107.7	108.3	108.5	.2	8.5
Elementary and secondary	—	—	—	—	100.0	106.0	107.9	108.7	108.8	.1	8.8
Hospitals and other services[3]	—	—	—	—	100.0	104.6	107.3	108.8	109.5	.6	9.5
Public administration[2]	—	—	—	—	100.0	103.3	105.5	107.5	108.4	.8	8.4

[1] Excludes household and Federal workers.

[2] Consists of legislative, judicial, administrative, and regulatory activities.

[3] Includes, for example, library, social, and health services.

NOTE: Dashes indicate data not available.

32. Employment Cost Index, private nonfarm workers, by bargaining status, region, and area size

[June 1981 = 100]

Series	1980			1981				1982		Percent change	
										3 months ended	12 months ended
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	June 1982	
COMPENSATION											
Workers, by bargaining status[1]											
Union	89.7	92.4	94.7	97.6	100.0	102.5	104.8	106.5	108.4	1.8	8.4
Manufacturing	—	—	—	—	100.0	102.3	104.6	106.3	108.0	1.6	8.0
Nonmanufacturing	—	—	—	—	100.0	102.7	105.0	106.8	108.7	1.8	8.7
Nonunion	91.1	92.8	94.6	98.4	100.0	101.7	103.5	105.3	106.5	1.1	6.5
Manufacturing	—	—	—	—	100.0	101.8	103.5	105.7	106.6	.9	6.6
Nonmanufacturing	—	—	—	—	100.0	101.7	103.5	105.2	106.4	1.1	6.4
Workers, by area size[1]											
Metropolitan areas	90.6	92.8	94.7	98.1	100.0	102.1	104.1	105.7	107.2	1.4	7.2
Other areas	90.3	91.9	94.2	98.1	100.0	101.8	105.2	106.2	107.0	.8	7.0
WAGES AND SALARIES											
Workers, by bargaining status[1]											
Union	90.8	93.5	95.8	97.4	100.0	102.7	105.0	106.5	108.1	1.5	8.1
Manufacturing	91.3	93.8	96.1	97.7	100.0	102.6	104.7	105.9	107.3	1.3	7.3
Nonmanufacturing	90.4	93.1	95.5	97.1	100.0	102.8	105.2	107.0	108.8	1.7	8.8
Nonunion	91.8	93.4	95.1	98.2	100.0	101.6	103.2	105.6	106.5	.8	6.5
Manufacturing	92.3	93.4	95.4	97.9	100.0	101.7	103.3	105.9	106.7	.8	6.7
Nonmanufacturing	91.5	93.4	95.0	98.3	100.0	101.6	103.2	105.5	106.4	.9	6.4
Workers, by region[1]											
Northeast	92.5	94.2	96.0	98.3	100.0	101.7	104.4	106.1	106.7	.6	6.7
South	91.4	93.2	94.9	98.0	100.0	101.9	102.8	105.7	107.4	1.6	7.4
North Central	91.6	93.3	95.3	98.1	100.0	101.6	103.3	104.7	106.1	1.3	6.1
West	90.4	93.5	95.3	97.9	100.0	103.2	105.1	107.9	108.6	.6	8.6
Workers, by area size[1]											
Metropolitan areas	91.4	93.5	95.4	97.9	100.0	102.1	104.0	105.9	107.1	1.1	7.1
Other areas	91.5	92.9	95.1	98.3	100.0	101.8	103.1	106.0	106.8	.8	6.8

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[1] The indexes are calculated differently from those for the occupation and industry groups. For a detailed description of the index calculation, see BLS *Handbook of Methods*, Bulletin 1910.

33. Wage and compensation change, major collective bargaining settlements, 1977 to date

[In percent]

Measure	Annual average					Quarterly average								
						1980			1981				1982p	
	1977	1978	1979	1980	1981	II	III	IV	I	II	III	IV	I	II
Total compensation changes covering 5,000 workers or more, all industries:														
First year of contract	9.6	8.3	9.0	10.4	10.2	10.2	11.4	8.5	7.7	11.6	10.5	11.0	1.9	2.1
Annual rate over life of contract	6.2	6.3	6.6	7.1	8.3	7.4	7.2	6.1	7.2	10.8	8.1	5.8	1.2	1.6
Wage rate changes covering at least 1,000 workers, all industries:														
First year of contract	7.8	7.6	7.4	9.5	9.8	9.1	10.5	8.3	7.1	11.8	10.8	9.0	3.0	2.9
Annual rate over life of contract	5.8	6.4	6.0	7.1	7.9	7.3	7.4	6.5	6.2	9.7	8.7	5.7	2.8	2.7
Manufacturing:														
First year of contract	8.4	8.3	6.9	7.4	7.2	8.7	8.4	7.8	6.4	8.2	9.0	8.6	2.5	1.3
Annual rate over life of contract	5.5	6.6	5.4	5.4	6.1	5.1	5.6	5.8	5.5	6.7	7.5	5.4	2.7	1.2
Nonmanufacturing (excluding construction):														
First year of contract	8.0	8.0	7.6	9.5	9.8	10.3	9.5	8.2	9.0	11.8	8.6	9.6	2.6	6.5
Annual rate over life of contract	5.9	6.5	6.2	6.6	7.3	8.5	5.9	6.8	7.3	9.1	7.2	5.6	2.1	5.7
Construction:														
First year of contract	6.3	6.5	6.8	13.6	13.5	12.2	15.4	14.3	11.4	12.9	16.4	11.4	9.1	5.8
Annual rate over life of contract	6.3	6.2	6.3	11.5	11.3	10.4	13.0	12.0	10.3	11.1	12.4	11.7	8.9	6.0

p=preliminary.

34. Effective wage adjustments in collective bargaining units covering 1,000 workers or more, 1977 to date

Measure	Year					Year and quarter								
						1980			1981				1982p	
	1977	1978	1979	1980	1981	II	III	IV	I	II	III	IV	I	II
Average percent adjustment (including no change):														
All industries	8.0	8.2	9.1	9.9	9.5	3.3	3.5	1.3	1.7	3.2	3.3	1.5	1.0	1.9
Manufacturing	8.4	8.6	9.6	10.2	9.4	3.4	2.9	1.7	2.3	2.4	3.1	1.9	.9	.9
Nonmanufacturing	7.6	7.9	8.8	9.7	9.5	3.2	4.0	1.1	1.2	3.8	3.4	1.1	1.0	2.6
From settlements reached in period	3.0	2.0	3.0	3.6	2.5	1.0	1.7	.5	.4	1.1	.5	.4	.2	.3
Deferred from settlements reached in earlier period	3.2	3.7	3.0	3.5	3.8	1.4	1.2	.3	.5	1.4	1.5	.4	.6	1.3
From cost-of-living clauses	1.7	2.4	3.1	2.8	3.2	.8	.7	.6	.7	.7	1.2	.6	.3	.2
Total number of workers receiving wage change (in thousands)[1]	—	—	—	—	8,646	—	—	—	3,855	4,701	4,364	3,225	2,855	3,359
From settlements reached in period	—	—	—	—	2,270	—	—	—	579	968	540	604	198	407
Deferred from settlements reached in earlier period	—	—	—	—	6,267	—	—	—	888	2,055	3,023	882	1,038	1,629
From cost-of-living clauses	—	—	—	—	4,583	—	—	—	2,638	2,689	2,934	2,178	1,960	1,486
Number of workers receiving no adjustments (in thousands)	—	—	—	—	145	—	—	—	4,937	4,092	4,428	5,568	5,767	5,364

[1] The total number of workers who received adjustments does not equal the sum of workers that received each type of adjustment, because some workers received more than one type of adjustment during the period.

p—preliminary.

WORK STOPPAGE DATA

Work Stoppages include all known strikes or lockouts involving 1,000 workers or more and lasting a full shift or longer. Data are based largely on newspaper accounts and cover all workers idle one shift or more in establishments directly involved in a stoppage. They do not measure the indirect or secondary effect on other establishments whose employees are idle owing to material or service shortages.

Estimates of days idle as a percent of estimated working time measures only the impact of larger strikes (1,000 workers or more). Formerly, these estimates measured the impact of strikes involving 6 workers or more; that is, the impact of virtually *all* strikes. Due to budget stringencies, collection of data on strikes involving 6 workers or more was discontinued with the December 1981 data.

35. Work stoppages involving 1,000 workers or more, 1947 to date

Month and year		Number of stoppages		Workers involved		Days idle	
		Beginning in month or year	In effect during month or year	Beginning in month or year (in thousands)	In effect during month (in thousands)	Number (in thousands)	Percent of estimated working time
1947		270	....	1,629	....	25,720	
1948		245	....	1,435	....	26,127	.22
1949		262	....	2,537	....	43,420	.38
1950		424	....	1,698	....	30,390	.26
1951		415	....	1,462	....	15,070	.12
1952		470	....	2,746	....	48,820	.38
1953		437	....	1,623	....	18,130	.14
1954		265	....	1,075	....	16,630	.13
1955		363	....	2,055	....	21,180	.16
1956		287	....	1,370	....	26,840	.20
1957		279	....	887	....	10,340	.07
1958		332	....	1,587	....	17,900	.13
1959		245	....	1,381	....	60,850	.43
1960		222	....	896	....	13,260	.09
1961		195	....	1,031	....	10,140	.07
1962		211	....	793	....	11,760	.08
1963		181	....	512	....	10,020	.07
1964		246	....	1,183	....	16,220	.11
1965		268	....	999	....	15,140	.10
1966		321	....	1,300	....	16,000	.10
1967		381	....	2,192	....	31,320	.18
1968		392	....	1,855	....	35,567	.20
1969		412	....	1,576	....	29,397	.16
1970		381	....	2,468	....	52,761	.29
1971		298	....	2,516	....	35,538	.19
1972		250	....	975	....	16,764	.09
1973		317	....	1,400	....	16,260	.08
1974		424	....	1,796	....	31,809	.16
1975		235	....	965	....	17,563	.09
1976		231	....	1,519	....	23,962	.12
1977		298	....	1,212	....	21,258	.10
1978		219	....	1,006	....	23,774	.11
1979		235	....	1,021	....	20,409	.09
1980		187	....	795	....	20,844	.09
1981		145	....	729	....	16,908	.07
1981:	January	6	12	12.0	29.6	257.9	.01
	February	7	10	10.7	20.9	118.5	.01
	March	16	20	201.6	207.8	861.8	.04
	April	17	27	48.0	223.5	4,085.2	.20
	May	18	27	85.1	259.0	4,454.0	.24
	June	30	43	200.1	415.1	2,618.3	.13
	July	23	38	80.1	125.4	1,575.5	.08
	August	9	17	36.2	86.6	1,017.9	.05
1982 p:	January	2	4	6.1	11.4	199.9	.01
	February	2	6	2.5	13.9	236.9	.01
	March	3	8	8.3	21.3	352.2	.02
	April	9	16	35.7	55.3	480.3	.02
	May	14	21	43.7	60.3	636.1	.03
	June	17	25	41.4	64.5	894.0	.04
	July	11	22	37.3	63.2	651.9	.04
	August	14	23	40.2	59.1	779.0	.04

p = preliminary.

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U.S. Department of Labor
Bureau of Labor Statistics

November 1982

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Labor Month In Review

EARNINGS GAP. Commissioner of Labor Statistics Janet L. Norwood was the opening witness at congressional hearings exploring pay differences between women and men. Here are excerpts from the commissioner's testimony.

In 1939, median earnings for women who worked year round, full time were 58 percent of the median earnings for men. Similar figures for 1981, the latest period for which earnings over an entire year are available, show women's earnings at 59 percent of the median for men. Over the long term, the ratio has remained relatively unchanged.

The Current Population Survey data on weekly earnings show a similar ratio. The most recent figures for the second quarter of this year show median weekly earnings for full-time wage and salary workers were $370 for men and $240 for women, or 65 percent of men's earnings. Comparable figures 10 years ago were $168 for men and $106 for women, a 63-percent ratio.

Educational influence. For women as well as men, more years of schooling usually translate to higher annual earnings. Median earnings for women college graduates who worked all year at full-time jobs were 45 percent more than for women whose formal education terminated with high school graduation, and 80 percent more than for those who had not completed high school. For men, the proportions were similar. However, at every level of educational achievement, women's median earnings continued to lag far behind men's earnings. On average, whether college graduates or high school dropouts, women earned about 60 cents for every dollar their male counterparts were paid.

This 60-percent ratio in the national aggregate data shows a female-male wage gap of about 40 percent.

Human capital influence. A large body of "human-capital" research is available. Many of these studies focus on characteristics of individual workers such as age, years of schooling, labor force experience, and so forth. A review of this research by a recent National Academy of Sciences panel shows that in the studies reviewed, worker characteristics account for at most 44 percent of the female-male earnings gap.

These estimates are somewhat sensitive, of course, to the accuracy with which the characteristics are measured. In particular, years of labor force experience are usually approximated by calculating experience as the number of years since the completion of schooling. For persons with interruptions in their work experience—which includes more women than men— experience estimated in this way will be overstated. The measurement of this factor alone has been the subject of a number of studies (not all of which agree with each other) in the past 10 years.

Two BLS economists, Wesley Mellow and B. K. Atrostic, have found that, when a different measure more nearly approximating actual work experience is used while holding unchanged other characteristics, the estimated female-male wage gap is reduced by about 7 percentage points.

A fairly consistent finding from many studies of microdata is that the estimated female wage gap is reduced—but not eliminated—as more economic and demographic factors are introduced into the analysis. Another recent study by Mellow, for example, estimates the female-male wage gap at 27 percent when the following variables are held constant: area, occupation, industry, union, part-time status, and estimated labor force experience.

Occupational influence. In addition to the "human capital" that individual workers bring to their jobs, it is quite evident that earnings are highly correlated with the occupation and the industry in which a worker is employed. And we know that working women are far more concentrated in generally low-paying occupations in low-paying industries.

Recent CPS median earnings data (for the second quarter of 1982) show that in the female-intensive clerical field, women working full time earned $236 a week, compared with $337 for men. At 70 percent, the current ratio of women's to men's median earnings was practically the same as it was 10 years ago. But women clerical workers are far more likely to be in lower paying groups of the occupations, such as secretaries, typists, cashiers, and bookkeepers.

The same sort of pattern emerges when we look at both ends of the pay spectrum for men and women. A recent study by BLS demographer Nancy Rytina examines wage and salary earnings in 250 occupations. Seven of the twenty lowest paying occupational groups were the same for both men and women: farm laborers, food service workers, cashiers, waiters and waitresses, cooks, nurses' aides and orderlies, and bartenders. The female-male earnings ratios in these occupations ranged from 72 percent for waiters and waitresses to 92 percent for cashiers. With the exception of farm laborers and bartenders, all of these occupations were both female intensive and relatively low paying.

When we compare median earnings for the high-paying occupations which men and women hold in common, we find that median earnings of women are substantially less than for men.

The pay differences between men and women in [high-paying] occupations tend to be somewhat greater than among men and women in low-paying jobs. The median earnings ratios ranged from 64 percent for personnel and labor relations workers (the greatest difference) to 82 percent among operations and systems analysts (the smallest difference).

Commissioner Norwood's full testimony appears in BLS Report 673, *The Female-Male Earnings Gap: A Review of Employment and Earnings Issues.* Single copies are available without charge from BLS Inquiries and Correspondence Section, 441 G St. N.W. Washington, D.C. 20212. ☐

Labor force data from the CPS to undergo revision in January 1983

BLS statistics in 1983 will include members of the Armed Forces stationed in the U.S. and will drop classification of workers as 'blue collar' or 'white collar,' substituting a new occupational system

JOHN E. BREGGER

Beginning with data for January 1983, the Bureau of Labor Statistics will make changes in presentation, classification, and estimating procedures in labor force data derived from the Current Population Survey (CPS). This article reports on the nature of and reasons for the changes.

In any economic time series, there is an inevitable conflict between the need for maintaining a consistent data series for historical analysis and the need to introduce change to reflect new concepts and definitions or improvements in survey operations. It is the practice of the Bureau of Labor Statistics, whenever changes become necessary, to introduce them with full explanations, including the reasons for undertaking them and a description of their impact. Moreover, to the maximum extent possible, historical data are revised in order to maintain temporal consistency.

The CPS is one of the most valuable sources of economic time series data, having provided essentially consistent measures of the labor force status of the civilian population for more than 40 years. In addition to aggregate measures of economic performance, data collected and published monthly include a rich array of demographic, occupational, and industrial detail, allowing for many cross-classifications.[1] CPS changes have resulted from such events as the availability of data from the most recent decennial census; recommendations by commissions appointed to review the survey and its underlying concepts; and improvements in such areas as survey design, questionnaire content, and industry or occupational classification systems. The most recent change was the introduction of 1980 census population figures into estimation procedures.[2]

Several other changes in the CPS are also planned for the 1980's. Of major significance is a comprehensive redesign of the entire sample—a process that occurs after every decennial census—and a possible revision in the CPS questionnaire. In the more immediate future, there are four separate modifications that will become effective with January 1983 data. These are:

- Persons in the Armed Forces stationed in the United States will be included in the national labor force and employment totals and thus in the base for the overall unemployment rate.
- All occupational detail in the CPS will be coded according to the classification system developed for the 1980 decennial census, which evolved from the 1980 Standard Occupational Classification system (SOC).
- In terms of racial classification, data will be published for the "black" group instead of for the broader "black and other" category.
- Revised "first-stage ratio estimates" based on the 1980 Census of Population and Housing will be introduced into the estimation procedures.

These changes affect the data in different ways. The first and third relate to data presentation, the second is

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one of classification, and the last one updates the estimating procedures. The nature and potential impact of these changes are discussed below.

Resident Armed Forces

Over a 14-month period during 1978–79, a presidentially appointed, congressionally mandated panel of experts convened to examine "procedures, concepts, and methodology involved in employment and unemployment statistics and suggesting ways and means of improving them."[3] Known as the National Commission on Employment and Unemployment Statistics, this nine-member panel made many recommendations for improving the Nation's labor force statistics (in its final report, *Counting the Labor Force*).[4] One of these recommendations was to treat members of the Armed Forces stationed in the United States as "employed" in national statistics, because joining the military was (and still is) voluntary and thus represents a viable job market alternative.[5] This recommendation was subsequently accepted by Secretary of Labor Raymond Donovan in his final report on the Commission's recommendations.[6]

At present, there are nearly 1.7 million persons in the Armed Forces stationed in the United States, out of a total of 2.2 million. In keeping with the Commission's recommendation, effective with January 1983 data, they will be included in the totals for labor force and employment and thus affect the calculation of the overall unemployment rate as well. Also, separate data for all men and women 16 years and over will include the resident Armed Forces counts. Data for all other worker groups, such as for specific age-sex groups and racial detail, will continue to be on a civilian basis only, because, although data for the resident Armed Forces total and for both sexes are available from the Department of Defense as far back as 1950, there is considerably less information available for individual age groups and by race. Consistency over time will be maintained through revision of historical totals back to 1950 and otherwise by sustaining all civilian data series.

In addition to increasing the magnitudes of the labor force and total employment, the addition of the resident Armed Forces will also reduce the overall unemployment rate—contrasted with the civilian labor force-based measure—although by only one- or two-tenths of a percentage point. For example, the 1981 annual average unemployment rate will be 7.5 percent, compared with the civilian-based 7.6 rate. The total rate for men will be reduced by one- to three-tenths of a point, depending on rounding, whereas the women's rate typically will be unaffected.

New occupational classifications

In 1977, following a lengthy period of careful examination by many experts in the field of occupational classification, the first edition of a standardized classification system of occupations was introduced.[7] Whereas such a system has long existed for industries, this was the first for occupations. Among other things, the Standard Occupational Classification (SOC) was "designed for use in statistical analysis and presentation about occupations,"[8] and it also served to reconcile heretofore diverse classification systems, such as the Census system and Dictionary of Occupational Titles. The SOC was revised somewhat in 1980, to take into account the comments of users resulting from the issuance of the 1977 manual and to "assure that the Bureau of the Census could incorporate the changes as part of its tabulation program for the 1980 census."[9] The Census Bureau adapted the SOC for use in the 1980 census. This SOC-Census hybrid represents a comprehensive revamping of the occupational classification system used for prior censuses as well as that currently in the CPS, in that much of the nomenclature and recognizable groupings have been completely revised.

Because of the conversion of occupational classification for the 1980 census, it was clear that the revised classification had to be introduced into the CPS as soon as possible, and January 1983 has been chosen as the effective date. The change will be dramatic. Such commonly used identifiers as white-collar and blue-collar and professional and technical, craftworkers, and operatives will disappear. Moreover, so many classification changes will occur that reconstruction of these groupings will be equally impossible. Thus, there will be no long-term consistent time series for large occupational groupings, and seasonal adjustment cannot be undertaken for several years.

Exhibit 1 presents old and new occupational titles at the broadest and second broadest aggregations.[10] Based on the groupings shown, one might conclude that SOC titles could be combined so as to retain the white-collar and blue-collar categories; but this is not being done for a variety of reasons. For one, although not specifically stated, the framers of the SOC had explicitly intended to finally purge these titles because of the favorable impression given by "white-collar" versus the more pejorative notion of "blue-collar." In reality, some parts of the old clerical and sales occupations were considerably below both of the other white-collar as well as some blue-collar groups—in terms of earnings or prestige. Another misleading aspect of both white- and blue-collar categories in the present census classification system is the unevenness and largely misunderstood aspects of each; among other things, they are incorrectly assumed by many to exhaust occupational coverage (there are also the service and farm groupings). Finally, while it might appear that the first two categories in the "broad grouping" of the modified SOC correspond to white-collar and the fourth and fifth to blue-collar, the specific

Exhibit 1. A comparison of 1980 decennial census occupational nomenclature to be used in 1983 with the 1970 census system

Broadest groupings

New	*Pre-1983*
Managerial and professional specialty	White-collar
Technical, sales, and administrative support	Blue-collar
Service	Service
Precision production, craft, and repair	Farm
Operators, fabricators, and laborers	
Farming, forestry, and fishing	

Major occupational groups

New	*Pre-1983*
Executive, administrative, and managerial	Professional and technical
Professional specialty	Managers and administrators, except farm
Technicians and related support	Sales
Sales	Clerical
Administrative support, including clerical	Craft and kindred
Private household	Operatives, except transport
Protective service	Transport equipment operatives
Service, except private household and protective service	Nonfarm laborers
Precision production, craft, and repair	Private household
Machine operators, assemblers, and inspectors	Other service workers
Transportation and material moving	Farmers and farm managers
Handlers, equipment cleaners, helpers and laborers	Farm laborers and supervisors
Farming, forestry, and fishing	

content of the various component occupations have been changed so that the data would not match.

In an effort to mitigate the inescapable problems that will ensue from introducing a totally new occupational classification system into the CPS, the Census Bureau is coding 20 percent of the monthly records for 1982 on the new system. This will permit a limited crosswalk between the two systems through a matrix of the broad groupings shown in exhibit 1. The more desirable matrix of the present 428 three-digit occupations with the comparable grouping of 503 in the SOC-Census hybrid will not be operationally feasible.

BLS will initiate publication of the new occupational data in *The Employment Situation* press release for January 1983 and in the February 1983 issue of *Employment and Earnings*; the latter is also expected to contain a rundown on some of the impacts on CPS occupational data. Whereas comparison of data with the past, to include a continuation of trends, will not be possible, it is felt that the vast improvements brought about through the availability of a universal classification system will greatly outweigh these problems as time goes by.

Conversion to black only data

Traditionally, racial data have been presented for two groups, "white" and "black and other" (formerly termed "nonwhite"). Historically, blacks have predominated the latter category—more than 92 percent of the black and other population in the 1960 census and 89 percent in 1970—such that the "black and other" group was deemed to portray adequately the situation among blacks. But in recent years the population of the "other" group—mostly Asian and Pacific Islanders, American Indians, and Alaskan natives—has been expanding at a greater pace, and, by the 1980 census, the black proportion of the "nonwhite" population had dropped to 85 percent. Moreover, labor market and other characteristics vary considerably by race. For example, in 1981, the annual average unemployment rate for blacks was 15.6 percent, compared with 14.2 percent for black and other; the other races rate was significantly lower.

In view of the lower proportion of blacks within the black and other population, which has resulted in a situation whereby the larger group is now less representative of the status for blacks, it is fitting that the presentation of these statistics be converted to black (only). This has already been accomplished on a limited basis, with the publication of the major employment status categories by age and sex for blacks in *The Employment Situation* press release in 1982. Beginning in 1983, there will be a more comprehensive conversion, as all published tables containing racial data will show "black" instead of "black and other" statistics. The other races classification is too small—and is not controlled to independent population weights in the estimation process—to meet reliability standards for publication. (Data for the group can be ascertained through subtraction.) Data for blacks are available back to 1972 and can be provided to interested users upon request. At the same time, BLS will retain the capacity to produce data for the "black and other" group.

Revision of first-stage ratio estimator

Information from the decennial population censuses figure prominently in the CPS design and estimating procedures. To begin with, the censuses form the basis for the sample design and selection for the ensuing 10 years after the census materials become available. Moreover, the population estimates carried forward from the censuses are used as weights to which the sample estimates are "blown up" to represent the Nation. As indicated earlier, the weights based on the 1980 census population figures were introduced into the CPS effective with January 1982 data; technically, this weighting occurs in what is known as the "second-stage ratio estimate" and is done for each of 64 age-sex-race groups making up the population 16 years of age and over. There is also a "first-stage ratio estimate," which has continued to be based on the 1970 census. Effective with data for January 1983, data from the 1980 census will be used in the development of first-stage ratio estimates as well.[11]

The first-stage adjustment concerns that portion of the 629 sample areas that have been chosen to represent other areas not in the sample—the remainder represent themselves. These "nonself-representing" areas are adjusted so as to correct for differences existing at the time of the most recent census between the distribution by race and residence of the population in these areas and the known race-residence distribution in the portions of the census region or State represented by these areas. The procedure is applied at two geographic levels: by region—Northeast, North Central, South, and West—and for each of the 46 States that contain nonsample areas. The regional adjustment is performed by metropolitan-nonmetropolitan residence and race, while the State adjustment is done by urban-rural status and race. The introduction of the 1980 census information for regions and States could well produce a "bump" (break in series) in some of the estimates. The nature and extent of any discontinuity will not be known until the time of the introduction of the revised first-stage factors but will clearly be quite small vis-a-vis the effect of the 1980 census-based second-stage factors.[12] Indeed, it is possible that the effects will be limited to internal estimations, such as farm-nonfarm and metropolitan-nonmetropolitan data, while not affecting broader totals. Again, any impacts will be described in a special article devoted to the changes being introduced into the January 1983 CPS, that will appear in the February 1983 issue of *Employment and Earnings.*

IN SUMMARY, there will be four distinctly separate changes introduced into the 1983 CPS that will affect the data. One change—adding the resident Armed Forces to the statistics—was recommended by the National Commission on Employment and Unemployment Statistics, which also acknowledged the necessity for the second change discussed—the revision of all occupational data based on the Standard Occupational Classification system.[13] The third change—publishing data for "black" instead of "black and other" workers—relates to data presentation rather than revision but is very important in terms of usage. The final change—revising the first-stage ratio estimates—is technical and results from the availability of information from the 1980 decennial census. All changes are made so as to improve either the basic data or enhance our use and understanding of the data. □

FOOTNOTES

[1] The primary compendium of monthly, quarterly, and annual data is the BLS publication *Employment and Earnings.* The explanatory notes section in the back of each issue describes the survey and nature of the data collected.

[2] See Kenneth D. Buckley, Jennifer Marks, and Ronald J. Statt, "Revisions in the Current Population Survey Beginning in January 1982," *Employment and Earnings,* February 1982, pp. 7–15, and Deborah Pisetzner Klein, "Labor force data: the impact of the 1980 census," *Monthly Labor Review,* July 1982, pp. 39–43.

[3] See Section 13, Public Law 94–444, 94th Cong., H.R. 12987, Oct. 1, 1976, reprinted in John E. Bregger, "Establishment of a new Employment Statistics Review Commission," *Monthly Labor Review,* March 1977, pp. 14–20.

[4] National Commission on Employment and Unemployment Statistics, *Counting the Labor Force* (Washington, D.C., U.S. Government Printing Office, Labor Day 1979).

[5] *Counting,* pp. 49–51. The resident Armed Forces was recommended over the more commonly used figures for the Armed Forces total in order to maintain consistency with the civilian employed, which excludes U.S. residents with jobs in foreign countries.

[6] See *Final Report of the Secretary of Labor on the Recommendations of the National Commission on Employment and Unemployment Statistics,* transmitted to the Congress in October 1981.

[7] U.S. Department of Commerce, Office of Federal Statistical Policy and Standards, *Standard Occupational Classification Manual,* 1977 (Washington, D.C., U.S. Government Printing Office).

[8] *Classification Manual,* 1977, p. 3.

[9] U.S. Department of Commerce, Office of Federal Statistical Policy and Standards, *Standard Occupational Classification Manual,* 1980 (Washington, D.C., U.S. Government Printing Office).

[10] *Classification Manual,* 1980, p. 10. It should be emphasized that the SOC manual does not itself provide either the 6- or 13-group dichotomies, though a variant of the 6-group is suggested. Indeed, the smallest breakdown presented has 20 civilian categories (see pp. 18–30 in the manual), many of which were formerly in the "professional and technical" category. These groupings were chosen by the BLS and Census Bureau for purposes of clarity in instances where it is not possible or desirable to present data at more detailed levels.

[11] The ratio estimation procedures, as developed based on the 1970 census, are described in U.S. Department of Commerce, Bureau of the Census, Technical Paper 40, *The Current Population Survey—Design and Methodology* (Washington, D.C., U.S. Government Printing Office, 1978), pp. 58–61.

[12] Buckley and others, *Revisions,* and Klein, *Labor force data.*

[13] National Commission on Employment and Unemployment Statistics, *Counting,* pp. 113–14.

Better measures of service employment goal of Bureau survey redesign

The volatility and small size of companies, coupled with nontraditional payroll practices, complicate efforts to develop more reliable data on employment, earnings, and hours of work

THOMAS J. PLEWES

The problem of measuring economic activity in the growing service-producing sector of the economy has posed an acute and continuing challenge to those agencies responsible for providing economic data. The service sector is characterized by diverse activities loosely aggregated under the service-producing classification; by a large number of preponderantly small companies that enter and exit the market with some frequency; and, consequently, by a unique set of problems associated with identification, classification, collection, and estimation of economic information.

This article focuses on the challenges in measuring employment, hours, and earnings in this large and dynamic sector of the economy. First, historical trends in the composition of the industrial employment base are discussed to illustrate both the strong growth of this sector and the reason for concern over the adequacy of measurements. A description of the Bureau of Labor Statistics' primary sources of current data on employment, hours, and earnings, and their importance in tracking economic developments, sets the stage for exploring, in more detail, the sources of measurement problems. Some problems stem from the nature of employment practices, from the conduct of the surveys, and from employer recordkeeping procedures; others relate to the relative instability of the small establishments that characterize the sector. The final section outlines initiatives which have been undertaken by the Bureau to redesign the Current Employment Statistics Survey, the major source of employment and earnings measures by industry, to ensure that firms in the service sector are appropriately represented by the survey, and that survey operations are tailored to the special needs of service-sector employers in order to gain their cooperation in the survey.

Why the interest in service employment

In the United States, as in other industrialized nations, the long-term shift from an agricultural, to a goods-producing, to a service-producing economic base has emerged. The strength and pervasiveness of this trend, which has particularly accelerated over the last two decades, has been extensively documented else-

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where.[1] Nonetheless, some of the highlights of this evolution are quite significant and worth stressing:

- Since 1920, the service-producing share of nonagricultural employment has gone from 53 percent to 72 percent. Two divisions showed significant growth—the service industries and government. (See table 1.)
- This evolutionary shift in the industrial complexion accelerated during the Great Depression, dampened as the Nation turned to hard-goods production during World War II, but has resumed a steady pace since the mid-1940's.
- Over the past two decades, some 86 percent of job growth in the economy has occurred in the service-producing sector. By mid-1982, this sector provided 74 percent of all jobs, up from 62 percent in 1960.
- During recessionary periods, the service-producing sector has shown remarkable resilience while the goods sector has borne the brunt of the economic declines. This relative immunity from downturn has also been evidenced in the most recent recessionary period.[2]
- The shift from a goods to a service economy represents changes in the U.S. economy of historic proportions. It has been influenced by such factors as the increase in demand for consumer services previously produced outside the measured market economy, the increase in the demand for leisure goods, shifts from internal to external sources for business services (such as marketing, accounting, and the like), and the changing nature of international trade. In turn, the shift has had a pronounced influence on the character of the labor force, particularly in opening opportunities for women. Over the past two decades, women's share of service-producing employment has expanded from 40 to 50 percent, accounting for 65 percent of the employment expansion in the sector.

Review of data sources

The Bureau of Labor Statistics maintains three primary sources of data on employment, hours, and earnings in the service sector. Each has its own strengths and weaknesses.

The establishment survey. The Current Employment Statistics Survey, commonly referred to as the establishment survey, collects payroll data from nonagricultural employers for the pay period including the 12th of each month. The survey, conducted by mail, obtains summary data on total numbers of employees, including women workers and production or nonsupervisory workers. In addition, summary data on the payroll and hours (paid for) of production or nonsupervisory workers are collected in order to compute average hourly earnings, and average weekly hours and earnings. Overtime hours data are collected for production workers in manufacturing. Employer participation in the survey is voluntary.

Table 1. Employment composition of goods- and service-producing sectors, 1920 and 1981

[Numbers in thousands]

Divisions	1981 employment	Percent distribution	
		1920	1981
Nonfarm economy	91,543	100.0	100.0
Goods-producing sector	25,672	46.7	28.0
Mining	1,104	4.5	1.2
Construction	4,307	3.2	4.7
Manufacturing	20,261	39.0	22.1
Service-producing sector	65,871	53.3	72.0
Transportation and public utilities	5,151	14.6	5.6
Trade	20,738	16.3	22.7
Wholesale	5,343	—	5.8
Retail	15,395	—	16.8
Finance, insurance, and real estate	5,331	4.3	5.8
Services	18,598	8.6	20.3
Government	16,054	9.5	17.6
Federal	2,772	—	3.0
State and local	13,282	—	14.5

The establishment survey is conducted as a cooperative Federal-State program with State Employment Security Agencies collecting most of the data. The employer's microdata can thus be used by the States to prepare local estimates (currently available for 50 States and more than 200 Standard Metropolitan Statistical Areas) and, at the same time, by the Bureau of Labor Statistics to prepare national estimates. Duplication of data collection at the Federal and local levels is avoided through this cooperative arrangement.

The establishment survey is the largest monthly survey in the field of economic statistics, with an active sample of 180,000 establishments reporting data covering about 35 percent of total nonagricultural employment in the United States. Data are published for more than 500 separate industries at the national level, and in varying degrees of industry detail at the State and Standard Metropolitan Statistical Area levels. The survey provides monthly measures of total employment and numbers of women and nonsupervisory workers for 155 service-producing industries at the national level. This represents 30 percent of the 567 service-producing industries designated in the U.S. Office of Management and Budget's 1972 Standard Industrial Classification System. Estimates of average weekly earnings, average weekly hours, and average hourly earnings are produced for nonsupervisory workers in most of these industries.

The data collected in the Bureau's monthly survey of employment, hours, and earnings have served as a primary source for tracking the growth of the service-producing sector. Thus, in and of themselves, these data are called upon to portray trends with accuracy and timeliness as a basis for economic decisionmaking. However, the data have critical secondary uses which also fuel the demand for reliable reporting and accurate measurement of employment, hours, and earnings in the service sector.

Within the Bureau, for example, the data have the following major uses:

- *In productivity measurement*: Monthly total hours by industry detail and production-worker employment data are key inputs to productivity measurement and the quarterly productivity estimates. The annual employment and hours data for detailed industries are used for developing labor inputs for measures of output per employee hour.
- *In occupational employment projections*: National employment data by industry detail are projected forward and occupational staffing patterns of the industries are applied to those projected industry levels to produce projected occupational patterns.
- *In economic growth studies*: A key input into the BLS economic growth model is annual employment data by detailed industry.
- *In development of subnational unemployment statistics*: The monthly employment data are used both by the BLS and the State agencies as the source of employment data for those subnational areas for which the household survey, discussed below, fails to provide reliable estimates. Currently, the unemployment rates for 40 States and about 200 areas are computed using these survey results as a key input.
- *In occupational health and safety statistics*: Detailed annual industry employment levels are used for computing total injury rates, with actual injury experience based on an annual survey and administrative records.

Other Federal agencies also use the service sector data extensively:

- *In personal income and gross national product estimation*: The U.S. Department of Commerce's Bureau of Economic Analysis uses the monthly employment and earnings series as a key input for estimating the wage component of these economic measures.
- *In management of trade policy*: Detailed industry employment trends are used to determine job loss associated with increased imports.

In addition to these critical, continuing government uses of the data, the private and public sectors also rely on the survey results for: marketing studies; economic research and planning; government funding and policy analysis; regional analysis; industry studies; plant location planning; wage negotiations; and adjustment of labor costs in escalation of long-term contracts.

The Current Population Survey. This monthly survey collects data on employment status directly from individuals in households and provides information on the demographic, occupational, and other characteristics of the employed, the unemployed, and persons not in the labor force. The household survey is conducted by the Bureau of the Census each month for BLS, providing data for the Nation and the 10 largest States.

Each month, 60,000 housing units are eligible for interview, by personal visit or by telephone. Information is gathered on the personal characteristics of all members of the household 16 years of age and over and on their labor force status during the survey week (week including the 12th of the month). This makes possible detailed tabulation and publication of labor force data by demographic characteristics.

The results of the establishment and household surveys are published and analyzed together each month, 3 weeks after the survey reference week. Estimates from both surveys generally show the same trends in employment. By publishing the results of both surveys together, the current analysis of the Nation's employment situation is greatly enhanced, with the household survey providing demographic detail and the establishment survey providing industry detail.

Each month, the household survey provides employment, unemployment, and labor force data for nine service-producing industries. The emphasis of the monthly data is to provide the basic types of estimates on labor force status by an extensive array of demographic characteristics. On an annual basis, employment data from the household survey are published for 116 service-producing industries along with the percentages of employed women and members of racial minorities.

Administrative establishment files. Unemployment insurance (UI) laws administered by State Employment Security Agencies cover almost every employer unit. The States require each unit (establishment) to provide a quarterly report on employment and wages of its work force and to pay a tax into the unemployment trust fund. As a byproduct of this administrative reporting system, and the Federal-State cooperative relationship, BLS obtains from each State a virtual census of establishments, and their employment and wages, on a quarterly basis. By assigning industry and location (county) codes to each establishment's record, the employment and wage data can be summarized by size-of-employment class, within industry and county, and through successive aggregations, to Standard Metropolitan Statistical Area, State, regional, and national totals.

What these data lack in timeliness, they make up for in comprehensiveness. Because of the large number of UI reporting units (4.5 million), coupled with the lag in the required payment of taxes, and associated data entry, correction, and tabulation workloads, the UI data are generally not available in summary form until 6 to 9 months after the end of each quarter. Nevertheless, because of the comprehensive nature of the data and the potential for dissaggregation to complete industry and county detail, this data base is extremely important. It serves as the foundation of the establishment survey—first, as the sample frame from which States solicit survey respondents and second, as a benchmark to adjust national and subnational employment levels annually.

Because the UI data represent nearly a universe of wage and salary workers in nonagricultural industries, employment (for each month of the quarter), number of reporting units, and total quarterly wages can be tabulated for each quarter and presented in complete industry detail (567 industries in the service-producing sector) at all levels of geographic aggregation from the county (3,100) level up to national totals. The industry statistics can be tabulated by size of firm and type of ownership (private, and Federal, State, and local government) as well. The only limit to disaggregation of the UI data base is the requirement that confidentiality be provided for any reporting unit. Therefore, publication rules to prevent disclosure are rigorously adhered to.

While the focus of the analysis in this article is primarily on measures of employment, hours, and earnings on a current basis in industry detail, it is the availability of the UI administrative record of all employing units in the Nation—tracking their birth, growth, and demise—that provides us with the information to both design the Current Employment Statistics Survey and to adjust that design as the nature of the economy changes. Very little nonagricultural wage and salary employment escapes coverage under the UI laws. Of almost equal importance, the UI reporting system is able to identify establishment deaths and purge the appropriate records from the files on a timely basis.

Measurement problems

The unique measurement problems of the service-producing sector stem both from the nature of the establishments and from the types of survey operations used to gather data in the Current Employment Statistics program. As previously indicated, the industry statistics on employment, hours, and earnings are gathered monthly on a voluntary basis, using a mail questionnaire to obtain data from establishment payroll records.

Sampling difficulties. For a variety of reasons, the one characteristic of an establishment that appears to be most telling of its likelihood to voluntarily respond in a government survey is its size, in terms of the number of employees on the payroll. As a consequence, experience has shown that it is more difficult to implement optimal sample designs, which require certain response rates, in those industries which are characterized by small firms. Small firms predominate in many of the industry divisions in the service sector, as shown by the distribution of the survey's sample by size of establishment and sample coverage by industry division in table 2. With the exception of government, portions of transportation and public utilities, and a few individual service industry groupings, such as banks and hospitals, the sample in the service sector falls short of representation in the smallest size categories.

Historically, this has been more of a problem in the service-producing sector than in the goods-producing sector. The reasons are shown in table 3, which arrays total employment by size class for these sectors. Using 250 employees as a cutoff point to distinguish between small and large employers, employment in the goods-producing sector was split 49 to 51 percent in 1980. In the service-producing industries, the split between small and large was 70 to 30 percent, reflecting the greater proponderance of small employers. Data from the UI administrative data base, shown in table 4, provides further evidence of the concentration of employment in the smaller firm classes in selected service industries.

Employment practices. The establishment survey of employment, hours, and earnings currently is designed to portray the level of and change in activity in establishments which have fairly traditional employment practices. The assumptions incorporated into the survey design and estimation procedures include a relatively stable work force that expands or contracts with the pace of economic activity in the short term, and with technological innovations in the long term; a normal pattern of regular hours and overtime payment that expands or contracts in the short term with the level of economic activity; and a standard work force composition which assumes that the worker has some permanent attachment to the employing establishment.

Analysis of the employment practices of service industries indicates a number of departures from traditional employment practices. For example, statistics on labor turnover rates by industry indicate that turnover is highest among those industries that are characterized by a preponderance of small firms with relatively large numbers of easy entry, low-skill occupations. According to a 1980 study by Malcolm Cohen and Arthur Schwartz, the service-producing industries with the highest labor turnover rates were: automotive dealers and service stations; automotive repair, services, and garages; water transportation; real estate; business services; motion pictures; hotels and other lodging places; amusement and recreation services; and eating and drinking places.[3] These industries rank among the lowest in terms of average earnings, which is consistent with their high proportions of low-skill jobs.

Average weekly hours have generally been declining for these industries for many years, and are very low relative to those in most other industries. This largely reflects a growing practice of part-time employment in these industries. Data from the household survey, shown in table 5, provide direct evidence of the dramatic growth in part-time employment in many of the service-producing industry divisions relative to the goods-producing divisions. (In the household survey, a person is counted as part time if he or she normally works less than 35 hours.) The proportion of part-time workers in the goods-producing industries has hardly changed over time, averaging a low 4.5 percent in 1981. In contrast, the proportion of part-time workers has increased for almost all of the service-producing industries, and averaged 20.7 percent in 1981. The highest rates are in retail trade (36.0 percent), personal services (27.2 percent), entertainment and recreation services (35.0 percent), and medical, except hospital, services (26.1 percent).

Generally, the characteristics of high labor turnover, low earnings, low skill requirements, and high proportions of part-time workers seem to depict a rather loose or casual bond between the employer and employee in the service sector. This loose bond, in turn, contributes to deviations from traditional payroll practices which are assumed in survey definitions, and undoubtedly

Table 2. Distribution of the Current Employment Statistics sample by employment size of establishment, and sample coverage by division, March 1980

[Employment in thousands]

Item	Total	Establishment employment size							
		Under 10	10 to 19	20 to 49	50 to 99	100 to 249	250 to 499	500 to 999	1000 and over
Total nonfarm economy[1]									
Universe:									
Establishments	4,529,799	3,400,161	514,257	356,138	131,762	80,161	26,421	12,378	8,521
Employment	89,718	10,323	7,103	11,054	9,250	12,392	9,306	8,677	21,613
Percent employment distribution	100.0	11.5	7.9	12.3	10.3	13.8	10.4	9.7	24.1
CES sample:									
Establishments	166,330	24,103	24,272	40,008	27,395	26,528	11,937	6,459	5,628
Employment	33,502	123	345	1,289	1,939	4,153	4,174	4,493	16,986
Percent employment distribution	100.0	.4	1.0	3.8	5.8	12.4	12.5	13.4	50.7
Percent sample coverage	37.3	1.2	4.9	11.7	21.0	33.5	44.9	51.8	78.6
Private sector[1]									
Universe:									
Establishments	4,350,562	3,303,179	491,885	332,805	118,763	68,369	20,823	9,015	5,723
Employment	73,185	10,000	6,787	10,296	8,310	10,488	7,281	6,262	13,761
Percent employment distribution	100.0	13.6	9.3	14.1	11.4	14.3	9.9	8.6	18.8
CES sample:									
Establishments	147,973	22,101	23,178	37,472	24,871	22,616	9,387	4,705	3,643
Employment	23,536	114	329	1,205	1,756	3,511	3,271	3,268	10,082
Percent employment distribution	100.0	.5	1.4	5.1	7.5	14.9	13.9	13.9	42.8
Percent sample coverage	32.2	1.1	4.8	11.7	21.1	33.5	44.9	52.2	73.3
Mining									
Universe:									
Establishments	31,388	19,531	4,629	4,020	1,505	1,060	325	193	125
Employment	990	58	64	123	103	184	113	132	233
Percent employment distribution	100.0	5.9	6.5	12.4	10.4	18.6	11.4	13.3	23.5
CES sample:									
Establishments	2,123	308	346	505	310	322	167	92	73
Employment	369	2	5	16	21	51	58	63	153
Percent employment distribution	100.0	.5	1.4	4.3	5.7	13.8	15.7	17.1	41.5
Percent sample coverage	37.3	3.4	7.8	13.0	20.4	31.1	51.3	47.7	65.7
Construction									
Universe:									
Establishments	527,882	440,087	48,148	27,890	7,863	3,181	663	170	90
Employment	4,087	1,063	644	829	519	488	225	116	223
Percent employment distribution	100.0	26.0	15.8	20.3	12.7	11.5	5.5	2.8	5.4
CES sample:									
Establishments	16,101	4,307	3,558	4,687	2,112	1,114	222	71	30
Employment	739	20	50	147	146	164	78	48	86
Percent employment distribution	100.0	2.7	6.8	19.9	19.7	22.2	10.6	6.5	11.6
Percent sample coverage	18.1	1.9	7.8	17.7	28.1	35.0	34.7	41.4	38.6
Manufacturing									
Universe:									
Establishments	322,994	158,164	54,585	54,842	27,491	22,480	6,928	3,979	2,525
Employment	20,722	576	752	1,712	1,920	3,490	3,104	2,725	6,443
Percent employment distribution	100.0	2.7	3.6	8.3	9.3	16.8	15.0	13.2	31.1
CES sample:									
Establishments	44,205	2,410	3,764	9,272	8,645	10,585	5,122	2,563	1,844
Employment	11,175	13	55	309	620	1,684	1,792	1,772	4,930
Percent employment distribution	100.0	.1	.5	2.8	5.5	15.1	16.0	15.9	44.1
Percent sample coverage	53.9	2.3	7.3	18.0	32.3	48.3	57.7	65.0	76.5

Table 2. Continued—Distribution of the Current Employment Statistics sample by employment size of establishment, and sample coverage by division, March 1980

[Employment in thousands]

Item	Total	Establishment employment size							
		Under 10	10 to 19	20 to 49	50 to 99	100 to 249	250 to 499	500 to 999	1000 and over
Transportation[1]									
Universe:									
Establishments	171,846	118,449	22,882	17,525	6,588	3,945	1,196	562	489
Employment	4,592	355	312	531	453	602	416	387	1,536
Percent employment distribution	100.0	7.7	6.8	11.6	9.9	13.1	9.1	8.4	33.4
CES sample:									
Establishments	7,611	884	1,046	1,986	1,375	1,179	473	284	404
Employment	2,623	5	15	64	97	183	166	198	1,895
Percent employment distribution	100.0	.2	.6	2.4	3.7	7.0	6.3	7.5	72.2
Percent sample coverage	57.1	1.4	4.8	12.1	21.4	30.4	39.9	51.2	123.4[2]
Trade									
Universe:									
Establishments	1,553,714	1,143,202	210,184	136,434	40,885	16,951	3,917	1,565	796
Employment	20,068	3,733	2,827	4,104	2,746	2,490	1,332	1,054	1,782
Percent employment distribution	100.0	18.6	14.1	20.4	13.7	12.4	6.6	5.3	8.9
CES sample:									
Establishment	41,147	7,630	8,872	12,463	6,091	3,996	1,246	484	355
Employment	3,288	42	125	392	421	596	428	338	946
Percent employment distribution	100.0	1.3	3.8	11.9	12.8	18.1	13.0	10.3	28.8
Percent sample coverage	16.4	1.1	4.4	9.6	15.3	23.9	32.1	32.1	53.1
Finance									
Universe:									
Establishments	387,292	319,337	30,111	22,226	8,380	4,858	1,412	590	378
Employment	5,090	808	413	691	590	748	498	417	925
Percent employment distribution	100.0	15.9	8.1	13.6	11.6	14.7	9.8	8.2	18.1
CES sample:									
Establishments	11,241	1,671	1,490	2,099	2,102	1,874	715	396	295
Employment	1,826	8	21	89	150	290	247	281	740
Percent employment distribution	100.0	.4	1.2	4.9	8.2	15.9	13.5	15.4	40.5
Percent sample coverage	35.9	1.0	5.1	12.9	25.4	38.8	49.6	67.4	80.0
Services									
Universe:									
Establishments	1,345,636	1,104,409	121,356	69,868	26,451	15,894	4,382	1,956	1,320
Employment	17,636	3,407	1,775	2,306	1,979	2,526	1,583	1,431	2,619
Percent employment distribution	100.0	19.3	10.1	13.1	11.2	14.3	9.0	8.1	14.9
CES sample:									
Establishments	25,545	4,881	4,093	5,880	4,236	3,546	1,442	805	652
Employment	2,516	24	58	188	301	543	502	568	1,332
Percent employment distribution	100.0	.7	1.6	5.3	8.6	15.4	14.3	16.2	37.9
Percent sample coverage	19.9	.7	3.3	8.2	15.2	21.5	31.5	39.7	50.9
Government									
Universe:									
Establishments	179,237	96,982	22,372	23,333	12,999	11,792	5,598	3,363	2,798
Employment	16,533	323	316	758	940	1,904	2,025	2,415	7,852
Percent employment distribution	100.0	2.0	1.9	4.6	5.7	11.5	12.2	14.6	47.5
CES sample:									
Establishments	18,357	2,002	1,094	2,536	2,524	3,812	2,550	1,754	1,985
Employment	9,966	9	16	84	183	642	903	1,225	6,904
Percent employment distribution	100.0	.1	.2	.8	1.8	6.4	9.1	12.3	69.3
Percent sample coverage	60.3	2.8	5.1	11.1	19.5	33.7	44.6	50.7	87.9

[1] Excludes railroads.

[2] Sample total in large size class includes combined units of telephone companies reporting to BLS under special arrangements.

NOTE: Because of rounding, sums of individual items may not equal totals. Data are classified according to the U.S. Office of Management and Budget's 1972 Standard Industrial Classification system.

adds to the difficulties that employers have in reporting in government surveys.

Data collection problems. In the final analysis, the kind of data that might be obtained in a survey operation is constrained by the amount of information that the respondent has at ready access. This is certainly the case with the establishment survey of employment, hours, and earnings, which has historically been keyed to the type of information readily available from the payroll records of responding firms. The experience of the Bureau and the cooperating State agencies is that establishments will report, under our strict pledges of confidentiality, information that would normally be considered privileged and proprietary, but only if it is conveniently and readily accessible. If the information request goes much beyond the normal recordkeeping practices of the firm, both overall response rates and responses to particular data items will suffer.

As a part of an overall review of the establishment payroll survey, BLS conducted two interview surveys with employers during 1981. The first sought to determine what data elements are readily available from employer payroll records on a monthly basis, while the second concerned itself with the reasons why employers are unable or reluctant to provide the requested data.

The majority of respondents indicated that the information requested each month was readily available. However, the proportion of manufacturing respondents who had easy access to such records was higher than the proportion of service respondents. This shows up in a rather significant difference between the service and manufacturing employers regarding their willingness to cooperate with the survey. For example, 45 percent of service-industry employers cited lack of time or resources to complete the BLS 790 survey form, compared with 19 percent of manufacturing employers.

The BLS 790 questionnaire requests a count of nonsupervisory workers, together with their payroll and paid hours. The interviews revealed that 31 percent of the service-industry employers who are reporting monthly information to BLS do not differentiate between supervisory and nonsupervisory workers in their payroll records. Because many of these establishments are small, the respondents are able and willing to make the necessary adjustments for BLS. However, 64 percent of employers who refused to cooperate in the survey claimed that they maintain only one payroll figure for all their employees and are unable to provide the requested nonsupervisory breakouts.

Another problem encountered in the interviews was that a significant proportion—19 percent—of service industry employers use an outside accounting service for preparing payrolls and payroll summaries, while only 5 percent of manufacturing employers do so. The accounting services generally handle only mandatory government reports for their clients, and this would have a negative impact on responses to a voluntary questionnaire like the BLS 790.

Table 3. Distribution of employment by establishment size class, and sector, 1980

[Employment in thousands]

Size class	Private nonfarm sector		Goods-producing sector		Service-producing sector	
	Employment	Percent of total	Employment	Percent of total	Employment	Percent of total
Total	72,249.8	100	26,041.6	100	46,208.2	100
0–3	3,278.9	5	515.2	2	2,763.7	6
4–9	6,493.7	9	1,190.7	5	5,303.0	12
10–19	6,604.7	9	1,469.4	6	5,135.3	11
20–49	10,100.8	14	2,687.4	10	7,413.4	16
50–99	8,196.1	11	2,571.6	10	5,624.5	12
100–249	10,392.2	14	4,172.1	16	6,220.1	13
250–499	7,225.4	10	3,483.6	13	3,741.8	8
500–999	6,234.3	9	2,999.0	11	3,235.3	2
1000+	13,723.7	19	6,952.6	27	6,771.1	15

NOTE: Based on coverage under State Unemployment Insurance Laws. Excludes railroads, some nonprofit institutions, and commission insurance salesworkers.

Table 4. Selected service industries with large concentrations of small establishments, 1980

Industry	Total employment	Percentage of employment in firms with—			
		Under 10 workers	10 to 49 workers	50 to 249 workers	More than 250 workers
Gasoline service stations	554,000	53	29	14	4
Eating and drinking places	4,481,000	14	42	28	16
Real estate agents	344,000	40	30	24	6
Laundry, cleaning, and garment services	356,000	28	36	30	6
Beauty shops	284,000	64	27	7	2
Automotive repair shops	351,000	62	33	4	1
Offices of physicians	739,000	56	31	9	4
Offices of dentists	336,000	80	18	1	1

In sum, many of the reservations voiced by respondents to the interview surveys related to the fact that small establishments, already burdened with mandatory government reporting, simply are unable or unwilling to add to their paperwork by filling out voluntary survey forms. Some large service-industry employers which might otherwise be willing to cooperate—such as hospitals or schools—frequently do not maintain records according to BLS definitions, and thus are unable to report the requested information.

New business formations. In the establishment survey, the direct measurement of employment growth due to new business formations is exceedingly difficult. The lead time necessary to prepare the universe listing of establishments from which to select new sample respondents practically assures that any new business establishment will be several months old before it has a chance of being in the sample. In most instances, the new business will have completed its initial hiring before it becomes a sample member. Once the new establishment is a sample member and has reported for 2 consecutive months, its month-to-month employment change will contribute to the calculation of the "link relative" that is applied to the previous month's employment estimate to derive the current month's estimate. The problem is that the initial hiring that occurred before the new business became a sample member is never reflected in the "link relative" calculation.

The inability to properly measure employment growth from business births creates a downward bias in the employment estimates, which accumulates each successive month after the most recent benchmark to employment levels from the UI administrative data base. The extent of the bias is directly proportional to the contribution of business births to the employment in a given industry.

In industries characterized by large employers, new entries are very rare and therefore contribute little if

Table 5. Percentage of part-time workers[1] by industry, selected years

Industry	1962	1972	1981
Total goods producing	4.4	2.1	4.5
Mining	3.6	1.4	2.3
Construction	5.8	5.2	7.1
Manufacturing	4.1	1.4	4.0
Total service producing	14.3	17.2	20.7
Transportation and public utilities	4.6	6.6	8.0
Trade	19.7	23.2	30.1
Wholesale	6.6	6.5	6.7
Retail	23.2	27.3	36.0
Finance, insurance, and real estate	9.3	9.1	11.0
Miscellaneous services	17.3	19.9	22.0
Business and repair	11.7	14.9	16.7
Personal	18.6	26.7	27.2
Entertainment and recreation	34.7	36.8	35.0
Medical, except hospital	(2)	19.4	26.1
Hospitals	(2)	14.7	16.2
Welfare and religious	(2)	22.0	26.1
Education	18.4	22.1	24.8
Other professional	15.4	12.7	14.0
Forestry and fisheries	4.9	5.9	8.9
Public administration	5.1	6.2	6.6

[1] Voluntary part-time workers, plus workers on part time for economic reasons who usually work part time.
[2] Data not available.

anything to employment trends. Many of the service-producing industries, however, are characterized by small employers, with large numbers of business births and deaths. While the deaths are measured by the establishment survey, the births are not, and an adjustment to the sample trend must be made each month to correct for the bias. These "birth bias" adjustment factors may account for a large part of the estimated long-term employment growth of many of the service-producing industries.

The calculation of birth bias adjustment factors is straightforward. For each of the most recent 3 years, the employment estimate derived from the sample link relatives (with no bias adjustment) is compared to the benchmark level. An adjustment factor is then calculated so that its application each month thereafter will cumulatively add to the average amount that the three previous benchmarks were underestimated. For example, if the sample-derived employment estimate for an industry was lower than the employment benchmarks by 1.6, 0.8, and 1.2 percentage points for the most recent 3 years, the average downward bias is 1.2 percent. A factor of 1.0010 will then be applied to the link relative for each of the next 12 months so as to adjust by 1.2 percent over the year.

Because of the availability of annual benchmark employment levels, it is possible to measure the extent of the bias for each industry over time. We have observed that the contribution of the bias can change at different stages of the business cycle. The bias also has seasonal swings in certain industries, and can be sensitive to shocks to the economy, such as the 1973–74 oil embargo and the abnormally high interest rates of recent years. However, despite an ability to identify bias, the Bureau has not been able to develop procedures to fine-tune the bias adjustments on a current basis except in the construction division, which behaves with somewhat more predictability over the business cycle.

Redesigning the establishment survey

A review of the published output of the establishment survey as it is currently designed and operating puts into perspective the structural problem with the survey. As indicated in table 6, only 30.4 percent of the published industries are service producing, although 72.0 percent of the Nation's jobs are in these industries. A large part of this disparity arises because the Standard Industrial Classification system provides for more detail on goods-producing industries than on service-producing.

In addition to the problem of the coding structure, however, the establishment survey has been unable to produce data of publishable quality for much of the service-producing area because of the difficulty in obtaining employer responses and maintaining regular month-to-month reporting for a sufficiently large and representative sample in many of the component industries. The Bureau of Labor Statistics is now launching a major redesign of the survey which will deal directly with the problems that have prevented us from providing more reliable employment, hours, and earnings data for specific service-producing industries.

The sample frame. Because the UI administrative data base is unique in providing universal coverage of employers, we plan to continue and strengthen the link between the establishment survey and the administrative

Table 6. Distribution of industries by sector, according to SIC coding structure and as published by BLS

Divisions	1972 SIC structure		Published by BLS		
	Number of industries	Percent distribution	Number of industries	Percent distribution	Percent published
Total nonagriculture	1230	100.0	510	100.0	41.5
Goods producing	663	53.9	353	69.2	53.2
Mining	58	4.7	13	2.5	22.4
Construction	36	2.9	15	2.9	41.7
Manufacturing	569	46.3	324	63.5	56.9
Service producing	567	46.1	155	30.4	27.3
Transportation and public utilities	98	8.0	24	4.7	24.5
Wholesale trade	80	6.5	20	3.9	25.0
Retail trade	82	6.7	33	6.5	40.2
Finance, insurance, and real estate	95	7.7	19	3.7	20.0
Services	174	14.1	35	6.9	20.1
Government	38	3.1	23	4.5	60.5

data base. Initially, for example, testing of alternative sample designs will be done by retrospective cross tabulation of employer data from the UI files. In this manner, we can evaluate the representativeness of various designs for estimating employment and wages by industry without having to collect additional data.

We also plan to review carefully the completeness of the UI data base by comparisons with other listings of employers, such as the Census Bureau's Standard Statistical Establishment List and the files maintained by Dun and Bradstreet as part of its credit rating operations. And, particularly because of the volatile nature of many of the small establishments in the service sector, we want to review and document the procedures used by the State Employment Security Agencies for processing establishment births and deaths.

Bias adjustment. As part of the redesign effort, we will attempt to reduce the amount of bias adjustment for establishment births required in the employment estimates. This will be accomplished through additional stratification of the estimating cell structure. In addition, we will be reviewing potential sources of new-firm data and testing the use of such information in our estimation system. We know that new business formations and their impact on current employment trends vary significantly during a business cycle for many industries. Further work will be done to document this and to arrive at an appropriate means of varying the bias adjustment factors on a current basis according to the stage of the cycle.

Examination of seasonality. Seasonal adjustment of the establishment data is performed annually using the X-11 ARIMA model. The model options for projecting the data series 1 year ahead were used for the first time in 1981. Each year, the seasonal adjustment is updated at the time the establishment series are adjusted to new benchmark levels, usually in July.

Additional research will be undertaken as part of the redesign to test various X-11 options for making better seasonal adjustments for industries that are periodically affected by strikes, product model changeover, holidays, and so forth. We will also try to determine whether the seasonal adjustment should be updated every 6 months rather than annually.

Data collection techniques. Because we know that our traditional method of solicitation and collection of data by mail does not provide sufficient sample representation in many of the service-producing industries, we will be experimenting with other means of obtaining employer cooperation and collecting monthly data. Our goal is to arrive at the least costly mix of mail, telephone, and personal visit to satisfy our sample design.

Estimation process. In recent years, research by David Birch of the Massachusetts Institute of Technology and others has indicated that it is the small, young, volatile service-producing firms that are responsible for nearly all of the net creation of new employment opportunities.[4] Unfortunately, these are the firms which are least likely to be adequately represented in the establishment survey as now designed. We plan to test additional size and regional stratification of our sample to improve our employment estimates for industries with large proportions of such firms; heretofore, extensions of the sample stratification system were generally intended to improve estimates of hours and earnings, rather than employment.

Hours and earnings estimation. Because of the changing mix of full- and part-time workers in many service-producing industries, coupled with problems in defining a "nonsupervisory worker," we plan to test several alternative hours and earnings measures. We hope to demonstrate an ability to collect an "all-employee" earnings measure that can be benchmarked annually to the wage data from the UI administrative data base. To obtain better and more meaningful hours measures, we will try to collect information separately for "permanent," versus "all other," employees. The relationship between hours worked and hours paid, which is especially important for the construction of the Bureau's productivity measures, will also be studied.[5]

IN VIEW OF BOTH the increasing importance of the service-producing sector and the shortcomings in the current statistical measurement system, improvement in the data for this sector takes on a very high priority in the Bureau's plans for survey modernization. Such improvement, however, constitutes a formidable challenge, given the preponderance of hard-to-measure smaller establishments and the attendant reporting difficulties.

The path to improvement is threefold: a fine-tuning of the data collection process to ease the response burden and extend coverage; a reconsideration of the sample design in order to better focus survey coverage; and a review and extension of procedures for generating estimates based on the survey responses. The initial research on improving data collection is complete, while development of sample design and estimating procedures continues. Over the next 3 years, as resources permit, the findings of the initial research will be evaluated and, if cost-effective, will be integrated into the survey operations. □

——*FOOTNOTES*——

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[1] Among the several sources that extensively document the shift from goods- to service-producing are: Victor R. Fuchs, *The Service Economy* (New York, National Bureau of Economic Research, 1968); Harley L. Browning and Joachim Singelman, *The Emergence of a Service Society: Demographic and Sociological Aspects of the Sectoral Transformation of the Labor Force in the U.S.A.* (Population Research Center, University of Texas at Austin, 1975); Thomas M. Stanback, Jr., *Understanding the Service Economy: Employment, Productivity, Location* (Baltimore, Johns Hopkins University Press, 1979); Eli Ginsberg and George J. Vojta, "The Service Sector in the U.S. Economy," *Scientific American*, March 1981, pp. 48–55; and Michael A. Urquhart, "The services industry: is it recession proof?" *Monthly Labor Review*, October 1981, pp. 12–18.

[2] Marillyn A. Hewson and Michael A. Urquhart, "The Nation's employment situation worsens in the first half of 1982," *Monthly Labor Review*, August 1982, pp. 3–12.

[3] Malcolm S. Cohen and Arthur R. Schwartz, "U.S. labor turnover: analysis of a new measure," *Monthly Labor Review*, November 1980, pp. 9–13.

[4] A review of the work by David Birch and others appears in Richard Greene, "Tracking job growth in private industry," *Monthly Labor Review*, September 1982, pp. 3–9.

[5] For a more complete discussion of this issue, see Jerome A. Mark, "Measuring productivity in service industries," *Monthly Labor Review*, June 1982, pp. 3–8.

A note on communications

The *Monthly Labor Review* welcomes communications that supplement, challenge, or expand on research published in its pages. To be considered for publication, communications should be factual and analytical, not polemical in tone. Communications should be addressed to the Editor-in-Chief, *Monthly Labor Review*, Bureau of Labor Statistics, U.S. Department of Labor, Washington, D.C. 20212.

Unemployment and labor force trends in 10 industrial nations: an update

Postwar joblessness reaches 13 percent in Great Britain in the third quarter, with West Germany, France, Canada, and the United States also incurring record high unemployment rates

JOYANNA MOY

In the latter half of 1981 and the first 9 months of 1982, unemployment rates approximating U.S. concepts rose sharply in most of the 10 countries covered by the Bureau of Labor Statistics' series of comparative unemployment rates. Unemployment rates reached post-World War II highs in six of the industrial nations—the United States, Canada, France, West Germany, Great Britain, and the Netherlands. Italian unemployment, although at a comparatively moderate level of 4.7 percent after adjustment to U.S. concepts, was the highest since 1959. In addition, there were an equally large number of "discouraged workers" in Italy—persons who wanted jobs but had not actively sought work recently. Although Japanese and Swedish unemployment rates remained substantially lower, in the 2 to 3 percent range, both countries had higher rates than they normally experienced over the last 20 years. Australia was the only country where the jobless rate was down in 1981; it rose, however, in the first 9 months of 1982.

This article updates comparative unemployment rates through the third quarter 1982 and other related labor market statistics through 1981 for the 10 countries. The foreign unemployment and labor force data are adjusted to U.S. concepts. Some revisions of previously published estimates are also presented; the revisions arise from incorporation of more recent survey results.[1]

Unemployment pushes higher

In 1981, the U.S. unemployment rate of 7.6 percent was surpassed by the rates in Great Britain, 11.3 percent, the Netherlands, 8.9 percent, and France, 7.7 percent, and was matched in Canada. (See table 1.) The Australian rate fell to 5.8 percent. Unemployment rates of 4.2 percent were recorded in Germany and Italy; Japanese and Swedish jobless rates were in the 2 percent range.

By the second quarter of 1982, rates had risen in all 10 countries. The U.S. jobless rate, which had remained stable for the first three quarters of 1981, surged in the fourth quarter and reached new highs of 9.5 percent in the second quarter and 9.9 percent in the third quarter. Nevertheless, the U.S. rate was still exceeded by the rates in Great Britain, Canada, and probably the Netherlands.[2] The British rate, which rose to about 13 percent in early 1982, was the highest ever recorded in the BLS series of comparative unemployment statistics.

West Germany's unemployment rate also rose sharply in the fourth quarter of 1981 and the first half of 1982, while France and Italy experienced more moderate increases. However, both German and French third quarter rates were postwar records, and the second-

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Table 1. Quarterly unemployment rates approximating U.S. concepts, seasonally adjusted, 1978–82

Period	United States	Canada	Australia	Japan	France[1]	West Germany[1]	Great Britain[1]	Italy[2]	Sweden
1978	6.1	8.4	6.3	2.3	5.4	3.4	6.3	3.7	2.2
I	6.3	8.4	6.5	2.2	4.8	3.5	6.5	3.6	2.2
II	6.0	8.5	6.3	2.3	5.3	3.5	6.4	3.6	2.3
III	6.0	8.4	6.2	2.3	5.7	3.4	6.2	3.6	2.4
IV	5.9	8.2	6.3	2.3	5.6	3.3	6.0	3.9	2.1
1979	5.8	7.5	6.2	2.1	6.1	3.0	5.7	3.9	2.1
I	5.9	7.9	6.4	2.1	5.8	3.2	5.9	3.8	2.2
II	5.7	7.6	6.3	2.1	6.2	3.0	5.6	3.9	2.2
III	5.8	7.1	6.2	2.1	6.3	2.9	5.7	3.9	2.0
IV	6.0	7.3	6.1	2.1	6.2	2.8	5.6	3.9	1.8
1980	7.1	7.5	6.1	2.0	6.5	3.0	7.3	3.9	2.0
I	6.3	7.5	6.1	1.9	6.2	2.8	5.8	4.0	1.8
II	7.3	7.7	6.3	2.0	6.5	2.8	6.5	4.0	2.0
III	7.6	7.5	6.1	2.1	6.5	2.9	7.4	3.9	1.9
IV	7.5	7.4	6.0	2.2	6.6	3.1	9.0	3.8	2.2
1981	7.6	7.6	5.8	2.2	7.7	4.2	11.3	4.2	2.5
I	7.4	7.3	5.8	2.2	7.0	3.6	10.3	3.9	2.2
II	7.4	7.2	5.5	2.4	7.7	3.9	11.1	4.4	2.2
III	7.4	7.6	5.8	2.2	7.9	4.4	11.5	4.1	2.5
IV	8.3	8.4	5.9	2.2	7.9	4.9	12.5	4.4	3.1
1982									
I	8.8	8.6	6.3	2.3	8.3	5.3	13.0	4.6	3.0
II	9.5	10.2	6.6	2.4	8.6	5.9	12.9	4.7	3.1
III	9.9	12.1	7.1	—	8.7	6.3	13.0	4.5	—

[1] Preliminary for West Germany from 1979 onward, and for France and Great Britain from 1981 onward.

[2] Quarterly data are for January, April, July, and October.

NOTE: Quarterly figures for France, West Germany, Italy, and Great Britain are calculated by applying annual adjustment factors to current published data and therefore should be viewed as only approximate indicators of unemployment under U.S. concepts. Published data for Australia, Canada, Japan, and Sweden require little or no adjustment.

quarter Italian rate was the highest in more than 20 years.

Japan's unemployment rate increased marginally to 2.4 percent in the second quarter, after remaining at about 2.2 percent for the previous three quarters. Sweden's unemployment rate rose from 2.2 percent in the first half of 1981 to 3.1 percent in the fourth quarter but remained at about 3.0 percent in the first half.

The current comparative unemployment situation is in marked contrast with the 1960's and early 1970's. In those years, unemployment rates in the United States and Canada were much higher than in Western Europe, Japan, and Australia. U.S. and Canadian rates averaged about 5 percent during that period, compared to 1 percent in Japan and Germany, 2 percent in Australia, France, and Sweden, and 3 percent in Great Britain and Italy.

Unemployment rates trended down in the second half of the 1960's in the United States, Canada, Japan, and Australia, while in the European countries they were up. In the early 1970's, unemployment rates were higher again in every country except Italy. In the United States, Canada, and Japan, however, they were still below the levels of the early 1960's. Subsequently, unemployment rates continued up in every country except Japan and Sweden.

Unemployment has risen more rapidly in most European countries and Australia than in the United States, Canada, and Japan since the 1973 oil embargo and the 1974–75 recession. By the early 1980's, West Germany's unemployment rate was more than 6 times as high as in 1960–74. French jobless rates increased more than fourfold by 1980–82. British rates more than tripled and Australian rates tripled. In the United States and Canada, 1980–82 unemployment rates were about 50 percent higher than in 1960–74. However, both countries had begun with relatively high rates in the earlier period. Japan's unemployment rate increased somewhat more, but remained well below 3 percent. The smallest increases in unemployment rates since 1960–74 occurred in Sweden and Italy. Italy's rates were the highest in Europe during the earlier period, however, and its recent rates exclude a large group of discouraged workers. Sweden, by contrast, now has the lowest unemployment rate among the European countries.

Employment shows broad decline

In the first half of 1982, employment rose over 1981 in only 2 of the 10 countries studied—by 0.6 percent in Japan and by 0.2 percent in Australia. Employment declined most sharply in Canada, 1.9 percent, and Great Britain, 1.7 percent. Employment fell by 1 percent or less in the United States, West Germany, Italy, and Sweden and probably in France and the Netherlands as well.

In 1981, employment had increased about 1 percent in the United States and Japan and 2 to 2.5 percent in Australia and Canada. Among the European countries, employment increased only in Italy, a marginal 0.5 percent; in the other countries, employment declined. The largest decline was 4 percent in Great Britain. (See table 2.)

Employment growth was stronger in North America, Australia, and Japan than in Western Europe in earlier periods also. For all six European countries, annual average employment growth had been only 1 percent or less since 1960. In the 1960–73 period, the employment trend was negative only in one country, Italy; since 1973, the overall employment trend had been down in West Germany and Great Britain.

Employment maintenance programs. Special employment maintenance and training programs have had a significant impact on the 1981–82 employment levels in several European countries. For example, in June 1982, about 535,000 Britons were covered by various employment and training schemes. According to the British Department of Employment, the direct effect of these programs was to keep about 300,000 persons (1.1 percent of the labor force) off the June 1982 unemployment register.[3] In Sweden, although the number in training programs for labor market reasons declined in 1981, the total enrolled in the various public works and training programs actually exceeded the number of unemployed by 8 percent and accounted for 2.7 percent of the labor force (versus an unemployment rate of 2.5 percent).

In France, West Germany, Great Britain, and Italy, employment was supported by wide-reaching programs to subsidize employees placed on shorter hours for economic reasons. In France, an average of nearly 320,000 workers, equivalent to approximately 14.3 million work days, were covered in the first 10 months of 1981. The number of workers covered, 1.4 percent of the labor force, was up 130 percent from the first 10 months of 1980. In West Germany, the number of persons on short-time increased 150 percent in 1981 to nearly 350,000 workers, about 1.3 percent of the labor force. In Great Britain, the number covered by the Temporary Short-Term Working Compensation Scheme in 1981 ranged from a high of nearly one million in March to 190,000 in December. The average for the year, about 540,000, was 2.2 percent of the labor force. In the first half of 1982, the number receiving benefits declined further, to under 150,000 persons. In Italy, the number of hours subsidized by the Wage Supplement Fund rose 85 percent to 550 million hours in 1981. If the number of hours subsidized were spread among all employed persons, then approximately 27 hours per person were subsidized in 1981; or, assuming 1,800 hours worked per person, the equivalent of 1.4 percent of the labor force was subsidized.

Employment-population ratios. Although employment rose in 1981 in five of the countries, the employment-population ratio rose only in Canada. In the other four countries—the United States, Japan, Australia, and Italy—employment growth matched growth in the working age population, and employment ratios were virtually unchanged. The employment ratio fell sharply from 1980 in Great Britain, along with the 1-million decline in employment. Employment-population ratios also fell in France, West Germany, the Netherlands, and Sweden. (See table 2.) Sweden still had by far the highest employment ratio, 65 percent. By comparison, the 1981 ratios were around 60 percent in the United States, Canada, Japan, and Australia; 50 to 55 percent in France, West Germany, and Great Britain; and about 45 percent in the Netherlands and Italy.[4]

Labor force participation stable

With the exceptions of Canada and Great Britain, there was little or no change in 1981 in labor force participation rates—the proportion of the civilian working-age population in the labor force. In Canada, the participation rate rose to 64.7 percent in 1981 from 64.0 percent in 1980, the increase resulting entirely from continued growth in the female participation rate. In Great Britain, by contrast, the overall participation rate declined for the third consecutive year as both male and female participation continued to move downward. In most countries, changes in participation were characterized by secular downtrends for men and increases for women.

Labor force participation rates continued to be highest in Sweden, 67 percent, and lowest in Italy, 48 percent. In West Germany and the Netherlands, slightly more than 50 percent of the working age population were employed or looked for work in 1981, compared to 57 percent in France and 62 to 65 percent in the other five countries. (See table 2.)

Discouraged workers. Data on discouraged workers—persons who state a current desire for work but who are not actively seeking a job because they think they cannot find one—are available only for the United States, Canada, Sweden, and Italy. In the United States, the number of discouraged workers doubled from 1979 to 1.5 million (compared with around 10 million unemployed persons). The Canadian definition of discouraged workers is somewhat more restrictive than the U.S. definition.[5] Nevertheless, the number of discouraged workers, as in the United States, is currently equivalent to about 15 percent of the unemployed. In Sweden, the number of discouraged workers had been about half the number of unemployed since 1978.

In Italy, the number of persons not in the labor force who were classified, by Italian definitions, as discouraged jobseekers in 1981 was only about 80,000—equivalent to less than 10 percent of the number unemployed. In addition, however, approximately half the Italians who stated they were unemployed said they had not actively sought work within the last 30 days. These persons have been excluded from the unemployed by BLS, because U.S. concepts require active workseeking

Table 2. Civilian labor force, employment, and unemployment approximating U.S. concepts, 10 countries, 1974–81

[Numbers in thousands]

Year	United States	Canada	Australia	Japan	France	West Germany	Great Britain	Italy	Netherlands	Sweden
Labor force										
1974	91,949	9,639	6,053	52,440	21,590	26,050	24,850	20,080	4,780	4,037
1975	93,775	9,974	6,169	52,530	21,620	25,640	25,150	20,270	4,830	4,123
1976	96,158	10,206	6,244	53,100	21,800	25,400	25,350	20,490	4,890	4,149
1977	99,009	10,498	6,358	53,820	22,130	25,380	25,510	20,530	4,950	4,168
1978	102,251	10,882	6,389	54,600	22,300	25,520	25,650	20,630	[1]5,000	4,203
1979	104,962	11,207	6,480	55,210	22,500	[1]25,780	25,550	20,910	[1]5,100	4,262
1980	106,940	11,522	6,655	55,740	22,580	[1]26,030	25,380	21,210	[1]5,240	4,314
1981	108,670	11,830	6,771	56,320	[1]22,710	[1]26,190	[1]25,310	[1]21,380	[1]5,390	4,326
Labor force participation rate[2]										
1974	61.3	60.5	63.0	63.0	57.2	54.4	62.6	47.9	48.2	64.9
1975	61.2	61.1	63.2	62.4	56.7	53.4	63.2	47.9	49.3	65.9
1976	61.6	61.1	62.7	62.3	56.7	52.8	63.4	48.2	49.1	66.0
1977	62.3	61.5	62.7	62.5	57.1	52.4	63.4	48.0	49.0	65.9
1978	63.2	62.6	62.0	62.8	57.1	52.3	63.4	47.7	[1]48.8	66.1
1979	63.7	63.3	61.7	62.7	57.3	[1]52.3	62.8	47.8	[1]49.0	66.6
1980	63.8	64.0	62.2	62.6	57.1	[1]52.5	62.0	48.0	[1]49.5	67.1
1981	63.9	64.7	62.0	62.6	[1]57.1	[1]52.4	[1]61.4	[1]48.0	[1]50.5	[1]67.1
Employment										
1974	86,794	9,125	5,891	51,710	20,960	25,630	24,080	19,500	4,580	3,957
1975	85,846	9,284	5,866	51,530	20,710	24,750	24,000	19,620	4,580	4,056
1976	88,752	9,479	5,946	52,020	20,800	24,510	23,840	19,760	4,630	4,083
1977	92,017	9,648	6,000	52,720	21,040	24,460	23,890	19,790	4,700	4,093
1978	96,048	9,972	5,997	53,360	21,100	24,650	24,040	19,870	[1]4,740	4,100
1979	98,824	10,369	6,075	54,040	21,120	[1]25,000	24,100	20,100	[1]4,830	4,174
1980	99,303	10,655	6,250	54,600	21,120	[1]25,260	23,530	20,380	[1]4,920	4,228
1981	100,397	10,933	6,380	55,060	[1]20,970	[1]25,100	[1]22,440	[1]20,460	[1]4,910	4,218
Employment-population ratio[3]										
1974	57.8	57.3	61.3	62.2	55.5	53.5	60.7	46.6	46.3	63.6
1975	56.0	56.9	60.1	61.2	54.3	51.5	60.3	46.4	46.7	64.8
1976	56.8	56.7	59.7	61.1	54.1	50.9	59.6	46.5	46.5	64.9
1977	57.9	56.6	59.2	61.2	54.3	50.5	59.4	46.3	46.5	64.8
1978	59.3	57.4	58.1	61.3	54.1	50.5	59.4	45.9	[1]46.2	64.6
1979	59.9	58.6	57.9	61.4	53.8	[1]50.8	59.2	46.0	[1]47.4	65.3
1980	59.2	59.2	58.4	61.3	53.4	[1]50.9	57.4	46.1	[1]46.5	65.8
1981	59.0	59.8	58.4	61.2	[1]52.7	[1]50.2	[1]54.4	[1]46.0	[1]46.0	[1]65.4
Unemployment										
1974	5,156	514	162	730	630	420	770	560	180	80
1975	7,929	690	302	1,000	910	890	1,150	650	250	67
1976	7,406	727	298	1,080	1,000	890	1,510	730	260	66
1977	6,991	850	358	1,100	1,090	900	1,620	740	250	75
1978	6,202	911	402	1,240	1,200	870	1,610	760	[1]260	94
1979	6,137	838	405	1,170	1,380	[1]780	1,450	810	[1]270	88
1980	7,637	867	405	1,140	1,460	[1]770	1,850	830	[1]320	86
1981	8,273	898	390	1,260	[1]1,760	[1]1,090	[1]2,870	[1]900	[1]480	108
Unemployment rate										
1974	5.6	5.3	2.7	1.4	2.9	1.6	3.1	2.8	3.8	2.0
1975	8.5	6.9	4.9	1.9	4.2	3.5	4.6	3.2	5.2	1.6
1976	7.7	7.1	4.8	2.0	4.6	3.5	6.0	3.6	5.4	1.6
1977	7.1	8.1	5.6	2.0	5.0	3.5	6.4	3.6	5.1	1.8
1978	6.1	8.4	6.3	2.3	5.4	3.4	6.3	3.7	[1]5.2	2.2
1979	5.8	7.5	6.2	2.1	6.1	[1]3.0	5.7	3.9	[1]5.3	2.1
1980	7.1	7.5	6.1	2.0	6.5	[1]3.0	7.3	3.9	[1]6.1	2.0
1981	7.6	7.6	5.8	2.2	[1]7.7	[1]4.2	[1]11.3	[1]4.2	[1]8.9	2.5
Unemployment rate (as published)[4]										
1974	5.6	5.3	2.7	1.4	2.8	2.6	2.6	[5]5.4	3.5	2.0
1975	8.5	6.9	4.9	1.9	4.2	4.7	4.1	[5]5.9	5.0	1.6
1976	7.7	7.1	4.8	2.0	4.6	4.6	5.6	[5]6.7	5.3	1.6
1977	7.1	8.1	5.6	2.0	4.9	4.5	6.1	7.2	5.1	1.8
1978	6.1	8.4	6.3	2.2	5.3	4.3	6.0	7.2	5.0	2.2
1979	5.8	7.5	6.2	2.1	6.1	3.8	5.6	7.7	5.0	2.1
1980	7.1	7.5	6.1	2.0	6.4	3.8	7.3	7.6	5.8	2.0
1981	7.6	7.6	5.8	2.2	[1]7.5	5.5	11.3	8.4	9.0	2.5

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[1] Preliminary estimate based on incomplete data.

[2] Civilian labor force as a percent of civilian working age population.

[3] Civilian employment as a percent of civilian working age population.

[4] Published and adjusted data for the United States, Canada, and Australia are identical. For France, unemployment as a percent of the civilian labor force; for Japan, Italy, and Sweden, unemployment as a percent of the civilian labor force plus career military personnel; for West Germany, Great Britain, and the Netherlands, registered unemployed as a percent of employed wage and salary workers plus the unemployed. With the exception of France, which does not publish an unemployment rate, these are the usually published unemployment rates for each country.

[5] Italian Central Institute of Statistics estimate made for comparability with the revised labor force survey, introduced in 1977.

NOTE: Data for the United States relate to the population 16 years of age and over. Published data for France, West Germany, Italy, and the Netherlands relate to the population 14 years of age and over; for Sweden, to the population aged 16 to 74; and for Canada, Australia, and Japan, to the population 15 years of age and over. For Great Britain, the lower age limit was raised from 15 to 16 in 1973. The statistics have been adapted, insofar as possible, to the age at which compulsory schooling ends in each country. Therefore, the adjusted statistics for France relate to the population 16 and over and for West Germany and the Netherlands, to the population 15 years of age and over. The age limits of the statistics for Canada, Australia, Japan, Great Britain, and Italy coincide with the age limits of the published statistics. Statistics for Sweden remain at the lower age limit of 16, but have been adjusted to include persons 75 years of age and over.

in the last 4 weeks (unless on temporary layoff or waiting to begin a new job). Under U.S. concepts, however, many of these persons would be classified as discouraged workers.

Foreign worker joblessness high

Foreign workers continue to be an important factor in the unemployment rates in Western Europe, particularly in West Germany, France, and Sweden. In 1981, foreign workers made up 9.2 percent of the labor force in West Germany, 6.3 percent in France, and 5.4 percent in Sweden; and in all three countries, foreign nationals had substantially higher unemployment rates than native-born workers.

In France, the foreign worker unemployment rate was nearly twice the overall rate in March 1981. Unemployment among both foreign workers and the native born increased at similar rates from 1980. In West Germany, the foreign worker unemployment rate had been increasing more rapidly than the overall rate. In the first quarter of 1982, the rate for foreigners was 50 percent higher than the overall jobless rate; in 1980, it was about one-third higher. Jobless rates for migrant workers in Sweden had been about double the overall rates since the labor force survey began collecting the data in 1977. In the first quarter of 1982, the foreign worker rate reached 6 percent, while the overall rate rose to 3 percent.

FOOTNOTES

[1] For further information, see *International Comparisons of Unemployment*, Bulletin 1979, Appendix B (Bureau of Labor Statistics, 1978); and Supplement to Bulletin 1979, Appendix B (Bureau of Labor Statistics, 1982).

[2] Seasonally adjusted quarterly unemployment rates approximating U.S. concepts are not available for the Netherlands. However, the seasonally adjusted registered unemployment rate for the first quarter of 1982 indicates that the Dutch unemployment rate approximating U.S. concepts would probably be higher than the first-quarter U.S. rate.

[3] Department of Employment, "Special Employment and Training Measures," Press Notice, July 20, 1982, p. 1.

[4] In Italy, the employment ratio is understated because of the large pool of "black labor"—persons with an unreported job and whose labor force status is reported as unemployed or not in the labor force. For further information, see *International Comparisons of Unemployment*, p. 134.

[5] In Canada, discouraged workers must have actively sought work within the last 6 months. In the United States, recent jobseeking is not required in order to be classified as discouraged.

A new look at occupational wages within individual establishments

Analysis of wage structures shows that pay differences within individual establishments are generally smaller than those of the surveywide average

ROBERT W. VAN GIEZEN

Reports containing results of occupational wage surveys generally emphasize average earnings of individual jobs. While these types of data are useful to those interested in levels of pay and overall relationships among occupational averages, they do not show occupational pay differentials within individual establishments. For example, according to a Bureau of Labor Statistics report on pay levels in metropolitan areas, janitors averaged $4.87 an hour in July 1980 and tractor-trailer truckdrivers averaged $9.63, or nearly twice as much.[1] But, the average pay differential within individual establishments having both janitors and tractor-trailer drivers was only about 30 percent.

Data on internal pay alignments are of special concern to wage and salary administrators, labor-management contract negotiators, and those who develop or analyze internal wage structures. Although not necessarily to the degree indicated by the comparison of janitors and truckdrivers, pay setters may find a conflict between the twin objectives of gearing occupational pay rates to local labor market conditions and, at the same time, maintaining appropriate internal pay structures. Reconciliation of these conflicting objectives can be a major issue in wage and salary administration.[2] To satisfy the need for information on internal pay alignments, the Bureau of Labor Statistics now reports average occupational pay relationships within establishments in its *Area Wage Survey* publications.[3] This article presents an analysis of pay relatives for all metropolitan areas combined, and summarizes the within establishment differences among industry divisions, regions, and establishment size groups.[4]

Method an analysis

A simple numerical example may sharpen the distinction between the two approaches to analyzing occupational wage relationships. The following tabulation uses hypothetical data to illustrate pay relationships of surveywide averages versus those within establishments:

	Establishment			*All establishments*
	A	*B*	*C*	
Surveywide:				
Job 1				
Number of workers	5	1	3	9
Hourly pay	$4	$7	$6	$5
Job 2				
Number of workers	1	2	–	3
Hourly pay	$5	$11	–	$9
Within establishments:				
Number of workers	6	3	–	9
Pay relative	125	157	–	136

The traditional approach—comparison of published survey averages for individual jobs—is influenced by the numbers of workers in these jobs in establishments having different pay levels, as well as by differences in occupational pay levels. Using this approach, the survey average pay in all establishments for job 2 ($9) exceeds that for job 1 ($5) by 80 percent. However, when

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the focus shifts to the pay differentials *within* individual establishments, a 36-percent differential results. The differential is computed by averaging pay relatives (average earnings for job 2 as a percent of earnings for job 1) of all establishments, using combined employments of the two jobs as weights. The difference between within establishment and surveywide relationships is affected if an establishment has only one of the two jobs being compared. (Note that establishment C with only one of the jobs is not used in the computation.)

In this tabulation, the average pay difference within establishments (*intra-establishment* differential) is less than the difference between the survey averages for the two jobs (*inter-establishment* differential). However, this is not always the case. The inter-establishment differential would be smaller than the intra-establishment differential if a high-paying firm had a concentration of workers in a low-paying job, or if a low-paying firm had a concentration of workers in a high-paying job.

Intra- versus inter-establishment relationships

Both intra- and inter-establishment pay relationships are shown in table 1. These comprehensive matrices show average pay relationships between pairs of jobs. For example, reading across the row for tractor-trailer drivers, the pay relative of 129 in the janitors column means that the average pay advantage of the drivers over janitors in establishments with both these occupations was 29 percent. The figure in parenthesis, 198, means that the survey average for tractor-trailer drivers in all metropolitan areas was almost double that of janitors when data from all establishments (having either one or both of the jobs) were used in the calculation. Similarly, the data show intra- and inter-establishment pay advantages of tractor-trailer drivers over class B guards of 31 and 132 percent, respectively.[5] These differences between intra- and inter-establishment pay relatives are extreme cases. The comparisons were much closer for most occupational pairings.

A seeming inconsistency in the relationships among some occupations must be explained. For example, intra-establishment differences show a pay advantage of 5 percent for tractor-trailer drivers and of 7 percent for drivers of heavy trucks, when drivers of light trucks serve as a base. One might conclude that within individual establishments, drivers of heavy trucks earn more than drivers of tractor-trailers. However, direct comparisons between these two jobs show a 1-percent advantage in favor of tractor-trailer drivers. The incongruity is eliminated when it is recognized that establishments employing light-truck and tractor-trailer drivers are not necessarily the ones that employ both light- and heavy-truck drivers or both tractor-trailer and heavy-truck drivers. Each comparison is based on a different set of observations.

Intra-establishment differentials were generally smaller, and substantially so in a number of instances, than inter-establishment differences for the same occupations. This is revealed most strikingly in the comparisons between material movement and custodial occupations, where 90 percent of the inter-establishment differentials exceeded intra-establishment differences. For example, overall survey averages show that material handling laborers earned 71 percent more than class B guards, while the average intra-establishment advantage for these laborers was only 4 percent. These findings can be related to the industrial incidence of the two jobs: many material handling laborers are employed in highly paid and heavily unionized industries; conversely, many guards are employed by protection agencies paying near the Federal minimum wage. This employment pattern tends to widen the difference between surveywide averages but has no effect on occupational pay differentials within individual establishments.

Similar findings appear when the analysis is limited to various levels or classifications of the same occupation. Based on inter-establishment comparisons, drivers of tractor-trailer trucks averaged more than drivers of other trucks, up to 50 percent more than drivers of light trucks. However, when the earnings of truckdrivers within the same establishment are compared, the average differential is lowered to a maximum of 5 percent.

Occupational earnings differentials—whether measured by inter- or intra-establishment differentials—were lower among maintenance, toolroom, and powerplant jobs than any other occupational group studied. The relative homogeneity among these occupations can be explained by several factors. First, almost all of the jobs studied were at the journeyman level of skill, and the workers often were under single-rate pay systems. Second, more than 80 percent of the workers were employed in a single industry division—manufacturing. Finally, these occupations are among the most heavily unionized of the occupations studied. As will be shown later, the findings of this study generally are consistent with the idea that inter-occupational wage differentials are narrower in the union sector.

Except for higher paid tool-and-die makers and lower paid boiler tenders and maintenance helpers, pay rates within establishments were almost identical for all the maintenance, toolroom, and powerplant jobs. Nevertheless, overall survey averages were not reliable indicators of intra-establishment relationships. For example, the overall average pay of millwrights was 4 percent above that for tool-and-die makers, while the intra-establishment pay relationship was reversed—millwrights averaged 4 percent less than tool-and-die makers. This type

Table 1. Intra- and inter-establishment pay relationships between occupations, all metropolitan areas, July 1980

[Inter-establishment pay relative in parenthesis]

Occupations for which earnings are compared	Occupations for which average earnings equals 100								
	Truckdrivers				Power-truck operators (other than forklift)	Forklift operators	Receivers	Shippers and receivers	Warehouse workers
	Tractor-trailer	Heavy truck	Medium truck	Light truck					
Material movement and custodial									
Truckdrivers, tractor-trailer	100	101 (116)	102 (115)	105 (156)	106 (127)	108 (124)	108 (144)	109 (147)	109 (135)
Truckdrivers, heavy truck	99 (86)	100	106 (100)	107 (135)	106 (110)	107 (107)	114 (124)	111 (127)	111 (117)
Truckdrivers, medium truck	98 (87)	94 (100)	100	106 (135)	102 (110)	105 (107)	103 (125)	104 (128)	105 (117)
Truckdrivers, light truck	95 (64)	94 (74)	95 (74)	100	98 (81)	102 (79)	97 (92)	98 (94)	103 (87)
Power-truck operators (other than forklift)	94 (79)	94 (91)	98 (91)	102 (123)	100	100 (97)	99 (113)	102 (116)	102 (107)
Forklift operators	93 (81)	93 (94)	96 (93)	98 (126)	100 (103)	100	99 (116)	99 (119)	100 (109)
Receivers	92 (69)	88 (81)	97 (80)	104 (108)	101 (88)	101 (86)	100	96 (102)	102 (94)
Shippers and receivers	92 (68)	90 (79)	96 (78)	102 (108)	98 (86)	101 (84)	104 (98)	100	102 (92)
Warehouse workers	92 (74)	90 (86)	95 (85)	97 (115)	98 (94)	100 (91)	98 (106)	98 (109)	100
Shippers	91 (70)	90 (81)	99 (81)	105 (110)	103 (89)	103 (87)	101 (101)	101 (104)	104 (95)
Material handling laborers	91 (74)	90 (85)	90 (85)	91 (115)	97 (94)	96 (91)	92 (106)	94 (109)	92 (100)
Order fillers	90 (68)	86 (79)	92 (79)	96 (107)	99 (87)	97 (85)	93 (99)	96 (101)	96 (93)
Guards, class A	84 (63)	92 (73)	87 (72)	99 (98)	96 (80)	96 (78)	98 (90)	101 (92)	94 (85)
Shipping packers	84 (61)	71 (71)	84 (70)	91 (95)	97 (77)	98 (75)	90 (88)	92 (90)	94 (82)
Janitors, porters, and cleaners	77 (51)	72 (59)	78 (58)	82 (79)	92 (64)	90 (63)	86 (73)	86 (75)	84 (69)
Guards, class B	76 (43)	65 (50)	75 (50)	92 (67)	93 (55)	94 (53)	91 (62)	93 (64)	89 (58)

Occupations for which earnings are compared	Tool-and-die makers	Maintenance electricians	Maintenance machinists	Stationary engineers	Maintenance mechanics (machinery)	Maintenance sheet-metal workers	Maintenance pipefitters	Maintenance mechanics (motor vehicles)
Maintenance, toolroom, and powerplant								
Tool-and-die makers	100	103 (102)	104 (106)	104 (110)	105 (109)	104 (97)	104 (98)	104 (106)
Maintenance electricians	97 (98)	100	100 (104)	101 (108)	101 (107)	101 (96)	102 (97)	103 (105)
Maintenance machinists	96 (95)	100 (96)	100	102 (104)	102 (103)	101 (92)	102 (93)	103 (101)
Stationary engineers	96 (91)	99 (93)	98 (96)	100	100 (99)	100 (89)	101 (89)	101 (97)
Maintenance mechanics (machinery)	96 (92)	99 (94)	98 (97)	100 (101)	100	100 (90)	101 (91)	101 (98)
Maintenance sheet-metal workers	96 (103)	99 (105)	99 (109)	100 (113)	100 (112)	100	100 (101)	100 (109)
Maintenance pipefitters	96 (102)	98 (103)	99 (108)	99 (112)	99 (110)	100 (99)	100	100 (108)
Maintenance mechanics (motor vehicles)	96 (94)	97 (95)	97 (99)	99 (103)	99 (102)	100 (91)	100 (92)	100
Millwrights	96 (104)	98 (106)	97 (110)	99 (114)	99 (113)	100 (101)	100 (102)	100 (111)
Machine-tool operators (toolroom)	95 (99)	98 (100)	97 (104)	100 (108)	99 (107)	101 (96)	100 (97)	101 (105)
Maintenance carpenters	94 (90)	97 (92)	97 (96)	98 (99)	98 (98)	99 (88)	99 (89)	100 (96)
Maintenance painters	93 (87)	94 (88)	94 (92)	96 (96)	94 (94)	97 (85)	97 (85)	97 (93)
Boiler tenders	90 (79)	92 (80)	91 (83)	90 (86)	93 (85)	94 (77)	95 (77)	95 (84)
Maintenance trades helpers	77 (75)	80 (76)	82 (79)	83 (82)	82 (81)	84 (73)	85 (73)	82 (79)

Occupations for which earnings are compared	Computer systems analysts (business)			Computer programmers (business)			Computer operators		
	Class A	Class B	Class C	Class A	Class B	Class C	Class A	Class B	Class C
Professional and technical									
Computer systems analysts, class A	100	119 (116)	141 (134)	129 (124)	149 (147)	175 (177)	162 (161)	190 (196)	220 (227)
Computer systems analysts, class B	84 (86)	100	120 (116)	111 (107)	129 (127)	149 (153)	137 (139)	161 (169)	188 (196)
Computer systems analysts, class C	71 (75)	84 (86)	100	94 (92)	112 (109)	128 (132)	117 (120)	136 (146)	156 (170)
Computer programmers analysts, class A	78 (81)	90 (94)	106 (108)	100	122 (119)	145 (143)	130 (130)	155 (158)	184 (184)
Computer programmers analysts, class B	67 (68)	78 (79)	89 (91)	82 (84)	100	122 (120)	109 (110)	131 (133)	155 (155)
Computer programmers analysts, class C	57 (57)	67 (66)	78 (76)	69 (70)	82 (83)	100	93 (91)	111 (111)	131 (129)
Computer operators, class A	62 (62)	73 (72)	86 (83)	77 (77)	92 (91)	107 (110)	100	121 (121)	141 (141)
Computer operators, class B	53 (51)	62 (59)	74 (69)	64 (63)	76 (75)	90 (90)	83 (82)	100	121 (116)
Computer operators, class C	45 (44)	53 (51)	64 (59)	54 (54)	64 (65)	77 (78)	71 (71)	83 (86)	100
Peripheral equipment operators	47 (48)	57 (55)	68 (64)	59 (59)	68 (70)	76 (84)	72 (77)	83 (93)	93 (108)
Computer data librarians	48 (45)	57 (53)	68 (61)	60 (56)	69 (67)	80 (80)	76 (73)	88 (89)	103 (103)
Electronics technicians, class A	76 (80)	91 (92)	109 (107)	90 (99)	106 (117)	127 (141)	116 (129)	139 (156)	162 (182)
Electronics technicians, class B	65 (70)	77 (81)	91 (94)	75 (87)	89 (103)	104 (124)	113 (113)	127 (137)	142 (159)
Electronics technicians, class C	54 (51)	64 (59)	76 (68)	61 (63)	74 (75)	85 (90)	88 (82)	106 (99)	119 (115)
Registered industrial nurses	65 (67)	74 (78)	87 (90)	79 (83)	92 (99)	106 (119)	97 (108)	115 (132)	130 (153)

Occupations for which earnings are compared	Secretaries					Stenographers		Transcribing-machine typists	Typists	
	Class A	Class B	Class C	Class D	Class E	Senior	General		Class A	Class B
Office clerical										
Secretaries, class A	100	116 (109)	132 (119)	146 (133)	153 (144)	143 (123)	160 (133)	157 (165)	162 (149)	180 (184)
Secretaries, class B	86 (91)	100	117 (109)	129 (121)	137 (132)	131 (112)	142 (122)	142 (151)	141 (136)	158 (168)
Secretaries, class C	76 (84)	86 (92)	100	115 (111)	122 (121)	118 (103)	128 (112)	126 (139)	125 (125)	141 (154)
Secretaries, class D	69 (75)	78 (82)	87 (90)	100	113 (109)	111 (92)	120 (100)	116 (125)	118 (112)	131 (138)
Secretaries, class E	65 (69)	73 (76)	82 (83)	88 (92)	100	109 (85)	116 (92)	108 (115)	113 (104)	125 (127)
Stenographers, senior	70 (82)	77 (89)	85 (97)	90 (108)	92 (118)	100	117 (109)	111 (135)	109 (122)	127 (150)
Stenographers, general	63 (75)	71 (82)	78 (89)	83 (100)	86 (106)	86 (92)	100	99 (124)	99 (112)	112 (138)
Transcribing-machine typists	64 (60)	71 (66)	79 (72)	86 (80)	93 (87)	90 (74)	101 (81)	100	103 (90)	113 (111)
Typists, class A	62 (67)	71 (73)	80 (80)	85 (89)	88 (97)	92 (82)	101 (89)	97 (111)	100	117 (123)
Typists, class B	56 (54)	63 (60)	71 (65)	76 (72)	80 (79)	79 (67)	89 (73)	89 (90)	85 (81)	100

Occupations for which average earnings equals 100							Occupations for which earnings are compared
Shippers	Material handling laborers	Order fillers	Guards, Class A	Shipping packers	Janitors, porters, and cleaners	Guards, Class B	
							Material movement and custodial
110 (142)	110 (136)	111 (146)	119 (160)	119 (164)	129 (198)	131 (232)	Truckdrivers, tractor-trailer
111 (123)	112 (117)	116 (126)	108 (138)	141 (142)	139 (171)	154 (200)	Truckdrivers, heavy truck
101 (123)	111 (117)	109 (127)	114 (138)	119 (142)	128 (171)	133 (201)	Truckdrivers, medium truck
95 (91)	110 (87)	104 (94)	101 (102)	110 (105)	121 (127)	109 (149)	Truckdrivers, light truck
97 (112)	103 (107)	101 (115)	104 (126)	103 (129)	108 (156)	108 (183)	Power-truck operators (other than forklift)
97 (115)	104 (110)	103 (118)	104 (129)	102 (133)	111 (160)	106 (187)	Forklift operators
98 (99)	109 (94)	108 (102)	102 (111)	111 (114)	116 (137)	109 (161)	Receivers
99 (96)	107 (92)	105 (99)	99 (108)	109 (111)	116 (134)	107 (157)	Shippers and receivers
96 (105)	108 (100)	104 (108)	107 (118)	106 (121)	119 (146)	112 (171)	Warehouse workers
100	109 (95)	106 (103)	103 (112)	111 (116)	115 (139)	112 (163)	Shippers
91 (105)	100	100 (108)	99 (118)	100 (121)	109 (148)	104 (171)	Material handling laborers
94 (97)	100 (93)	100	106 (109)	101 (112)	112 (135)	105 (159)	Order fillers
98 (89)	101 (85)	95 (92)	100	103 (103)	109 (124)	120 (145)	Guards, class A
90 (87)	100 (83)	99 (89)	97 (97)	100	106 (120)	100 (141)	Shipping packers
87 (72)	91 (69)	89 (74)	92 (81)	95 (83)	100	99 (117)	Janitors, porters, and cleaners
89 (61)	96 (58)	95 (63)	83 (69)	100 (71)	101 (85)	100	Guards, class B

Millwrights	Machine-tool operators (toolroom)	Maintenance carpenters	Maintenance painters	Boiler tenders	Maintenance trades helpers	
						Maintenance, toolroom, and powerplant
104 (95)	105 (101)	106 (111)	107 (115)	111 (127)	130 (134)	Tool-and-die makers
102 (95)	102 (100)	103 (109)	106 (113)	108 (125)	124 (132)	Maintenance electricians
103 (91)	103 (96)	104 (105)	107 (109)	110 (120)	123 (127)	Maintenance machinists
101 (88)	100 (92)	102 (101)	104 (105)	111 (116)	121 (122)	Stationary engineers
101 (89)	101 (93)	102 (102)	106 (106)	108 (117)	123 (123)	Maintenance mechanics (machinery)
100 (99)	99 (104)	101 (114)	103 (118)	107 (131)	119 (138)	Maintenance sheet-metal workers
100 (98)	100 (108)	101 (113)	103 (117)	106 (129)	117 (136)	Maintenance pipefitters
100 (90)	99 (95)	100 (104)	103 (108)	105 (119)	121 (126)	Maintenance mechanics (motor vehicles)
100	99 (105)	101 (115)	103 (129)	104 (132)	116 (139)	Millwrights
101 (95)	100	101 (109)	103 (113)	106 (125)	118 (132)	Machine-tool operators (toolroom)
99 (87)	99 (92)	100	104 (104)	106 (115)	118 (121)	Maintenance carpenters
97 (84)	97 (88)	97 (96)	100	101 (111)	114 (117)	Maintenance painters
96 (76)	94 (80)	95 (87)	99 (90)	100	111 (105)	Boiler tenders
87 (72)	85 (76)	85 (83)	88 (86)	90 (95)	100	Maintenance trades helpers

Peripheral equipment operators	Computer data librarians	Electronics technicians			Registered industrial nurses	
		Class A	Class B	Class C		
						Professional and technical
212 (210)	210 (220)	132 (125)	154 (143)	186 (197)	155 (149)	Computer systems analysts, class A
176 (181)	177 (190)	110 (108)	130 (123)	156 (170)	135 (128)	Computer systems analysts, class B
147 (157)	148 (164)	91 (93)	109 (106)	131 (147)	116 (111)	Computer systems analysts, class C
170 (170)	168 (178)	111 (101)	133 (115)	165 (159)	126 (120)	Computer programmers analysts, class A
146 (143)	144 (150)	94 (85)	112 (97)	135 (134)	109 (101)	Computer programmers analysts, class B
132 (119)	126 (125)	79 (71)	96 (81)	118 (111)	93 (84)	Computer programmers analysts, class C
139 (130)	132 (136)	86 (78)	89 (88)	113 (122)	103 (92)	Computer operators, class A
121 (107)	113 (112)	72 (64)	78 (73)	95 (101)	87 (76)	Computer operators, class B
107 (92)	97 (97)	62 (55)	70 (63)	84 (87)	77 (65)	Computer operators, class C
100	96 (105)	68 (60)	69 (68)	80 (94)	82 (71)	Peripheral equipment operators
104 (95)	100	70 (57)	75 (65)	88 (90)	80 (68)	Computer data librarians
148 (168)	143 (176)	100	119 (114)	142 (157)	115 (119)	Electronics technicians, class A
146 (147)	133 (154)	84 (88)	100	122 (138)	104 (104)	Electronics technicians, class B
126 (107)	114 (112)	70 (64)	82 (72)	100	85 (76)	Electronics technicians, class C
122 (141)	125 (148)	87 (84)	96 (98)	118 (132)	100	Registered industrial nurses

File clerks			Messengers	Switchboard operators	Switchboard operator-receptionists	Order clerks		Payroll clerks	Key entry operators		
Class A	Class B	Class C				Class A	Class B		Class A	Class B	
											Office clerical
152 (147)	182 (188)	203 (214)	190 (187)	149 (166)	152 (171)	124 (122)	149 (160)	136 (139)	143 (139)	160 (165)	Secretaries, class A
137 (135)	158 (172)	176 (195)	167 (171)	135 (152)	137 (156)	110 (112)	135 (146)	121 (127)	128 (127)	143 (151)	Secretries, class B
123 (124)	141 (158)	159 (180)	149 (157)	120 (139)	125 (143)	100 (103)	120 (134)	108 (117)	113 (117)	129 (139)	Secretries, class C
117 (111)	131 (142)	144 (161)	139 (141)	113 (125)	115 (129)	92 (92)	109 (120)	101 (105)	105 (105)	121 (125)	Secretaries, class D
108 (102)	122 (131)	135 (148)	134 (130)	108 (115)	108 (119)	89 (85)	109 (111)	97 (96)	99 (97)	112 (115)	Secretries, class E
103 (120)	122 (154)	142 (175)	129 (152)	103 (135)	111 (139)	92 (100)	101 (130)	96 (113)	100 (114)	114 (135)	Stenographers, senior
95 (111)	108 (141)	122 (160)	116 (140)	96 (124)	102 (128)	82 (92)	96 (120)	88 (104)	92 (105)	102 (124)	Stenographers, general
101 (89)	114 (114)	126 (129)	121 (113)	98 (100)	102 (103)	77 (74)	101 (96)	87 (84)	94 (84)	104 (100)	Transcribing-machine typists
99 (99)	114 (126)	127 (143)	121 (125)	97 (111)	101 (114)	82 (82)	97 (107)	87 (93)	92 (93)	104 (111)	Typists, class A
87 (80)	100 (103)	111 (116)	106 (102)	88 (90)	91 (93)	74 (67)	89 (87)	79 (76)	81 (76)	92 (90)	Typists, class B

Table 1. Continued—Intra- and inter-establishment pay relationships between occupations, all metropolitan areas, July 1980

[Inter-establishment pay relative in parenthesis]

Occupations for which earnings are compared	Occupations for which average earnings equals 100									
	Secretaries					Stenographers		Transcribing-machine typists	Typists	
	Class A	Class B	Class C	Class D	Class E	Senior	General		Class A	Class B
Office clerical										
File clerks, class A	66 (68)	73 (74)	81 (81)	85 (90)	92 (98)	97 (83)	105 (90)	99 (112)	101 (101)	115 (125)
File clerks, class B	55 (53)	63 (58)	71 (63)	76 (70)	82 (76)	82 (65)	92 (71)	87 (96)	88 (79)	100 (97)
File clerks, class C	49 (47)	57 (51)	63 (56)	69 (62)	74 (67)	70 (57)	82 (62)	80 (77)	78 (70)	90 (86)
Messengers	53 (54)	60 (59)	67 (64)	72 (71)	75 (77)	77 (66)	87 (71)	82 (89)	83 (80)	95 (98)
Switchboard operators	67 (60)	74 (66)	83 (72)	89 (80)	93 (87)	97 (74)	104 (80)	102 (100)	103 (90)	114 (111)
Switchboard operator-receptionists	66 (59)	73 (64)	80 (70)	87 (78)	92 (84)	90 (72)	98 (78)	98 (97)	99 (87)	110 (107)
Order clerks, class A	81 (82)	91 (90)	100 (97)	109 (109)	113 (118)	109 (100)	123 (109)	129 (135)	123 (122)	135 (150)
Order clerks, class B	67 (63)	74 (69)	84 (75)	92 (83)	92 (90)	99 (77)	105 (83)	99 (104)	103 (93)	112 (115)
Payroll clerks	74 (72)	83 (79)	93 (86)	99 (96)	103 (104)	104 (88)	114 (96)	115 (119)	115 (107)	126 (132)
Key entry operators, class A	70 (72)	78 (79)	88 (85)	95 (95)	101 (103)	100 (88)	109 (96)	107 (119)	108 (107)	124 (132)
Key entry operators, class B	62 (60)	70 (66)	77 (72)	83 (80)	89 (87)	88 (74)	98 (81)	96 (100)	96 (90)	109 (111)

NOTE: See page 23 for a description of these pay relationships and method of computation.

of leadership reversal occurred in about a fifth of the observations.

Inter-establishment pay differences for the professional and technical group also were often poor indicators of intra-establishment pay differentials. Although a tenth of the comparisons between these two measures yielded identical results, differences were 10 points or more in almost a fourth of the observations.

The office clerical group—with five classes of secretaries, three classes of file clerks, and two classes each of stenographers, typists, order clerks, and key entry operators—provides an opportunity to examine wage relationships among workers in the same occupation, but with differing amounts of responsibility. For example, the five classes of secretaries are defined according to the secretary's responsibility and supervisor's position in the organization.[6] Within establishments, each level of secretary provided an average pay gain of from 13 to 17 percent; consequently, the highest level—secretary to board chairman or company president of a medium size firm—averaged 53 percent more than the lowest level—a secretary to a staff specialist or supervisor of a small unit.

In all of the comparisons among the secretaries, pay differentials within establishments exceeded those between surveywide averages. This relationship was also found among other occupations, mainly in the white-collar field. Intra-establishment differences were larger than inter-establishment differences in about two-fifths of the professional-technical and a fourth of the office clerical comparisons. In contrast, this pattern occurred in only 8 percent of both the material movement-custodial and maintenance-toolroom-powerplant comparisons.

As noted, average occupational pay differentials within establishments will exceed those between published averages where high-paying firms have a disproportionately large number of employees in less skilled jobs reported for the survey, or where low-paying firms have a disproportionately large number of employees in more skilled jobs. These conditions may be more common among white-collar jobs, which are spread across industries with differing pay levels.[7]

Differences by sector

Intra-establishment pay relationships differed among the industry divisions, regions, and establishment size groups studied separately. Within establishments, pay differentials between jobs were narrower in manufacturing, the North Central region, and large establishments, and were broader in nonmanufacturing, the South, and small establishments. (These findings, of course, are interrelated.)

To summarize these relationships, intra-establishment relatives were calculated for each industry, region, and establishment size group studied. The absolute difference for each occupational comparison was computed by subtracting the pay relative from 100. Ignoring the sign of the remainder, these differences were totaled and divided by the number of comparisons to find an average difference.[8] Therefore, a small average difference in table 2 indicates a narrow wage structure and a large difference indicates a broad wage structure.

Professional-technical and office clerical jobs had the highest average differences, 29 and 19 points, respectively. The average difference for maintenance, toolroom, and powerplant occupations was 5 points, and for material movement and custodial jobs, 8 points. These results are not surprising, considering the wide range of skill levels in the white-collar field. For example, professional and technical jobs ranged from highly skilled systems analysts responsible for complex problems to entry-level computer operators. These skill distinctions were not as pronounced among the blue-collar occupations.

Differences in occupational pay relationships were small but consistent among the industries, regions, and size-of-establishment groupings studied. These differ-

Occupations for which average earnings equals 100											Occupations for which earnings are compared
File clerks			Messengers	Switchboard operators	Switchboard operator-receptionists	Order clerks		Payroll clerks	Key entry operators		
Class A	Class B	Class C				Class A	Class B		Class A	Class B	
											Office clerical
100	117 (128)	131 (145)	124 (127)	100 (113)	97 (116)	83 (83)	92 (108)	88 (94)	95 (95)	106 (112)	File clerks, class A
85 (78)	100	116 (113)	107 (99)	87 (80)	88 (91)	69 (65)	85 (85)	76 (74)	81 (74)	91 (88)	File clerks, class B
77 (69)	86 (88)	100	96 (87)	81 (78)	82 (80)	63 (57)	82 (75)	69 (65)	73 (65)	83 (77)	File clerks, class C
81 (79)	94 (101)	104 (114)	100	82 (89)	85 (91)	70 (65)	83 (85)	74 (74)	78 (75)	87 (89)	Messengers
100 (89)	114 (114)	124 (129)	123 (113)	100	100 (103)	78 (74)	95 (96)	88 (84)	95 (84)	104 (100)	Switchboard operators
104 (86)	114 (110)	123 (125)	118 (100)	100 (97)	100	78 (72)	94 (93)	88 (81)	93 (82)	103 (97)	Switchboard operator-receptionists
20 (121)	145 (154)	160 (175)	143 (153)	127 (136)	128 (140)	100	128 (131)	106 (114)	112 (114)	133 (135)	Order clerks, class A
108 (92)	118 (118)	121 (134)	120 (117)	105 (104)	107 (107)	78 (77)	100	92 (87)	96 (87)	105 (104)	Order clerks, class B
114 (106)	132 (136)	146 (154)	134 (135)	113 (120)	113 (123)	94 (88)	109 (115)	100	106 (100)	117 (119)	Payroll clerks
106 (106)	123 (135)	137 (153)	128 (134)	105 (119)	107 (123)	89 (88)	104 (115)	95 (100)	100	120 (119)	Key entry operators, class A
94 (89)	109 (114)	121 (129)	115 (113)	97 (100)	97 (103)	75 (74)	96 (96)	86 (84)	83 (84)	100	Key entry operators, class B

ences were larger in nonmanufacturing than manufacturing industries for three of the occupational groups. (Because of insufficient data for nonmanufacturing industries, such a comparison could not be made for maintenance, toolroom, and powerplant jobs.)

Regional differences in occupational wage structures were relatively minor, as were the differences by size of establishment.[9] Nevertheless, the South had the largest differentials for 2 of the 4 occupational groups, and tied for the largest for a third group.[10] Among the other three regions, the North Central area had the smallest occupational wage differentials for the two blue-collar groups and for office clerical workers. Occupational pay differences in large establishments, on average, were smaller for all occupational groups, except office clerical jobs—where no size-of-establishment variation was found.

Although the impact of unionization on wage structures could not be directly examined in this study, the data suggest the possibility that internal occupational pay differentials are smaller where labor-management agreements are in effect. Manufacturing, non-Southern regions, and large establishments generally had both smaller pay differences and a higher concentration of workers under labor-management agreements than did nonmanufacturing, the South, and small establishments. An earlier study of production worker earnings in 49 manufacturing and 6 mining industries also showed lower dispersion rates among highly unionized industries.[11] This earlier study, however, used the more traditional analysis of union impact by focusing on inter-establishment variations.[12]

Cost-of-living adjustment clauses found in many union contracts may contribute to a lower wage dispersion in the union sector.[13] These clauses provide for periodic wage adjustments in keeping with changes in a designated price index, such as the Bureau's Consumer Price Index. They usually call for uniform cents-per-hour wage adjustments to all covered employees, and thus tend to reduce percentage differences among occupational wages. ☐

Table 2. Average intra-establishment pay differences among occupations, by selected characteristics, July 1980

[In percentage points]

Characteristics	Material movement and custodial	Maintenance, toolroom, and powerplant	Professional and technical	Office clerical
All establishments	8	5	29	19
Industry:				
Manufacturing	7	5	26	17
Nonmanufacturing	11	([1])	32	20
Region:				
Northeast	9	6	31	20
South	9	7	32	20
North Central	8	5	26	18
West	10	6	29	19
Establishment size:				
Fewer than 1,000 workers	10	6	34	19
1,000 workers or more	7	5	27	19

[1] Data do not meet publication criteria.

NOTE: See page 25 for explanation of method of computation and footnote 4 of text for definitions of industry divisions and regions.

——— *FOOTNOTES* ———

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[1] See *Occupational Earnings in All Metropolitan Areas, July 1980*, Summary 81-11 (Bureau of Labor Statistics, 1981), p. 3.

[2] See E. Robert Livernash, "The Internal Wage Structure," in George W. Taylor and Frank C. Pierson, eds., *New Concepts in Wage Determination* (New York, McGraw-Hill Book Co., 1957), pp. 155–58.

[3] See, for example, tables A-8 to A-11 of *Area Wage Survey: Chicago, Ill., Metropolitan Area, March 1982*, Bulletin 3015–9.

[4] All data in this article refer to the 262 Standard Metropolitan Statistical Areas of the United States (excluding Alaska and Hawaii), as defined by the Office of Management and Budget through February 1974. BLS surveys are conducted annually in a sample of 70 areas se-

lected and appropriately weighted to represent all 262 areas. Establishments employing 50 workers or more are surveyed in six broad industry divisions: manufacturing; transportation, communication, and other public utilities; wholesale trade; retail trade; finance, insurance, and real estate; and selected services. In the 13 largest areas, the minimum etablishment size is 100 workers in manufacturing; transportation, communication, and other public utilities; and retail trade. Major exclusions from the survey are construction, extractive industries, and government. The regions are defined as follows: *Northeast*—Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; *South*—Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; *North Central*—Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; and *West*—Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[5] Intra-establishment pay relationships were computed using the following procedures: (1) establishments employing workers in both of the paired occupations were identified; (2) establishment pay levels (averages) for the two occupations were weighted by the combined employment of both jobs to reflect each establishment's contribution to the totals used in the comparison; (3) the weighted pay levels of the two jobs were summed separately across establishments; and (4) each total was divided by the other and the quotients multiplied by 100 to produce the two intra-establishment pay relatives shown for each job pairing.

[6] Job descriptions for the occupations included in area wage surveys are available from the Bureau's regional offices listed on the front cover.

[7] An earlier Bureau study—which compared all occupations surveyed to janitors—had similar findings. In many cases, pay differences between white-collar jobs and janitors were larger when measured within establishments than when overall averages were compared. On the other hand, in almost all blue-collar comparisons, intra-establishment differentials were smaller than those between survey averages. See Virginia L. Ward, "Measuring wage relationships among selected occupations," *Monthly Labor Review*, May 1980, pp. 21–25.

[8] For a further discussion of this technique, see Mark S. Sieling, "Interpreting pay structures through matrix application," *Monthly Labor Review*, November 1979, pp. 41–45.

[9] Regional patterns are composites of numerous individual areas, each with a distinct industrial and occupational pattern. For local pay setting purposes, data similar to those in table 1 are published annually for 70 areas in individual area wage survey bulletins.

[10] This confirms an earlier conclusion of H. M. Douty that "Wage differentials based on skill level tend to be greater within the South than in the remainder of the country. . ." See H. M. Douty, "Wage Differentials: Forces and Counter Forces," *Monthly Labor Review*, March 1968, p. 76.

[11] Carl B. Barsky and Martin E. Personick, "Measuring wage dispersion: pay ranges reflect industry traits," *Monthly Labor Review*, April 1981, pp. 35–41.

[12] Unionism, of course, is only one of a number of influences on occupational wage differentials. Its impact is by no means a settled issue. For a sample of the literature on this subject, see Clark Kerr, "Wage Relationships—The Comparative Impact of Market and Power Forces," in John T. Dunlop, ed., *The Theory of Wage Determination* (New York, St. Martin's Press, 1957), pp. 173–93; Lloyd G. Reynolds and Cynthia H. Taft, *The Evolution of Wage Structure* (New Haven, Yale University Press, 1956); Sherwin Rosen, "Unionism and the Occupational Wage Structure in the United States," *International Economic Review*, June 1970, pp. 269–86; and Robert N. Schoeplein, "Secular Changes in the Skill Differential in Manufacturing, 1952–1973," *Industrial and Labor Relations Review*, April 1977, pp. 314–24.

[13] Cost-of-living adjustment clauses cover more than half of the workers under major collective bargaining agreements. See Edward Wasilewski, "Scheduled wage increases and cost-of-living provisions in 1980," *Monthly Labor Review*, January 1980, p. 10.

Import price indexes for crude petroleum

On the basis of data reported by firms to the U.S. Department of Energy, BLS has developed measures of monthly price change for oil imports

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The Bureau of Labor Statistics' International Price Program is responsible for calculating import and export price indexes for the United States. These indexes are statistical measures of the average change in prices of commodities that are traded between the United States and the rest of the world.

The program was originally funded by Congress in 1970. Price indexes were first published for exports in 1971, and for imports, in 1973. As of June 1982, published indexes accounted for 71 percent of the value of exports and 96 percent of the value of imports. Plans for the program include provisions for increasing the share of exports and imports for which indexes are calculated to 100 percent.

This article describes the International Price Program's price index for crude petroleum imports. The index, which was first published in November 1981,[1] is calculated using price and quantity data collected by the U.S. Department of Energy.

The data in table 1 show how important crude petroleum imports have become to the U.S. economy. In 1970, the United States imported 545 million barrels of crude petroleum at a cost of $1.3 billion. These imports accounted for 13.4 percent of the total U.S. supply of crude petroleum (imports plus domestic production) and 3.2 percent of total merchandise imports. In 1981, U.S. imports of crude petroleum, which measured 1,763 million barrels and cost $61.9 billion, accounted for 36.1 percent of the total U.S. supply of crude petroleum and 23.7 percent of total merchandise imports.

The following discussion is divided into sections that focus on different aspects of calculating and publishing the index. These include: (1) the construction of the index; (2) the specification of items in the index market basket; (3) the prices and weights that are used to compute the index; (4) the sources of the data; (5) the results of index calculations for the months January 1976 to May 1982; and (6) the policy for revising previously published index values.

Construction of the index. The price index for U.S. imports of crude petroleum is a Laspeyres fixed base-weighted index. The index may be interpreted as a measure of the change in the cost of buying the index market basket, or as a measure of the average change in the prices of items in the index market basket. For this index, the market basket consists of the various crudes—

Table. 1. U.S. imports of crude petroleum, 1970–81

Year	Crude imports (millions of barrels)	Crude imports (billions of dollars)	Crude imports as a percent of total U.S. supply	Crude imports as a percent of total imports
1970	545	1.3	13.4	3.2
1971	676	1.7	16.4	3.7
1972	901	2.4	20.7	4.3
1973	1,294	4.2	27.8	6.1
1974	1,367	15.3	29.9	15.3
1975	1,585	18.4	34.1	19.1
1976	2,050	25.5	40.8	21.1
1977	2,520	33.6	45.6	22.9
1978	2,392	32.1	42.9	18.7
1979	2,467	46.1	44.1	22.3
1980	1,977	62.0	38.6	25.7
1981	1,763	61.9	36.1	23.7

SOURCE: Bureau of the Census, *U.S. General Imports*, FT135, and U.S. Department of Energy, *1981 Annual Report to Congress.*

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for example, Saudi Arabian Light, Mexican Isthmus, and Nigerian Bonny Light—that refiners and other buyers imported into the United States in 1980. A simplified version of the formula for computing the index is:

$$(1)\ I^t = \frac{\Sigma_{ij} P^t_{ij} \times Q^0_{ij}}{\Sigma_{ij} P^0_{ij} \times Q^0_{ij}} \times 100$$

$$(2)\ = \frac{\Sigma_{ij} W_{ij} \times P_{ij}{}^t / P_{ij}{}^0}{\Sigma_{ij} W_{ij}} \text{ sf,10} \times 100$$

$$\text{for } W_{ij} = P^0_{ij} \times Q^0_{ij}$$

where:

I^t = the index in month *t*;

P^0_{ij} = the price, in dollars per barrel, that company *i* paid for shipments of crude type *j* imported in month *0* (the base period);

P^t_{ij} = the price, in dollars per barrel, that company *i* paid for shipments of crude type *j* imported in month *t* (the comparison period);

Q^0_{ij} = the quantity, in barrels, of crude type *j* that company *i* imported in month *0* (the base period);

W_{ij} = the dollar value weight assigned to crude type *j* imported by company *i*.

Specification of items in the market basket. Price indexes of the Laspeyres type are designed to measure changes in the cost of a given market basket (as opposed of differences in the cost of different market baskets). In the calculations for the crude petroleum index, this is accomplished by ensuring that the items that correspond to the prices in the numerator and denominator of each term in expression (2) above have identical specifications in all months.

The specification of each item in the market basket consists of two pieces of information. These are (1) a crude stream identifier, which shows where the crude in each import shipment was produced (the crude stream accounts for the essential quality characteristics of each crude, such as specific gravity, pour point, sulfur content, and trace element content); and (2) an identifier for the purchasing party. The inclusion of these two pieces of information in the specification ensures that when prices are compared over time they are compared for identically specified items.

Prices. The prices used to compute the index are the amounts, in dollars per barrel, that importing companies pay for their crude, plus any charges incurred in placing the crude on board ship at the foreign port of loading. Prices do not include any of the costs involved in transporting crude from the foreign port to the U.S. port of entry.

Weights. The weight assigned to each item in the market basket is the dollar value of all shipments of that item that were imported into the United States in 1980. In the process of computing the index for the current month, the weights are normalized to account for items in the market basket that were not imported. This is equivalent to imputing a price change equal to the weighted average price change of all items that were imported in the current month, as measured by the change in the index, to items that were not imported in the current month.

Data sources. The data used to compute the index are collected by the U.S. Department of Energy on the monthly Transfer Pricing Report (Form ERA–51, Schedule B). Reporting firms are major importers (those that import 500,000 or more barrels of crude in a given month) and firms that acquire imported crude from affiliated entities. About 40 firms file the report on a regular basis. In 1980, the data in the reports filed by these firms accounted for approximately 90 percent, in dollar terms, of all U.S. imports of crude petroleum.

Firms have 45 days after the end of a given month to file their reports with the Department of Energy. At the Energy Department, data from the reports are keypunched and screened for simple arithmetic errors and errors in transcription. In cases involving apparent errors in the data that cannot be resolved on the basis of the available information, the Department contacts the reporting firm to verify the data that have been reported and, if necessary, obtains the correct information.

Approximately 60 days after the end of a given month, the Department of Energy provides BLS with a computer tape containing these data. At BLS, the data are screened again. Any questions that arise with respect to the data are referred to the Department of Energy and resolved before the data are used to compute the index. The processing associated with computing the index is generally complete within 10 days of receipt of the tape from the Energy Department.

Index values, January 1976 to May 1982. Table 2 shows index values that have been calculated for 11 categories of crude petroleum imports. These include imports from all countries, from members of the Organization of Petroleum Exporting Countries (OPEC)[2] and from nonmembers, and from selected regions and countries. The number of regions and individual countries for which index values are shown is limited by the availability of price data. In keeping with BLS standards for maintaining the confidentiality of company level data, index values that were calculated with prices from fewer than three companies are not shown.

As measured by the index for imports from all countries, prices of imported crude petroleum have nearly tripled since January 1976, the first month for

Table 2. Price indexes of U.S. imports of crude petroleum by source, January 1976 to May 1982

[June 1977 = 100]

Year and month	Imports from all countries	OPEC	Non-OPEC	Selected regions				Selected countries			
				Africa	Far East	Latin America	Middle East	Indonesia	Mexico	Nigeria	Saudi Arabia
1976: January	91.7	92.0	90.6	89.5	92.6	91.0	94.7	92.9	91.6	89.1	94.9
February	91.7	92.0	90.6	89.5	92.7	90.9	94.7	92.9	91.6	89.1	94.9
March	91.6	92.0	90.5	89.6	92.4	90.9	94.6	92.7	91.5	89.2	94.9
April	91.9	92.2	91.0	89.8	92.5	91.5	94.8	92.8	92.2	89.3	95.1
May	91.9	92.1	91.0	89.7	92.6	91.5	94.8	92.8	92.2	89.5	95.1
June	91.9	92.2	91.1	89.9	92.6	91.5	94.8	92.8	92.1	89.6	95.1
July	92.4	92.7	91.5	90.8	92.8	91.9	94.7	93.0	92.6	90.5	95.0
August	92.4	92.7	91.5	90.9	92.8	91.9	94.7	93.0	92.6	90.6	94.9
September	92.5	92.8	91.7	91.2	92.8	92.2	94.7	93.1	92.9	90.8	94.9
October	93.1	93.3	92.7	91.8	93.2	92.8	94.9	93.5	93.5	91.8	95.0
November	93.4	93.5	93.4	92.2	93.3	93.6	94.9	93.6	93.7	91.9	95.1
December	94.0	94.0	94.1	92.9	93.6	94.4	95.2	93.8	94.8	92.4	95.3
1977: January	98.4	98.3	98.7	98.1	98.5	99.1	98.3	98.6	99.5	97.8	98.4
February	99.2	99.1	99.3	99.0	99.3	99.5	99.1	99.4	99.6	98.4	99.0
March	99.7	99.7	99.7	99.3	99.9	99.9	100.1	100.0	100.0	98.6	100.1
April	100.0	100.0	99.9	99.9	99.9	100.0	100.0	99.9	100.0	99.9	100.0
May	100.0	100.0	100.0	99.9	100.0	100.0	100.1	99.9	100.0	100.0	100.0
June	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
July	101.3	101.4	101.0	100.7	100.4	100.9	102.5	100.3	100.8	100.2	102.7
August	102.1	102.2	101.6	101.0	101.0	101.4	104.0	100.9	101.3	100.3	104.1
September	102.5	102.6	101.9	101.2	101.0	101.7	104.8	100.9	101.5	100.4	104.9
October	102.3	102.5	101.7	100.9	101.0	101.6	104.7	100.9	101.4	100.0	104.9
November	102.2	102.4	101.7	100.6	100.8	101.6	104.9	100.7	101.4	99.9	105.1
December	102.2	102.4	101.7	100.6	101.0	101.6	104.9	100.9	101.4	99.8	105.1
1978: January	102.0	102.2	101.5	99.7	100.9	101.5	105.4	100.8	101.3	98.6	105.2
February	101.6	101.8	101.1	99.5	100.6	101.0	104.8	100.5	101.0	98.3	105.2
March	101.6	101.8	101.2	99.5	100.6	101.0	104.9	100.5	101.1	98.2	105.2
April	101.2	101.3	100.8	98.7	100.3	100.7	104.6	100.3	100.8	97.3	105.1
May	101.1	101.2	100.8	98.7	100.1	100.6	104.6	100.1	100.8	97.3	104.9
June	101.1	101.2	100.7	98.7	100.1	100.5	104.5	100.1	100.7	97.3	104.9
July	101.1	101.3	100.7	98.7	100.8	100.2	104.6	100.6	100.1	97.3	104.9
August	101.1	101.2	100.7	98.6	100.7	100.2	104.5	100.4	100.1	97.2	104.9
September	101.1	101.3	100.7	98.9	100.5	100.2	104.4	100.3	100.0	97.2	104.9
October	101.5	101.6	101.1	99.3	100.9	100.6	104.6	100.6	100.4	97.7	105.0
November	102.2	102.3	101.8	100.5	101.5	101.2	104.8	100.9	101.0	98.5	105.1
December	102.1	102.3	101.8	100.5	101.7	101.1	104.8	101.1	100.8	98.4	105.0
1979: January	105.5	105.5	105.4	104.6	103.6	104.7	107.5	102.6	104.8	102.0	107.7
February	108.7	108.7	108.4	107.7	106.8	107.5	111.0	105.8	107.6	104.5	111.2
March	110.1	110.1	110.2	109.3	108.7	108.8	112.1	107.8	108.5	105.6	112.2
April	115.0	114.2	117.4	115.9	111.8	117.0	113.7	110.6	118.4	115.0	112.3
May	126.7	125.9	129.4	130.0	123.7	128.7	122.5	122.4	128.3	128.9	119.5
June	135.2	134.8	136.3	141.7	130.1	133.9	129.3	128.3	131.9	143.0	126.5
July	150.3	148.5	155.6	154.4	145.3	154.2	144.2	142.1	159.0	154.5	141.9
August	163.7	163.0	165.8	170.1	163.2	163.1	156.6	160.7	166.1	170.7	152.8
September	165.5	164.7	167.9	171.1	166.4	165.4	158.9	164.8	167.6	172.4	154.6
October	168.6	167.1	173.3	173.9	168.4	171.8	160.7	166.5	175.9	175.1	156.4
November	173.4	171.8	178.2	183.2	165.3	175.6	162.7	162.0	179.4	177.9	157.6
December	184.5	183.9	186.5	195.6	173.4	180.8	176.5	169.8	182.8	193.3	169.9
1980: January	205.8	206.1	205.1	216.4	195.4	200.2	200.3	192.8	201.6	209.1	195.2
February	223.3	221.9	227.7	233.9	218.8	223.5	211.9	216.5	232.0	221.7	205.9
March	232.9	232.5	234.2	247.1	227.0	228.3	220.1	224.8	236.4	240.6	214.1
April	234.1	233.8	235.2	247.5	230.8	228.6	222.0	228.6	236.5	241.2	216.6
May	236.7	236.8	238.3	247.9	232.4	229.3	228.5	230.3	238.7	242.3	226.8
June	244.0	244.3	243.1	255.8	240.7	236.3	235.0	238.9	244.1	250.1	232.8
July	246.5	246.6	246.5	258.6	242.9	240.5	236.6	240.8	248.5	252.9	233.9
August	247.6	247.5	247.9	260.3	242.7	242.5	236.9	240.4	251.3	255.3	234.0
September	247.3	247.4	247.1	259.2	242.3	242.3	237.8	240.0	251.1	255.4	234.7
October	250.4	251.2	248.2	258.5	242.7	243.3	247.9	240.1	251.8	255.0	246.7
November	250.5	251.2	248.4	257.8	242.5	243.8	249.0	240.0	252.6	253.5	247.5
December	252.6	253.5	250.1	259.4	244.0	245.6	252.2	241.5	255.9	255.5	250.9
1981: January	263.0	262.5	264.5	267.9	248.6	263.8	262.7	245.4	278.5	265.6	261.8
February	273.4	273.1	274.0	279.6	264.7	271.5	270.9	261.9	284.4	275.0	268.7
March	272.9	272.5	274.2	279.2	265.8	272.6	269.2	263.2	285.4	275.0	266.3
April	271.4	271.1	272.0	278.0	264.5	270.5	267.4	262.1	282.6	274.0	264.6
May	271.5	271.6	271.2	278.9	264.6	269.4	267.4	262.1	281.3	273.8	264.7
June	267.6	269.4	262.2	276.3	262.7	258.2	265.4	260.7	264.0	271.8	262.8
July	267.6	269.7	261.0	275.3	262.3	258.5	267.1	260.5	264.4	271.1	265.3
August	262.9	266.8	251.1	271.0	259.9	248.3	264.5	258.6	250.0	268.5	264.1
September	261.3	265.4	248.9	268.3	259.5	245.8	264.1	258.4	250.7	264.2	263.8
October	258.0	261.5	247.2	260.4	258.1	244.8	264.4	257.6	249.7	253.7	265.8
November	258.8	262.1	248.8	260.0	258.9	246.3	266.2	258.2	252.0	252.3	267.9
December	262.1	265.6	251.7	263.3	260.7	247.5	270.9	259.8	253.5	255.5	271.7
1982: January	262.5	266.2	251.5	262.2	260.4	247.4	273.5	259.4	252.1	255.7	276.4
February	260.2	264.1	248.2	259.5	257.9	244.7	272.5	257.0	248.4	254.1	275.9
March	257.2	262.5	240.9	256.3	256.9	237.3	272.3	256.3	242.0	251.7	276.2
April	256.0	261.7	238.6	254.8	256.3	234.0	272.5	255.9	240.6	250.2	276.8
May	252.6	258.6	234.5	251.3	254.5	229.8	269.3	254.4	235.3	246.7	273.5

which the index was calculated. Prices increased slowly during 1976 and 1977, rising a total of 11 percent over the 24-month period. In 1978, a quiet year in the world petroleum market, prices were virtually unchanged, but between January 1979 and January 1980, the index rose 100 points, from 105.5 to 205.8. During the latter year, political events seriously disrupted the flow of petroleum exports from Iran, at one time the leading oil producing country in OPEC after Saudi Arabia. Prices continued to rise in 1980 and in the first 2 months of 1981. The index reached its highest level to date in February 1981, when it stood at 273.4, then declined slightly over the next 8 months as depressed demand for petroleum lead to greater competition among producers trying to maintain their market shares. The index registered slight increases in November and December 1981 and in January 1982, largely in response to higher prices for OPEC's benchmark crude, Saudi Arabian Light, which took effect in October 1981. In February 1982, prices resumed their decline and by May, the last month for which the index has been calculated, the measure had fallen to 252.6, the lowest since December 1980.

The indexes for imports from OPEC member countries and non-OPEC countries followed the same general pattern as the index for imports from all countries between 1976 and the first 5 months of 1981. The difference between the two indexes was less than half an index point in May 1981, with the index for imports from OPEC measuring 271.6 and the index for imports from non-OPEC countries measuring 271.2. The next month, the two indexes began to diverge and at year's end stood 13.9 index points apart, with the OPEC index at 265.6 and the non-OPEC index at 251.7, off 2.2 percent and 7.2 percent respectively from May. In 1982, the difference between the indexes widened further as the non-OPEC index registered large decreases, while the OPEC index declined only slightly. In May 1982, the index for imports from OPEC was calculated at 258.6 and the non-OPEC index, at 234.5.

Of the four indexes for crude petroleum imports from selected regions, the index for the Middle East, 269.3 in May 1982, increased the most from June 1977, which equals 100. In contrast, the index for Latin America, which until June 1981 followed the same trend as the Middle East index, measured 229.8. The May 1982 index values for the other two regions, Africa and the Far East, were calculated at 251.3 and 254.5.

Among the indexes from selected countries, the index for Mexico, which measured a full 10 index points higher than any of the others as recently as March 1981, stood at 235.3 in May 1982, the lowest of the four country indexes. The May 1982 values for the other indexes were 254.4 for imports from Indonesia, 246.7 for imports from Nigeria, and 273.5 for imports from Saudi Arabia.

Revision policy. There are two factors that affect the data that are used to compute this index which could lead to revisions in previously published index values. These are (1) the timing of some of the reports that importing companies file with the Department of Energy, and (2) company or Department of Energy corrections to data on individual transactions.

Of these two factors, the first is more likely to lead to revisions. Approximately 30 percent of the data that are used to calculate the index for a given month are not available when the index is first calculated. This is the result of differences in the accounting practices of some companies: Companies that book their crude when it is loaded at the foreign port are required to report on all shipments loaded in a given month, while companies that book their crude when it lands in the United States are required to report on all shipments that land in a given month. When BLS first computes the index for the current month, the reports of many of the companies in the second group (the "landed" companies) are not available. Given the amount of data involved, it is likely that the estimate of the index for the current month will be revised when the outstanding data become available.

The second factor, company or Department of Energy corrections to data on individual transactions, has so far not been significant enough to affect aggregate index values. This is not surprising in view of the strength of the sample from which the index is calculated, and what so far has been a low incidence of corrections to data that actually enter into the calculation of the index. Users of the index should realize, however, that these kinds of corrections could affect future index values and, where the effects are significant, result in BLS' revising the index.

An analysis of the results of different calculations of the index over time has shown that index values become fairly stable 3 months after they are first calculated. In view of this, the Bureau's policy will be to revise published index values for up to 3 months preceding the current month for which the index is calculated. Revisions of index values for earlier months are not anticipated, and will not be made unless significant reporting or calculation errors are discovered, or there is a change in the Department of Energy's reporting requirements. ☐

FOOTNOTES

[1] The price index for U.S. imports of crude petroleum from all countries is published quarterly in the BLS press release "U.S. Import and Export Price Indexes." The release is available on request.

[2] The current members of OPEC are: Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

Communications

Did job satisfaction really drop during the 1970's?

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That discontent in the American work force is rising has been a commonplace assertion in popular, and even some scholarly literature on employment for the past decade.[1] In contrast, most credible research has shown high and essentially stable levels of job satisfaction. However, a 1979 report by Graham Staines and Robert Quinn, derived from the 1977 Quality of Employment Survey (the third in the series), indicated a significant drop in the national job satisfaction level.[2] This article reviews these data and contrasts them with data from similar surveys of the same era. In general, the pattern of decline reported by Staines and Quinn is not replicated in these other surveys.

Surveys of job satisfaction began in the 1930's and have continued ever since. Regular measurements on national probability samples of the work force have been available for the past 20 years. The wording of specific questions varies among series, but all basically ask workers directly whether they are satisfied with their jobs.

Job satisfaction remained relatively stable throughout the early 1970's. Elliot Richardson reviewed the Gallup series of 1948–73 and found "scanty proof of widespread worker alienation."[3] The Gallup series registered a small drop in overall satisfaction in the later 1960's, but appropriate statistical controls for the changing structure of the labor force erased even this small trend.[4] Curt Tausky reviewed survey data from the Survey Research Center (SRC) of the University of Michigan and the National Opinion Research Center (NORC) and found that the level of job satisfaction was stable from 1958 to 1976.[5] A similar review in 1974 by Quinn and associates covered three major survey series for the period 1958–73, and concluded, "There has not been any significant decrease in overall levels of job satisfaction over the last decade." All other reviews of Gallup, NORC, and SRC data through the early 1970's have reported essentially the same.

In 1969, the University of Michigan initiated a new series on the quality of working life. The first survey, the Survey of Working Conditions, was conducted in 1969–70, and the second and third surveys, the Quality of Employment Survey (QES) were conducted in 1972–73 and in late 1977. A comparison of results of the 1969 and 1973 surveys showed no significant job satisfaction rise or decline.[6] The University of Michigan also conducted a Quality of Life survey in 1971 and in 1978. Here too, the reported levels of job satisfaction were stable. Thus, most surveys, at least through the early 1970's, conclude that job satisfaction in the American labor force has been essentially high and stable.

Two researchers report decline

The third QOE survey was reported by Staines and Quinn in 1979. A comparison of results from the 1973 and 1977 surveys showed, in sharp contrast to all prior series, a precipitous job satisfaction decline. Like all other series, the Quality of Employment surveys asked, "How satisfied are you with your job?" Between 1973 and 1977, the percentage "very satisfied" showed a modest, 5-point decline. Other indicators of job attitudes were constructed using replies from asking a number of individual questions. They are a "general satisfaction" indicator, and six facet-specific "satisfaction" indicators, which show the degree of satisfaction or dissatisfaction with certain aspects of the job, such as pay or coworkers. Both the general satisfaction indicator and five (comfort, challenge, financial rewards, resource adequacy, and promotions) of the specific satisfaction indicators show a definite and statistically significant downward trend (the sole exception is satisfaction with coworkers, which increases somewhat over the era).

Further analysis also revealed that the declines occurred in virtually every segment of the labor force. The decline was somewhat sharper for men than for women,

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was slightly more pronounced among those in lower-skilled positions, and was more precipitous among older workers than younger ones. These variations aside, the basic conclusion of the QOE survey is that job satisfaction declined virtually everywhere in the labor force from 1973 to 1977.

Staines and Quinn advance three hypotheses to account for the downward trend. First, demographic changes in the composition of the labor force have increased the relative predominance of traditionally less satisfied workers. Second, the objective, easily identifiable characteristics of specific jobs are deteriorating. Third, workers are raising their expectations about what they seek or expect in their jobs. The first two of these are inconsistent with other data from the series. For example, the first implies that the trend would disappear with controls for the relevant demographic factors; they do not. As for the second, Staines and Quinn said that changes in the objective qualities of jobs and employment conditions between 1969 and 1977 were not great, and indicate more gains than losses. The series does not contain the data necessary to test the third item, but by process of elimination it is the most plausible.

The suggestion is thus that job satisfaction in the American labor force declined from 1973 to 1977 mainly because of rising expectations. As indicated, the sharpest evidence favoring the declining reported satisfaction conclusion is that derived from the summated indicators by Staines and Quinn in 1979. As of this writing, no analysis of trends in the component items of those indicators has been published.

The response format for the individual component items in that report is as follows: Respondents were given short statements describing various characteristics of work (for example, "the pay is good") and were then asked to state whether the statement is very true, somewhat true, a little true, or not at all true of their own jobs.

Every component item (except one) showed a decline in the percentage of "very true" responses, the drop-offs ranging from about 5 to about 15 percentage points. On the surface, then, the item-specific results sharply confirm the original Staines-Quinn conclusion.

However, more detailed consideration of these results suggests the need for some skepticism. First, the very consistency of the pattern across items is suspicious, if only because such consistent and unambiguous results are rare in social science measurement. More importantly, while the overall declines in the summated indicators seem plausible enough, some of these item-specific trends seem highly implausible. There is, for example, a 10-point drop in the percentage saying it is very true that fringe benefits are good. In fact, the same survey series shows an increase in the proportion of the labor force receiving various fringe benefits. There was another 10-point drop in "having enough time to get the job done," which on the surface suggests a massive and hitherto undetected speed-up of American industry in the span of 4 years. Many of the other specifics have this same curious character: an 8-point drop in "the work is interesting," an 11-point drop in "opportunity to develop my own special abilities," roughly a 12-point decline in "having enough help and equipment to get the job done," a 7-point drop in "the physical surroundings are pleasant," an 11-point drop in the ability to "forget about personal problems at work," and so on. On the assumption that workers themselves provide the best evidence as to the nature and characteristics of their work, these data thus suggest nothing less than a wholesale transformation of the workplace over the 4 years. It is certainly possible that such a transformation in fact occurred, but it is not very likely.

Comparison with other surveys

As noted, Staines and Quinn reported a 5-point drop in the overall proportion of workers "very satisfied" with their work. Similar, although not identical, questions on general job satisfaction were also included in two other survey series covering approximately the same span, the 1973 and 1977 NORC General Social Surveys, and the 1971 and 1978 Quality of American Life Surveys. All three series are based on representative national probability samples. The pattern reported from the Quality of Employment series is not replicated in either of the other two series, neither of which shows a statistically significant change in job satisfaction over the time span (table 1).

Another frequently employed indicator of job satisfaction or work motivation is the question, "If you were

Table 1. Job satisfaction responses for two independent surveys

[In percent]

Response	National Opinion Research Center	
	1973	1977
Number of respondents	1,141	1,262
Very satisfied	49	48
Moderately satisfied	38	39
Little satisfied	8	10
Very dissatisfied	4	3
	Quality of life	
	1971	1978
Number of respondents	[1]5,634	2,380
Completely satisfied	36	32
Largely satisfied	30	32
Slightly satisfied	13	15
Neutral	12	10
Slightly dissatisfied	4	5
Largely dissatisfied	2	3
Completely dissatisfied	2	2

[1] Weighted for 1971.

to get enough money to live as comfortably as you would like for the rest of your life, would you continue to work or would you stop working?" This item is contained in both NORC and QES. Again, no significant trend is indicated in the percentages according to the tabulation:

Response	*National Opinion Research Center*		*Quality of Employment Survey*	
	1973	*1977*	*1973*	*1977*
Number of respondents	819	940	2,083	2,273
Continue	69	70	67	72
Stop	31	23	33	28

The Quality of American Life Series contains exact replicas of nine component items; both series were products of the same organization (table 2). Sharply contrasting the item-by-item results from the employment series, identical items from the Quality of American Life series show no statistically significant declines.

Perhaps the best data ever assembled on worker expectations are those contained in the first two QOE surveys. Both surveys presented respondents with the same list of job traits and asked them to state how important each trait was. Unfortunately, the "how important" sequence was dropped in the 1977 survey.

Lacking 1977 data from this series of questions, perhaps the best remaining national data on worker expectations for the era are contained in the NORC series, which presented workers with a list of five job characteristics and asked them to rank them. On the whole, trends on these measures of "worker expectation" are modest and are not consistent with the third Staines-Quinn hypothesis. In fact, there is a slight, but statistically significant, decrease over the 4 years in the proportion ranking "work is important and gives a feeling of accomplishment" as their first preference.

Consistent with the announced decline in job satisfaction, Staines and Quinn also report a decline in overall life satisfaction, specifically, an 11-point drop in the percentage characterizing their lives as "very happy." A nearly identical question was also included in the other two series (table 3). Again, the pattern of decline indicated in the employment series is not replicated in the other two.

The Staines-Quinn findings appear implausible for the following reasons:

- The announced decline is inconsistent with a long history of prior research on job satisfaction trends, all showing high and essentially stable levels of job satisfaction.

Table 2. Comparison of item-by-item results for two surveys

[In percent]

Questions and responses	Quality of employment		Quality of life	
	1973	1977	1971[1]	1978
"The work is interesting."				
Number of respondents	2,066	2,246	5,654	2,378
Very true	61	53	63	63
Somewhat true	22	28	28	28
Not very true	12	12	7	3
Not at all true	6	7	3	3
"I have the opportunity to develop my own special abilities."				
Number of respondents	2,057	2,241	5,346	2,377
Very true	43	32	42	50
Somewhat true	27	32	32	28
Not very true	19	21	17	14
Not at all true	11	14	9	8
"I am given a chance to do the things I want to do best."				
Number of respondents	2,049	2,239	5,645	2,777
Very true	41	31	47	49
Somewhat true	30	33	32	30
Not very true	17	22	14	13
Not at all true	13	14	7	8
"The pay is good."				
Number of respondents	2,061	2,246	5,630	2,376
Very true	41	27	38	37
Somewhat true	35	38	38	39
Very true	15	20	17	17
Not at all true	10	15	7	6
"The job security is good."				
Number of respondents	2,056	2,246	5,620	2,396
Very true	53	42	57	55
Somewhat true	27	34	25	28
Not very true	12	15	12	10
Not at all true	9	9	6	7
"The chances for promotion are good."				
Number of respondents	1,781	1,909	5,472	2,307
Very true	20	16	22	26
Somewhat true	28	26	26	26
Not very true	23	28	29	25
Not at all true	28	30	23	23
"I am given a lot of chances to make friends."				
Number of respondents	2,029	2,228	5,645	2,380
Very true	61	57	64	65
Somewhat true	31	35	23	24
Not very true	6	7	9	8
Not at all true[1]	2	1	4	3
"The physical surroundings are pleasant."				
Number of respondents	2,051	2,240	5,645	2,372
Very true	42	35	49	50
Somewhat true	32	37	31	33
Not very true	18	19	13	13
Not at all true	8	9	6	5
"I have enough time to get the job done."				
Number of respondents	2,063	2,244	5,628	2,375
Very true	41	31	51	52
Somewhat true	40	45	31	31
Not very true	14	17	13	11
Not at all true	5	7	5	6

[1] Results are based on the weighted number of respondents.

- While the overall declines on multiple-item indicators seem plausible enough, many of the trends on the specific component items seem curious and implausible.
- The drop in overall job satisfaction registered in the employment series is not replicated in either of two other series covering approximately the same time span.
- The downward trends in specific component items are not replicated in the only other national survey series containing those items.
- Three hypothesis are offered in the initial article to account for the announced decline. Two are ruled out by data from the employment series itself, and the third is not supported by independent evidence presented here.
- A parallel decline in overall life satisfaction registered in the employment series is also not replicated in two independent tests.

The announced decline may itself be in error, and job satisfaction in the American work forces may have been essentially constant during the mid 1970's. It is unclear why the QOE employment series would show a trend if one did not exist. A possible reason could be that the 1977 employment sample included only a fraction of the relatively more satisfied 1973 respondents, thus producing an artificial decline in satisfaction. Whatever the explanation, it is apparent that the 1977 employment survey contains proportionally more people who are unhappy with their jobs, and with their lives, than do other reputable national surveys of the same era. Until some plausible account of this difference is given, the results of the 1977 employment survey must be treated with some caution. ☐

Table 3. Indicators of life satisfaction from three series

[In percent]

Response	Quality of employment		Quality of life		National Opinion Research Center	
	1973	1977	1971	1978	1973	1977
Number of respondents .	2,080	2,280	2,147	3,647	1,500	1,527
Very happy	38	27	29	27	36	35
Pretty happy	56	65	61	63	51	53
Not too happy	6	9	10	8	13	12

FOOTNOTES

[1] See Harold Sheppard and Neal Herrick, *Where Have all the Robots Gone: Worker Dissatisfaction in the 70's* (New York, Free Press, 1972); Harry Braverman, *Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century* (New York, Monthly Review Press, 1974); Stanley Aronowitz, *False Promises: The Shaping of American Class Consciousness* (New York, McGraw-Hill Book Co., 1973); and James O'Toole, *Work in America* (Cambridge, Mass., MIT Press, 1973).

[2] Graham Staines and Robert Quinn, "American workers evaluate the quality of their jobs," *Monthly Labor Review*, January 1979, pp. 3–12.

Elliot Richardson, *The Creative Balance: Government, Politics, and the Individual in America's Third Century* (New York, Holt, Rinehart, and Winston, 1976).

[4] Robert Quinn, Graham Staines, and Margaret McCullough, *Job Satisfaction: Is There a Trend?* (Washington, U.S. Government Printing Office, 1974.)

[5] Robert Quinn and Linda Sheppard, *The 1972–73 Quality of Employment Survey* (Ann Arbor, University of Michigan, 1974); and Curt Tausky, *Work Organizations: Major Theoretical Perspectives* (Itaska, Ill., F. E. Peacock, 1978).

[6] Quinn and Sheppard, *The 1972–73 Quality of Employment Survey.*

Family Budgets

Retired couple's budgets, final report, autumn 1981

Rising medical and transportation costs contributed to the increases in the three hypothetical budgets for a retired couple. In autumn 1981, the average urban budgets were $7,226 at the lower level, $10,226 at the intermediate level, and $15,078 at the higher level (table 1). From autumn 1980 to autumn 1981, the lower budget rose 8.8 percent, the intermediate, 8.4 percent, and the higher, 8.3 percent (table 2). The increases were approximately 2 percentage points less than those reported for 1979–80, reflecting smaller increases in food.

This report is the final release of budget data for a retired couple. The expenditure data on which the budgets are based are now 20 years old. Continuation of the program would have required revision of concepts and expenditure data and extensive price collection, for which funding was not available. Therefore, the program was eliminated as part of the Bureau of Labor Statistics' recent overall budget reduction.

Consumption costs rose by 8.7 percent for the lower level budget, 8.4 percent for the intermediate, and 8.3 percent for the higher. Among the components, medical care and transportation showed the largest increases.

Table 1. Summary of annual budgets for a retired couple at three levels of living, urban United States, autumn 1981

Component	Lower budget	Intermediate budget	Higher budget
Total budget[1]	$7,226	$10,226	$15,078
Total family consumption	6,914	9,611	13,960
Food	2,183	2,898	3,642
Housing	2,377	3,393	5,307
Transportation	553	1,073	1,960
Clothing	244	409	629
Personal care	198	290	424
Medical care	1,085	1,091	1,098
Other spending	275	457	901
Other items[2]	311	615	1,118

[1] Beginning with the autumn 1973 updating, the budgets no longer include income taxes.

[2] Other items include gifts and contributions and life insurance.

NOTE: Because of rounding, sums of individual items may not equal totals.

Table. 2 Percentage changes in the budgets for a retired couple, autumn 1980 to autumn 1981

Component	Lower budget	Intermediate budget	Higher budget
Total budget	8.8	8.4	8.3
Total family consumption	8.7	8.4	8.3
Food	4.9	4.5	4.6
Housing	9.6	9.2	9.2
Transportation	13.6	12.9	12.1
Clothing	3.4	3.3	3.3
Personal care	7.6	7.8	7.6
Medical care	14.9	14.6	14.9
Other family consumption	7.8	7.8	7.6
Other items[1]	8.7	8.3	7.8

[1] Other items include gifts and contributions and life insurance.

Medical care costs increased approximately 15 percent at all three levels, while transportation costs rose about 14 percent at the lower level, 13 percent at the intermediate level, and 12 percent at the higher level. These components also showed the largest increases in the period from autumn 1979 to autumn 1980. The total cost of the medical care component for autumn 1981 contains a preliminary estimate of out-of-pocket costs for medicare.

The housing component includes costs for shelter and housefurnishings and operations, and assumes that retired couples either rent or own their homes free of mortgage payments. Renter costs include average contract rent plus heating fuels, gas, electricity, water, specified equipment, and insurance on household contents. Homeowner costs include property taxes, water, refuse disposal, heating fuels, gas, electricity, specified equipment, home repair and maintenance, and insurance on house and contents.

The "other family consumption" component includes costs for reading materials, recreation, tobacco, alcoholic beverages, and miscellaneous items.

The budgets represent the costs of three hypothetical lists of goods and services that were specified in the mid-1960's to portray three relative levels of living. A retired couple is defined as a husband, age 65 or over, and a wife, who are assumed to be self-supporting, residing in an urban area, in reasonably good health, and

Table 3. Indexes of comparative costs based on an intermediate budget for a retired couple, autumn 1981

[U.S. urban average cost = 100]

Area	Total budget	Family consumption: Total consumption	Food: Total	Food: Food at home	Housing: Total	Housing: Renter costs	Housing: Homeowner costs	Transportation[1]	Clothing	Personal care	Medical care	Other family consumption
Urban United States	100	100	100	100	100	100	100	100	100	100	100	100
Metropolitan areas[2]	103	103	101	101	107	108	106	101	102	98	101	107
Nonmetropolitan areas[3]	90	90	96	98	80	77	82	96	95	107	98	78
Northeast:												
Boston, Mass.	117	117	102	103	141	136	167	107	110	92	97	117
Buffalo, N.Y.	105	105	102	104	108	98	114	113	119	93	93	106
New York-Northeastern N.J.	114	114	113	110	136	121	161	72	89	101	99	110
Philadelphia, Pa.-N.J.	104	104	111	107	109	102	118	89	72	84	100	106
Pittsburgh, Pa.	103	103	104	104	100	87	104	115	97	89	99	105
Nonmetropolitan areas[3]	101	101	101	102	102	105	123	106	106	105	97	79
North Central:												
Chicago, Ill.-Northwestern Ind.	98	98	98	100	96	104	88	97	93	90	102	121
Cincinnati, Ohio-Ky.-Ind.	98	98	102	103	92	81	92	99	121	85	100	107
Cleveland, Ohio	103	103	100	99	102	104	106	108	110	114	96	112
Detroit, Mich.	102	102	100	101	104	105	107	105	92	97	98	105
Kansas City, Mo.-Kans.	98	98	98	99	89	81	81	106	107	113	103	109
Milwaukee, Wis.	104	104	97	95	109	104	115	111	118	98	99	107
Minneapolis-St. Paul, Minn.	99	99	95	95	99	112	85	106	106	101	95	110
St. Louis, Mo.-Ill.	99	99	104	105	92	84	82	111	97	91	97	99
Nonmetropolitan areas[3]	91	91	95	97	83	88	85	92	109	113	96	79
South:												
Atlanta, Ga.	93	93	97	96	79	80	58	110	111	93	99	109
Baltimore, Md.	98	98	94	93	99	102	78	107	97	97	97	105
Dallas, Tex.	96	96	94	93	89	99	80	110	91	94	104	100
Houston, Tex.	98	98	99	97	90	83	85	102	108	110	106	98
Washington, D.C.-Md.-Va.	108	108	103	104	111	118	106	109	105	120	103	114
Nonmetropolitan areas[3]	86	86	95	97	72	80	70	96	78	99	100	75
West:												
Denver, Colo.	98	98	94	94	94	87	80	109	127	98	98	104
Los Angeles-Long Beach, Calif.	100	100	97	96	96	131	70	119	92	97	109	95
San Diego, Calif.	96	96	95	91	89	112	74	112	94	91	106	104
San Francisco-Oakland, Calif.	107	107	100	100	106	132	81	121	109	118	108	108
Seattle-Everett, Wash.	111	111	101	100	120	142	107	112	110	115	104	116
Honolulu, Hawaii	119	119	134	137	113	155	83	121	105	111	103	119
Nonmetropolitan areas[3]	93	93	96	98	84	90	84	94	118	123	101	82
Anchorage, Alaska	126	126	115	116	137	187	113	124	130	177	122	92

[1] The average costs of automobile owners and nonowners in the intermediate budget were weighted by the following proportions of families: New York, 25 percent for owners, 75 percent for nonowners; Boston, Chicago, Philadelphia, 40 percent for owners, 60 percent for nonowners; all other metropolitan areas, 60 percent for owners, 40 percent for nonowners; nonmetropolitan areas, 68 percent for owners, 32 percent for nonowners.

[2] As defined in 1960-61. For a detailed description of current and previous geographical boundaries, see the 1967 edition of *Standard Metropolitan Statistical Areas*, prepared by the Office of Management and Budget.

[3] Places with populations of 2,500 to 50,000.

able to care for themselves. The different budget levels provide different qualities and quantities of goods and services, but do not include personal income taxes. The lower budget was not designed to be a subsistence or poverty level of spending but simply somewhat lower than the intermediate budget.

The 1981 budgets were estimated by applying price changes for individual geographic areas from autumn 1980 to autumn 1981, as reported in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W), to the appropriate autumn 1980 budget costs for each main class of goods and services. The budgets have been updated by the CPI since 1969, when the last direct pricing took place. This method of updating is approximate because the CPI reflects spending patterns and prices for commodities and services purchased by urban wage earners and clerical workers generally, without regard to the type of family and level of living and because the updating was done at a relatively aggregated level. Also, the treatment of homeownership costs in the CPI differs from the treatment in the budgets.

Cost estimates and indexes of costs for the three retired couple's budgets, by metropolitan area and regional nonmetropolitan area averages, are available from the Bureau of Labor Statistics upon request. □

Research Summaries

Labor force activity of women receiving child support or alimony

ALLYSON SHERMAN GROSSMAN
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As divorce, separation, and out-of-wedlock births climbed during the 1970's, the number of mothers rearing children whose fathers were absent from the home rose sharply. Nonetheless, as the decade drew to a close, relatively few mothers received child support payments, despite the legal obligation on the part of most fathers. In addition, very few women received alimony.

A special survey conducted in April 1979,[1] shows that an estimated 2.5 million (35 percent) of the 7.1 million mothers living with children from absent fathers had received child support payments in 1978. An additional million were entitled to them but received none (table 1).

Surprisingly, mothers receiving money for child support were found to be in the labor force more often than those not awarded such support. And, women who received alimony—financial support for their personal maintenance after the dissolution of a marriage—were also more likely to work than those who did not receive such payments.

Child support recipients

In April 1979, 75 percent of the mothers who had received child support in 1978 were in the work force, and 84 percent of those employed worked full time (35 hours a week or more). Of those not awarded support, the comparable proportions were 58 percent and 78 percent. The child-support recipients were also less likely to be unemployed; at 7.3 percent their unemployment rate was only half that of the mothers not awarded support.

Although generally higher labor force participation rates and lower unemployment rates for the recipients were evident among most major age-race groups, much of the difference between the aggregate rates of the two groups was associated with other factors. That is, mothers not awarded support tended to be black, less educated, and young—groups with serious labor market problems. For example, 47 percent of the mothers not awarded support were black, compared with only 11 percent of the recipients.

Historically, black mothers maintaining their own families have had lower labor force participation rates and higher unemployment rates than their white counterparts. In March 1979, 56 percent of the blacks were in the labor force compared with 71 percent of the whites, and the unemployment rate for this group of blacks was 16 percent, compared with a little less than 9 percent for the white mothers.

Moreover, those not awarded support were, on average, younger, less educated, and more likely to be single (never married) than the recipients. About 30 percent of the mothers not awarded support were below age 25, and 42 percent had never been married. Of the recipients, 8 percent were below age 25 and less than 4 percent had never been married. Also, as shown below, proportionately twice as many mothers not awarded support had failed to complete high school:

	Not awarded support	*Recipients*
Educational attainment:		
Less than 4 years of high school	44	22
4 years of high school only	40	49
1 year or more of college	16	29

Labor force

Among both blacks and whites, participation rates of recipients were higher than those for mothers awarded no support. About 76 percent of white recipients and 64 percent of the black were working or looking for work,

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Table 1. Labor force status of mothers by child support recipiency in 1978, April 1979
[Numbers in thousands]

Recipiency status	Civilian noninstitutional population		Labor force		Employed			Unemployed		Not in labor force
	Number	Percent	Number	Percent of population	Total	Percent		Number	Rate	
						Full time	Part time			
Total	7,094	100.0	4,633	65.3	4,161	81.3	18.7	472	10.2	2,462
Awarded child support	4,196	59.1	2,962	70.6	2,731	83.0	17.0	231	7.8	1,234
Support not scheduled for 1978	772	10.9	465	60.2	437	81.7	18.3	28	6.0	307
Support scheduled for 1978	3,424	48.3	2,497	72.9	2,294	83.3	16.7	203	8.1	927
Did not receive support	969	13.7	669	69.0	600	82.2	17.8	69	10.3	300
Received support	2,455	34.6	1,828	74.5	1,694	83.7	16.3	134	7.3	627
Not awarded child support	2,898	40.9	1,671	57.7	1,430	78.0	22.0	241	14.4	1,228

NOTE: Sums of individual items may not equal totals due to rounding.

compared with 60 and 55 percent of the mothers not awarded support.

By marital status, divorcees were most likely to be in the labor force whether or not they received child support. Among the recipients, almost 85 percent of the divorcees were working or looking for work, compared with 69 percent of the separated women. Moreover, nearly 70 percent of the divorcees not awarded child support were in the labor force compared with 60 percent of the married women and 55 percent of those separated or never married.

Unemployment rates were much higher for those awarded no support than for recipients, regardless of race. At 11.9 percent, the unemployment rate for white nonawardees was 5 percentage points higher than for recipients, while among blacks the nonawardees were more than twice as likely to be jobless (table 2). Unemployment among mothers not awarded child support was highest for those who had never been married, partly because most were in their teens or early twenties, ages at which the already difficult problems of labor market entry are compounded by child-care responsibilities.

Income and work experience

Child support recipients had average (mean) annual incomes of about $8,940 in 1978, almost 70 percent greater than the $5,340 average for mothers not awarded support. Only part of this difference, however, can be attributed to the payments themselves; because mothers who were recipients were more likely to have earnings and other sources of income.

In 1978, overall child support payments averaged about $1,800, or only half of the difference between the incomes of the recipients and the mothers not awarded support. This is partly because women receiving child

Table 2. Labor force status of mothers by child support recipiency in 1978 and selected characteristics, April 1979

Selected characteristics	Population (in thousands)		Labor force (in thousands)		Labor force participation rate		Unemployment rate	
	Not awarded child support	Received child support	Not awarded child support	Received child support	Not awarded child support	Received child support	Not awarded child support	Received child support
Total	2,898	2,455	1,671	1,828	57.7	74.5	14.4	7.3
Marital status								
Married spouse present	461	781	274	486	59.7	67.1	6.2	7.2
Divorced	483	1,242	333	1,050	68.9	84.6	5.7	6.3
Separated	690	337	379	232	54.9	69.0	17.2	9.9
Widowed	35	8	12	5	(1)	(1)	(1)	(1)
Never-married	1,231	87	674	55	54.8	63.2	20.6	(1)
Race and Hispanic origin:								
White	1,490	2,168	891	1,645	59.8	75.8	11.9	6.9
Black	1,349	260	743	167	55.1	64.2	17.8	8.4
Hispanic	292	124	132	62	45.2	50.0	17.4	(1)
Age								
18 to 24 years	868	205	457	137	52.6	67.2	28.2	20.9
25 to 34 years	1,020	1,086	613	813	60.1	74.9	13.8	7.8
35 to 44 years	629	878	398	677	63.2	77.1	8.7	4.6
45 years and over	381	285	204	200	53.5	70.2	1.7	5.2

[1] Percent not shown where base is less than 75,000.

NOTE: Sums of individual items may not equal totals due to rounding.

support were more likely than those not awarded support to have had some work experience in the previous year. Nearly 80 percent of the recipients worked at some time in 1978, compared with 60 percent of those not awarded child support (table 3). Moreover, the latter tended to work fewer weeks and in lower paying jobs. Nearly the same proportions of the two groups held full-time jobs, but 54 percent of the recipients worked all year, compared with 43 percent of the others. About 2 of 3 child support recipients worked in white-collar occupations, with the remainder about equally divided between blue-collar and service occupations. In contrast, slightly over half (51 percent) of the mothers not awarded child support were blue-collar or service employees, while 48 percent were in white-collar jobs.

Alimony

Although only a very small proportion of ever-divorced or currently separated women reported that they received alimony or maintenance payments in 1978, labor force activity was strong among those who did (table 4). More than 7 of every 10 were working or looking for work. Among the women receiving alimony, those between the ages of 35 and 44 had the highest participation rates and those 45 and over, the lowest.

On average, women 45 years old and over received higher alimony payments than their younger counterparts. The higher payments probably contributed to their lower labor force participation rates, although in general, older women are usually less likely to work than younger women. These higher payments generally result from the longer duration of their marriages.

Many courts have indicated that the duration of the marriage measures the extent of the homemaker's absence from the work force and the probable degree of difficulty she will encounter in attempting to enter or reenter it. In this regard, one study concluded, that . . . "spousal support provides a form of insurance for employment benefits—e.g., work experience, accumulated earnings, pension plans and health insurance—the homemaker has bypassed so that she could devote herself to her family."[2]

Table 3. Work experience of mothers by child support recipiency in 1978

Weeks worked	Received child support	Not awarded child support
Total (in thousands)	2,455	2,898
Worked	1,942	1,738
Percent of total	79.1	60.0
Worked (percent)	100.0	100.0
Full time	80.7	75.8
40 weeks or more	61.9	51.3
50 to 52 weeks	53.7	43.4
39 weeks or less	18.8	24.5
Part time	19.3	24.2
40 weeks or more	8.1	10.0
50 to 52 weeks	6.0	7.1
39 weeks or less	11.2	14.2

NOTE: Sums of individual items may not equal totals due to rounding.

Table 4. Labor force status of ever-divorced or currently separated women who received alimony or maintenance payments in 1978, by demographic characteristics, April 1979

[Numbers in thousands]

Characteristics	Total	In labor force		Not in labor force
		Number	Participation rate	
Total, ever-divorced or currently separated	14,334	8,655	59.8	5,768
Alimony or maintenance payment recipients	528	373	70.6	155
Race and Hispanic origin:				
White	486	340	70.0	146
Black	41	32	(1)	9
Hispanic	24	19	(1)	6
Age:				
18 to 24 years	26	19	(1)	7
25 to 34 years	135	99	73.3	36
35 to 44 years	188	150	79.8	37
45 years and over	179	105	58.7	74
Median payments in 1978	$1,570	$1,420	—	$1,810

[1] Rate not shown where base is less than 75,000.

NOTE: Sums of individual items may not equal totals due to rounding.

IN THE UNITED STATES, there is a clear-cut legal obligation for fathers to provide financial support for their children from a marriage ending in divorce or separation regardless of the labor force status of the mother. Moreover, they are obligated to support children born out of wedlock providing paternity has been proven.[3] Yet, as this report demonstrates, the receipt of child support is not widespread. ☐

FOOTNOTES

[1] The estimates in this report are based on data that were collected in March and April 1979 from the Current Population Survey (CPS) conducted for the Bureau of Labor Statistics by the Bureau of the Census. About 56,000 households in 614 areas of the United States with coverage in each of the 50 States and the District of Columbia were eligible for interviews in March. About 40,000 of these households were reinterviewed in April and women, 18 years of age and over, were then asked supplementary questions regarding child support and alimony payments. The labor force estimates shown in this report were derived from special tabulations prepared by Bernard R. Altschuler of the Data Services Group, Office of Current Employment Analysis, Bureau of Labor Statistics.

Estimates based on a sample may vary considerably from results obtained by a complete count, especially in cases where the numbers are small. Therefore, differences based on these estimates may not be significant.

For more detail and the interpretation of such differences, as well as a detailed discussion of the survey methodology and findings, see: *Child Support and Alimony: 1978, Current Population Reports*, Series P-23 no. 112 (Bureau of the Census, 1981).

[2] See Nancy A. Veith, "Rehabilitative Spousal Support: In Need of a More Comprehensive Approach to Mitigating Dissolution Trauma," *University of San Francisco Law Review*, Spring 1978, pp. 493–525.

[3] See Carol Adaire Jones, Nancy M. Gordon, and Isabelle F. Sawhill, "Child Support Payments in the United States," *Working Paper* 992–03, Urban Institute, October 1976, p. 6.

Does a younger male labor force mean greater earnings inequality?

MARTIN DOOLEY AND PETER GOTTSCHALK

In a recent article in the *Monthly Labor Review*, Peter Henle and Paul Ryscavage showed that inequality of earnings among men grew between 1959 and 1977, although the rate of increase was lower after 1973.[1] Robert Plotnick likewise found an increase in the overall variance of men's earnings during the 1958–77 period.[2] Did this widening disparity reflect more than the effects of changes in the age composition of the labor force?

The answer to this question is important for public policy. If the greater inequality of earnings only reflects growth in the proportion of young males in the labor force as a result of the baby boom, then we might expect a reversal of the trend in the future. As this disproportionately large group of young men ages and is replaced by smaller cohorts, the distribution of earnings may become more equal. More disturbing would be the finding that inequality has grown among men with a given level of work experience. This would indicate that the greater overall inequality reflects more than simply the "younging" of the labor force.

Our analysis makes two contributions to the growing literature on earnings inequality. First, by focusing on inequality within education-experience groups, we demonstrate that two simple demographic explanations are not sufficient to explain the trend. Finis Welch and Richard Freeman have shown that the mean earnings of young workers fell relative to the mean earnings of older workers during the late 1960's and early 1970's.[3] This by itself would increase the between-age-group variance of earnings, and hence, increase the total variance. However, we show that, even after the influence of the between-group variance is eliminated, there remains a substantial trend towards greater inequality. The second demographic explanation is that the young make up a growing percentage of the labor force. Because the young typically have a high earnings variance,[4] the average of the within-age-group variances would tend to increase with the labor market entry of the baby boom. But by examining the variance of separate education-experience categories, we show that this factor is not sufficient to explain the trend in the overall variance. Our principal concern is with the experience composition of the labor force, but because Jacob Mincer has shown that earnings inequality varies with the level of education,[5] we control for this factor as well.

The second major contribution of this study is to show that the proportion of people with zero earnings also increased within education-experience categories. This development has largely been ignored in the literature. Henle and Ryscavage and Plotnick limited their samples to people with positive earnings. Likewise, our measure of inequality, the variance of the logarithm of earnings, does not allow us to include people with zero earnings. The exclusion of a growing group of individuals who fall at the lowest point in the distribution gives an incomplete picture.

Method of the study

To examine these issues, we start by reviewing our measures of inequality and zero earnings averaged across all education and experience groups. We then turn to an analysis of changes within education and experience categories.

Like Henle and Ryscavage, we used data from the work experience supplement to the March 1968–79 Current Population Survey.[6] The special household questionnaire included data on annual earnings and weeks worked. Our sample covered males 16 through 62, who were not then in school and who reported they had worked 50 to 52 weeks the previous year, or fewer weeks for reasons other than school or, in the case of older men, retirement. Those self-employed or working without pay were excluded. The observations were divided into four education categories: less than 12 years, 12 years, 13 to 15 years, and 16 years or more of schooling completed. Current age minus estimated labor force entry age was used to allocate individuals to single-year labor force experience groups.[7]

Within each of the 1,960 education-experience-year cells, we calculated the variance of log annual and log weekly earnings among earners, as well as the proportion of zero earners. (Weekly earnings are not collected directly from respondents to the March Current Population Survey. For this study, estimates of weekly earnings were obtained by dividing the respondent's reported annual earnings by reported weeks worked. The weeks worked may have been full time, part time, or some combination of the two.) These within-group measures are the basis for our analysis. Inequality of weekly earnings, which has the advantage of not being influenced by changes in the distribution of weeks worked, was not studied by Henle and Ryscavage or Plotnick.

The findings

Table 1 shows the total variance of log earnings and the weighted average of the witnin-group variances for

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Table 1. Variance of log earnings, and proportion of men with zero earnings, 1967–78

Year	Variance of log annual earnings		Variance of log weekly earnings		Percent with zero earnings (5)
	Total (1)	Within-group[1] (2)	Total (3)	Within-group[1] (4)	
1967	0.503	0.373	0.402	0.302	3.3
1968	.482	.349	.379	.290	3.5
1969	.521	.373	.374	.267	3.6
1970	.584	.417	.405	.287	4.3
1971	.607	.436	.433	.295	4.7
1972	.645	.451	.446	.314	4.9
1973	.613	.432	.441	.308	4.8
1974	.645	.457	.459	.326	5.8
1975	.673	.479	.425	.298	7.3
1976	.671	.473	.432	.299	6.9
1977	.662	.465	.432	.300	6.5
1978	.631	.454	.445	.323	6.4
Trend:[2]					
1967-78	[3] .028	[3] .025	[3] .013	[3] .009	[3] .072
1967–72	[3] .057	[3] .048	[3] .031	[4] .015	[3] .092
Change in trend after 1972	[3] –.053	[3] –.042	[3] –.031	–.011	–.035

[1] Weighted average for groups defined by four educational levels and by single years of labor force experience.

[2] Time trend fitted to the log of averages shown in the table.

[3] 1.28 < t < 1.64.

[4] 1.64 < t.

each year.[8] The average was constructed by weighing the variance of each of the education-experience cells by the proportion of people in that cell in that year. Column 1 shows that the total variance of log annual earnings grew substantially over the period. The rate of increase, however, seems to have been more rapid prior to 1973, confirming Henle and Ryscavage's earlier conclusions based on gini indexes.[9] Column 2 shows that the increase in the total variance occurs even when we eliminate the effect of changes in between-group variance. The average of the within-group variances of log annual earnings increased from .373 in 1967 to .454 in 1978. Examination of the data again indicates that the growth rate was considerably higher during 1967–72 than in the 1973–78 period.

To estimate growth rates, we fit linear time trends to the data in table 1. A spline covering the 1973–78 period was used to test for change in growth rates.[10] The estimated trend over the full period, the trend over 1967–72, and the change in the trend after 1972 are shown in the bottom three rows.[11]

The time trends fitted to the variance of the log annual earnings indicate a 2.8-percent growth rate in the total variance and a 2.5-percent growth rate in the within-group variance over the full period. This was a result of a very rapid rise between 1967 and 1972 and a leveling after 1972. Columns 3 and 4 of table 1 show that the increasing inequality of annual earnings is not only a reflection of changes in employment patterns. The total variance of weekly earnings also shows a 1.3-percent growth rate and the within-group variance shows a 0.9-percent growth rate; both are statistically significant. Again, the growth rates are substantially higher during 1967–72 than in the later period, when the growth rates are quite small. These data indicate that annual and weekly earnings among workers with positive earnings have become less equal, although the rate of increase in the inequality dropped after 1972.

Column 5 shows the percent of males with zero earnings. This series shows a dramatic increase during the survey period. In 1967, 3.3 percent of all men in our sample had zero earnings. By 1978, the proportion had grown to 6.4 percent. The growth rates over the full period and the period 1967–72 are both large and significant. For the percent with zero earnings, the trends in the two subperiods are not significantly different.

The rise in the proportion of men with zero earnings is large enough to warrant careful attention. While it is beyond the scope of this study to explain why this rapid increase has occurred, it is consistent with other survey data which show that the proportion of men out of the labor force in any given month has been growing.[12] More surprisingly, our data indicate that many of these men did not have any earnings during the year.

Table 2 shows the estimated growth rate in the proportion of men with zero earnings and the estimated growth rate in the within-group variance of log annual and weekly earnings for 16 education-experience categories.[13] Columns 1 to 3 indicate that the within-group variance of log annual earnings increased in all cases. All growth rates except two are significantly greater than zero (the exceptions being the two highest experience groups for college graduates). The growth rates are both statistically significant and of substantial magnitude. The within-group variance of the log of annual earnings grew in the 2- to 4-percent range for most categories. This indicates that the average increase in the within-group variance of log annual earnings shown in table 1 reflects more than population shifts among cells as a result of the baby boom.

For the group with the lowest experience there is strong confirmation of a slowdown in the trend toward inequality, even within experience categories. Column 3 shows statistically significant declines for all educational levels. For other experience groups, the picture is not so clear. Column 3 shows a decline in the growth rates for all but three of the categories with more than 10 years of experience. However, almost none of these differences in the growth rates is statistically significant. This partially reflects the substantial year-to-year fluctuations in the data that make it difficult to draw conclusions about subperiods. Nevertheless, we can say that a decline in the trend toward greater inequality within education-experience categories is not strongly confirmed by the data for men with more than 10 years of experience.

Columns 4 to 6 show the growth rates in within-group variances of log weekly earnings. As found in table 1, the growth rates are considerably lower than those for the log of annual earnings. In addition, we find that (with one exception) the trend toward greater inequality of weekly earnings is statistically significant only for men with less than a college degree and less than 21 years of experience. For these people, growing inequality of annual earnings also reflects growing inequality of weekly earnings. For the other groups, all but one trend coefficient in column 4 is positive but only one of these is statistically significant.[14] Few of the education-experience groups show statistically significant changes in growth rates between the two subperiods.

Columns 7 and 8 show the growth rates in the percent of men with zero earnings. Column 7 shows significantly positive growth rates in the proportion of respondents with zero earnings, even in the higher education-experience cells. Not only are the growth rates in columns 7 and 8 statistically significant but they are quite large, almost all being above 7 percent per year. Columns 8 and 9 indicate that the growth rates in the percentage of zero earners did decline after 1972. However, the statistically significant declines are concentrated in the two groups with lower experience.

IN SUMMARY, we find that the increasing inequality of male earnings reflects more than the changes in the composition of the labor force which resulted from the labor market entry of the baby boom. Even within education-experience cells, the variance of log annual earnings has been increasing. For men with less than 20 years of experience, the variance of log weekly earnings has also been rising. Furthermore, there is an increasingly large proportion of men who earn no income over a full year. The rise in this proportion of zero earners is not confined to those with little education or experience. It seems to be occurring across the board.

What are the possible explanations for our observed inequality *within* education-experience cells? One might be that increased transfer programs have generated disequalizing labor supply responses. But while this hypothesis has yet to be tested rigorously, indirect evidence suggests that it is not a full explanation. Recall, for example, that high education-experience males, whose greater earnings capacity makes them less likely to be eligible for transfer payments, also experienced an increase in inequality. This suggests that expanded transfer programs were not the only factor at work. Another possible explanation involves the education and

Table 2. Trends[1] in average within-group earnings variances and in the percentage of men with zero earnings, by years of experience and education, 1967–78

[In percent]

Experience-education category	Average within-group variance						Percent of men with zero earnings		
	Log annual earnings			Log weekly earnings					
	Trend, 1967–78 (1)	Trend, 1967–72 (2)	Change in trend after 1972 (3)	Trend, 1967–78 (4)	Trend, 1967–72 (5)	Change in trend after 1972 (6)	Trend, 1967–78 (7)	Trend, 1967–72 (8)	Change in trend after 1972 (9)
1 to 10 years' experience:									
Education:									
Less than 12 years	[2].033	[2].061	[2]–.050	[2].018	.017	.002	[2].087	[2].166	[2]–.140
12 years	[2].044	[2].077	[3]–.060	[2].018	.024	–.010	[2].104	[2].206	[2]–.180
13 to 15 years	[2].054	[2].143	[2]–.158	[2].032	[2].066	[3]–.061	[2].114	[2].212	[2]–.174
16 years or more	[3].017	[2].070	[2]–.093	.002	[3].023	[3]–.037	[2].082	[2].180	[2]–.174
11 to 20 years' experience:									
Education:									
Less than 12 years	[2].040	[2].070	–.050	[3].018	[3].044	–.047	[2].130	[2].162	[3]–.058
12 years	[2].072	[2].076	–.007	[2].052	.010	[2].073	[2].113	[2].138	–.044
13 to 15 years	[2].041	[2].042	–.003	[2].027	.022	.009	[2].163	[2].240	[3]–.136
16 years or more	[3].025	[3].038	–.022	.007	.014	–.011	[2].111	.041	.124
21 to 30 years' experience:									
Education:									
Less than 12 years	[2].023	[3].038	–.027	–.004	.020	.017	[2].108	[2].115	–.013
12 years	[2].039	[2].080	[3]–.071	.012	[3].054	.073	[2].094	[2].102	–.014
13 to 15 years	[2].030	.021	.015	.016	.030	–.022	[2].104	[2].121	–.030
16 years or more	.012	–.011	.040	.001	–.027	.050	[2].031	.025	.010
31 or more years' experience:									
Education:									
Less than 12 years	[2].019	[2].036	[3]–.030	[3].007	.007	–.001	[2].088	[2].099	–.020
12 years	[2].019	[2].032	[3]–.024	.004	.006	–.002	[2].115	[2].109	.012
13 to 15 years	[3].028	[2].082	[3]–.096	.018	[3].063	–.080	[2].060	.015	.080
16 years or more	.015	–.010	.044	.016	.004	.023	.032	.073	–.074

[1] Trends are fitted to the log of the average variances and percentage of zero earnings within each experience-education category.

[2] 1.64 < t.

[3] 1.28 < t < 1.64.

training investment decisions of persons born during the baby boom. Increasing inequality of human capital investment among members of recent cohorts may have led to increased earnings inequality, especially during the early years of the life cycle. In an earlier study, we provided both theoretical and empirical support for this hypothesis. Including a measure capturing baby boom effects reduces the trend toward inequality but does not eliminate it.[15] A more satisfactory explanation for the trend towards greater inequality, both within demographic groups and within occupations (as shown by Henle and Ryscavage), therefore, remains an important topic for further research. ☐

——— *FOOTNOTES* ———

[1] Peter Henle and Paul Ryscavage, "The distribution of earned income among men and women, 1958–77," *Monthly Labor Review*, April 1980, pp. 3–10.

[2] Robert D. Plotnick, "Trends in Male Earnings Inequality," *Southern Economic Journal*, January 1982, pp. 724–32.

[3] See Finis Welch, "Effects of Cohort Size on Earnings: The Baby Boom Babies' Financial Bust," *Journal of Political Economy*, October 1979, pp. S65–S97; and Richard Freeman, "The Effect of Demographic Factors on Age-Earnings Profiles," *Journal of Human Resources*, Summer 1979, pp. 289–318.

[4] See Jacob Mincer, *Schooling, Experience and Earnings* (New York, Columbia University Press, 1974).

[5] See Jacob Mincer, *Schooling*.

[6] The March work experience supplement is a retrospective survey which asks respondents to describe their own labor force experience and that of other household members for all of the previous calendar year.

[7] Finis Welch and William Gould used data from the 1940, 1950, 1960, and 1970 censuses and the Coleman-Rossi sample to estimate labor force entry age for men conditional on observed age, education, and birth cohort. These data were kindly provided to the authors by Finis Welch. Current age minus estimated labor force entry age was used to estimate labor force experience. See Finis Welch and William Gould, "An Experience Imputation or an Imputation Experience," unpublished paper (Los Angeles, University of California, October 1976).

[8] The between-group variance in each year is simply the difference between the total and the average within-group variance shown in table 1.

[9] See Henle and Ryscavage, "The distribution of earned income."

[10] The time trends in table 1 are estimated by fitting a time trend and a spline (which is a variable which takes on the values 1, 2 . . . n in the n years following 1972, allowing the fitted time trend to kink in 1973) to the 12 yearly observations for each series. The dependent variables are the logarithms of the averages shown in table 1.

An alternative procedure is to use observations on each category in each year, yielding 1,960 observations for each regression. Because these observations can be grouped exactly on the 12 yearly values of the independent variables, this procedure is identical to estimating equations using the time trend and spline as independent variables and the average of the logs, rather than the log of the averages, as dependent variables. The trends based on this alternative procedure give the same qualitative results.

[11] The 1973–78 trend can be obtained by adding the bottom rows.

[12] For example, see Donald Parsons, "The Decline in Male Labor Force Participation," *Journal of Political Economy*, February 1980, pp. 117–34.

[13] The trends in table 2 are calculated as follows: The 1960 single year-experience-education categories, which make up our basic data, are aggregated into 192 categories made up of 16 experience-education cells observed in each of 12 years. The single year-experience-education data are used to calculate weighted averages of the two variables shown in table 2 (percentages of zero earners and within-group variances) for each of the 16 categories for each year. Time trends are fitted to the log of these averages within each aggregated category. Again, the alternative procedure of fitting trends to the averages of the logs gives similar results.

[14] Entering the unemployment rate in the regression used to estimate the trend does not alter the basic conclusion. Time trends still tend to be insignificant for all but the groups with the least education and experience.

[15] Martin Dooley and Peter Gottschalk, *Earnings Inequality Among Males in the U.S.: Trends and the Effect of Labor Force Growth*, QSEP Research Report No. 19 (Hamilton, Ont., McMaster University, February 1982).

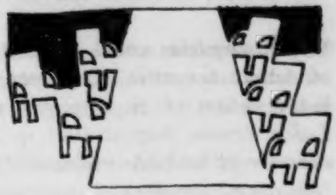
Major Agreements Expiring Next Month

This list of collective bargaining agreements expiring in December is based on contracts on file in the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more.

Employer and location	Industry	Labor organization[1]	Number of workers
American Millinery Manufacturers Association, Inc. (New York)	Apparel	Hatters	2,000
Associated Hospitals of The East Bay, Inc. (California)	Hospitals	American Nurses' Association (Ind.)	1,400
AVX Corp., AVX Ceramics (Myrtle Beach, S.C.)	Electrical products	Electrical Workers (IBEW)	1,800
Hughes Aircraft Co. (California)	Electrical products	Carpenters	13,000
International Telephone and Telegraph Corp., General Controls Division (California)	Fabricated metal products	Electrical Workers (IBEW)	1,000
Liggett and Myers Tobacco Co., Inc. (Durham, N.C.)	Tobacco	Bakery, Confectionery and Tobacco Workers	1,000
Loews Theatres, Inc., Lorillard Division (Louisville, Ky.)	Tobacco	Bakery, Confectionery and Tobacco Workers	1,500
Manufacturers' Industrial Relations Association (Interstate)	Primary metals	Molders	4,000
Michigan Consolidated Gas Co. (Detroit and Ann Arbor, Mich.)	Utilities	Service Employees	1,300
Occidental Chemical Co. (White Springs, Fla.)	Chemicals	Chemical Workers	1,500
Pacific Gas and Electric Co., 2 agreements (California)	Utilities	Electrical Workers (IBEW)	18,100
Pacific Gas and Electric Co. (California)	Utilities	Marine Engineers	1,900
RCA Corp., National Agreement (Interstate)	Electrical products	Electrical Workers (IBEW)	13,000
Republic Airlines, Inc., 2 agreements (Interstate)	Air transportation	Air Line Pilots	7,400
Salt River Project Agricultural Improvement and Power District (Phoenix, Ariz.)	Utilities	Electrical Workers (IBEW)	1,500
Standard Plastic Products, Inc. (Plainfield, N.J.)	Miscellaneous manufacturing	Leather, Plastic and Novelty Workers	1,100
Western Airlines, Inc. (Interstate)	Air transportation	Air Line Pilots	2,300
	Government activity		
Alaska: General Government Employees	Multidepartments	Alaska Public Employees Association (Ind.)	5,850
Labor Trades and Crafts Unit	Central administration	Laborers	1,400
Colorado: Denver School District 1; professional employees	Education	National Education Association (Ind.)	4,300
Ohio: Dayton Board of Education; professional employees	Education	National Education Association (Ind.)	2,000

[1] Affiliated with AFL–CIO except where noted as independent (Ind.)

Developments in Industrial Relations



Legislated settlement ends rail strike

In late September, President Reagan signed into law a legislated settlement (P.L. 97–262) to end a 4-day strike by about 26,000 members of the Brotherhood of Locomotive Engineers. The strike had curtailed rail freight and passenger service across much of the country. At issue in the dispute was the Locomotive Engineers' right to strike should they fail to maintain their traditional pay differential over other operating employees represented by the United Transportation Union if those employees negotiate "crew consist" agreements providing additional compensation in return for a reduction in crew size. The Locomotive Engineers have had such a strike provision in their contracts since 1975.

The legislated settlement preempted this right and implemented other recommendations of an emergency board established by the President in July. Under provisions of the Railway Labor Act, the President can establish such a board if negotiations and mediation reach an impasse, at which time a 60-day "cooling-off period" begins. In mid-August, the board recommended that the union accept the national railroad wage-and-benefit pattern and that the union be allowed to negotiate changes in engineer compensation when there is a "change in the compensation relationship as a result of a crew consist agreement between a given carrier and the United Transportation Union." However, the board also said that during the life of the agreement the Locomotive Engineers should only negotiate "within the peaceful procedures of the Railway Labor Act."

When the "cooling-off period" (which had been extended 10 days) expired on September 19, the Locomotive Engineers walked off their jobs. This prompted President Reagan to ask the Congress to pass emergency legislation conforming to the emergency board's recommendations to end the strike. The Congress passed the measure on September 22.

In signing the legislation, the President noted that "vital national interests" had been at stake and that a prolonged strike could have idled "nearly a million Americans"—primarily in the rail, auto, steel, and mining industries, and also have an adverse effect on the agricultural products industry. The mandated settlement provided the same general wage-and-benefit terms as those already negotiated in the railroad industry by 11 other unions, some of which had settled as early as November 1981. (See *Monthly Labor Review*, January 1982, p. 24.) Members of the United Transportation Union were voting on a pattern agreement negotiated in September.

Pre-bargaining talks end at aluminum companies

Discussions between three major aluminum companies and the United Steelworkers did not result in labor cost concessions the companies had sought. However, a union official said that the talks had "cleared the air on a number of issues" in preparation for the 1983 bargaining. The union's existing 3-year contracts with the Aluminum Co. of America, Reynolds Metals Co., and Kaiser Aluminum & Chemical Corp. expire May 31, 1983. In recent years, the Steelworkers' settlement with these companies has set a pattern for workers it represents at other aluminum companies, as well as for the Aluminum, Brick and Glass Workers union, which represents 20,000 employees of Alcoa, Reynolds, and other companies. Overall, the Steelworkers represents 25,000 employees in the industry.

The Steelworkers apparently ended talks because the Aluminum Workers rejected any negotiation with the industry, which meant that any concessions by the Steelworkers would end compensation parity in the industry. At the time the talks were terminated, the three companies were operating at less than 50 percent of capacity and, reportedly, their output was selling below the cost of production.

Steel industry update

There was renewed hope in the steel industry that the Steelworkers and the eight Coordinating Committee

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"Developments in Industrial Relations" is prepared by George Ruben and other members of the staff of the Division of Developments in Labor-Management Relations, Bureau of Labor Statistics, and is largely based on information from secondary sources.

Steel Companies could reach a pattern-setting accommodation on cuts in labor costs, despite the union's earlier rejection of an employer proposal. (See *Monthly Labor Review*, August 1982, p 56.) Steelworkers President Lloyd McBride indicated the union was willing to consider a reopening of discussions with the companies, which were operating at less than 40 percent of capacity, with some 120,000 workers on layoff.

Despite the uncertain outlook for an early settlement with the eight companies, other individual companies were able to reach wage concession agreements with the Steelworkers:

- Employees of Phoenix Steel Corp.'s Claymont, Del., plant agreed to an immediate $1.25 an hour wage cut, to be followed by a 25-cent cut in January 1983. Both reductions will continue to the August 1983 termination of the current 3-year contract. Workers at the company's Phoenixville, Pa., plant rejected a similar proposal, but negotiations were continuing. Half of the 1,800 workers at the two specialty steel plants were on furlough.
- In Illinois, 1,300 workers at Northwestern Steel & Wire Co.'s wire and rod mill agreed to reductions in pay and holidays amounting to as much as $3 an hour, according to the company. Company President Peter Dillion declined to estimate the total savings to the company but said the operation had lost money for the last 3 years. The settlement was impelled by the company's July 20 announcement that it would close the mill in 90 days if the workers did not agree to cuts in compensation.
- Colt Industries Inc. again announced plans to close its Crucible Stainless & Alloy Division mill in Midland, Pa., by yearend. However, Colt did indicate that the plant was still for sale; earlier purchase negotiations with Cyclops Corp. were not successful. The company currently has 275 employees, compared with a peak of 5,500 in 1980.
- In West Virginia, the 11,000 employees of National Steel Corp.'s Weirton Steel Division retained Lazard Freres & Co. to help in their efforts to purchase the operation. The investment banking firm will assist in forming a stock ownership plan, negotiating a purchase price, getting financing, and evaluating Weirton's assets.
- Republic Steel Corp. announced a 7- to 10-percent pay cut for 5,800 nonunion salaried employees. Earlier this year, Republic had frozen cost-of-living salary increases and merit pay increases for salaried employees and had reduced their numbers by 1,400.

Company besieged by claims, files bankruptcy

In action that may have widespread implications for other asbestos producers and processors—and for companies in other industries—Manville Corp. filed for bankruptcy, asserting that its assets were insufficient to meet the projected costs of thousands of lawsuits filed by workers claiming physical disabilities resulting from exposure to asbestos. John H. McKinney, Manville's chairman and president, explained that "our businesses are in good shape despite this recession . . . [but] we are completely overwhelmed by the cost of the asbestos health lawsuits filed against us." At the time, there were 16,500 claims pending against Manville, with 500 being added each month.

Manville apparently decided to seek protection under Chapter 11 of the Federal Bankruptcy Act of 1978 after a study by Epidemiology Resources, Inc., indicated that Manville faced a potential total of 52,000 suits at a possible cost of $2 billion, nearly twice the company's current $1.1 billion net worth. Officials said this was the "low projection"; the "high projection" was for 120,000 suits at a liability of more than $5 billion.

In recent years, Manville and other asbestos producers and users have been hit by medical claims and have been asking the Federal Government to assume a major share of the cost because many of the workers incurred cancer or asbestosis from exposure to asbestos during wartime service in shipyards. Dave Pullen of the Asbestos Compensation Coalition (nine firms that either manufacture asbestos or did so in the past) maintains that the Government has a degree of responsibility because it "acted just like any other manufacturer. They bought and sold asbestos fiber, they purchased machinery to give to asbestos manufacturers, they specified the products and controlled the workplace where most of those workers were exposed."

Initial indications were that this position was not favored by the Congress. Senator Robert Dole, chairman of the Subcommittee on the Courts, criticized Manville's decision to file under the bankruptcy act, saying "this procedure is dubious, and unusual at best. America's bankruptcy system can ill afford the additional strains to be placed upon it by those who would use its protection for shelter against personal or corporate attacks where other remedies, both legal and congressional, would seem to be more appropriate."

Attorneys for many of the claimants also reacted bitterly to Manville's action, calling it improper because the company was viable despite a $19.9 million loss during the second quarter of the year.

Actually, Manville was not the first asbestos company to file under Chapter 11. A month earlier, UNR, a Chicago company, had sought protection under the chapter, which suspends creditor claims while the company attempts to reorganize and improve its financial condition.

There were no immediate indications of how other asbestos companies would handle their claims. At the time of the Manville action, 260 other asbestos companies faced a total of 13,500 claims.

Texaco settles, 7-month strike ends

The round of bargaining in petroleum refining was finally concluded when Texaco, Inc., and the Oil, Chemical and Atomic Workers agreed on a contract that ended a 7-month strike at the company's Port Arthur, Tex., refinery. The major issue in the dispute arose in 1976, when Texaco began reducing the optional lump-sum payment retiring workers may elect instead of the usual monthly benefits. The company claimed the reduction was justified because rising interest rates would have enabled workers investing their lump sum to exceed the total value of monthly benefits drawn by other retirees. The dispute accelerated in 1981, when the union initiated and won a Federal District Court case concerning Texaco's action. At the time of the accord, the court was considering Texaco's appeal.

The parties agreed to an out-of-court settlement of the legal dispute. The accord provides for the reduction of lump-sum benefits to apply to future retirees. However, the 542 workers who retired and elected lump-sum payments between February 1976 and January 1982 will share $3 million provided by Texaco. In addition, future retirees will be credited with up to 5 years of service time lost because of strikes or union duties. Future retirees also can get credit for other time lost by paying an amount equal to 4 percent of base pay for the period lost.

The 3½ year agreement also called for wage increases of 9 percent, effective immediately, and 90 cents an hour, effective June 15, 1983. (This matches increases provided by 2-year agreements the union had negotiated with other refineries earlier in the year.) In 1984 and 1985, Texaco workers will receive the same wage increases as those resulting from the 1984 bargaining at the other companies.

In an effort to reduce its work force, Texaco agreed to pay employees who quit before they are eligible to retire $4,000 plus 1 week of pay for each year of service. Texaco said it was necessary to reduce the refinery's hourly work force by 1,000 persons because of a worldwide glut of petroleum products.

Texaco kept the Port Arthur refinery in operation during the strike, using nonunion technical and management employees.

Glass workers trade wages for job security

More than 5,000 glass workers were covered by a settlement between Libby-Owens-Ford Co. and the Glass and Ceramic Workers that a company official said "provides greater job security . . . in return for reducing future wage costs." At the time of the settlement, 2,000 hourly employees were on layoff attributed to the depressed condition of the housing and automobile industries.

The new contract, which supersedes the balance of a 3-year contract scheduled to expire in October 1983, runs to October 1985. Under the agreement:

- The union gave up 19-cent-an-hour wage increases scheduled for October of 1982 and 1983, but there will be a 19-cent increase in October 1984.
- The provision for automatic quarterly cost-of-living pay adjustments was suspended, subject to activation if the BLS Consumer Price Index for Urban Wage Earners and Clerical Workers (1967=100) rises more than 33.6 points. Part of the suspended adjustment will be recovered by the employees if parts shipped to the automobile industry reach specified levels.
- Provisions for October 1982 pension and insurance improvements were retained.
- Libby-Owens-Ford agreed to establish a $800,000 fund to pay health insurance premiums for laid-off workers, retirement incentives, or as lump-sum payments to active employees. Each local union will decide how to use its share of the fund.
- Libby-Owens-Ford agreed not to expand glassmaking or auto glass fabricating furnaces at plants where workers are not represented by the union.
- The parties agreed to reopen negotiation in October 1984 if hours worked by members of the bargaining unit drop below a specified level.

The contract covered operations in Toledo, Ohio, Ottawa, Ill., Charleston, W.Va., and Lathrop, Calif.

Newspapers begin cost-reducing measures

More than a year of uncertainty over the fate of the financially troubled *New York Daily News* was ended when the last of the newspaper's 11 unions agreed to a package of cost-reduction measures. Details of the package varied among unions, but the overall objective was to reduce labor costs by $50 million a year, the minimum cut the paper said was necessary for continued operation. The reduction was to be attained by eliminating the equivalent of 1,340 full-time employees from the work force. To help do this, the newspaper set up a $50 million fund to finance one-time "buy-out" payments for full-time employees who elect to leave. The *Daily News* also agreed to spend $44 million to upgrade its printing plant in Brooklyn and establish two suburban plants.

The accord called for (1) a 3-year extension of the current labor contracts, which had been scheduled to expire in March 1984, (2) weekly wage increases of $38,

$35, and $37 in March of 1984, 1985, and 1986, (3) a cost-of-living wage adjustment clause that could result in additional increases, and (4) a possible reopening of bargaining if the paper attains a profit that exceeds 6-percent of net worth.

The unions had agreed to reopen their current 3-year agreements (which were not scheduled to expire until March 1984) in response to a request by the parent Tribune Co. of Chicago, which cited a 1981 operating loss of $13 million and an expected 1982 loss of $30 million. The effort to save the morning tabloid came after the Tribune Co. had failed to sell the paper, which has a circulation of 1.5 million on weekdays and 2.2 million on Sundays.

Elsewhere in the industry, the *Minneapolis Star and Tribune Co.* announced that it will allow 825 nonunion employees to take up to 30 days off without pay, with an option to take more. A company official said the program will reduce payroll costs and give employees more leisure time, and that a similar program will be discussed with union-represented workers if they expressed an interest. The *Minneapolis Star* and the *Minneapolis Tribune* merged in April in an effort to reduce payroll and distribution costs.

Iron Workers pay frozen for 1 year

In Arizona, members of Iron Workers Local 75 approved a 1-year contract that freezes their pay rate at $16.25 an hour for 1 year but does provide for a 20-cent-an-hour increase in employer financing of benefits. The agreement was negotiated with the Arizona Steel Field Erectors Association. Harry Steel, business manager of the local, explained, "We have a lot of unemployment and a lot of our people are moving out of the State, so we thought it was best to hold the line until things get better." Currently, about 30 percent of the local's 1,500 members are unemployed.

Delta nonunion workers get pay increases

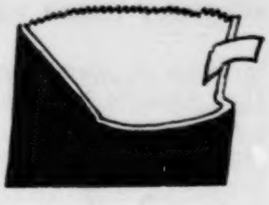
Delta Airlines granted its 33,000 nonunion employees general and merit pay increases totaling up to 8 percent, along with improvements in benefits. (The changes did not apply to Delta's 4,000 pilots, who are covered by a contract that calls for periodic improvements in pay and benefits.) Delta suffered an operating loss for the quarter ending March 31, 1982—its first quarterly loss in 25 years—but rebounded and showed a net profit of $20.8 million for the fiscal year that ended June 30.

Teamsters' pension fund monitoring extended

A quarter century of controversy concerning the Teamsters' Central States Pension Fund was eased when fund trustees and the Department of Labor entered into a consent decree that will extend Federal monitoring and independent management of the fund's assets for at least 10 years. The decree opened the possibility of settling several Federal suits involving the fund. In the most important suit, filed in 1978, the Government accused Teamsters' President Roy L. Williams and 18 other former trustees of "gross mismanagement" of millions of dollars of fund assets. The trustees had resigned a year earlier, under pressure from the Department of Labor and the Internal Revenue Services.

Secretary of Labor, Raymond J. Donovan, said the decree contains "virtually all of the safeguards that the Government has been seeking . . . [to] assure that the assets of the Teamsters' pension fund are protected and managed prudently and professionally.

The decree contains provisions to (1) require the fund to use an independent assets manager (as before, the manager is permitted to consult with the trustees, but trustees cannot veto the manager's investment decisions); (2) permit the trustees to fire the investment manager and hire a replacement, subject to approval by the court; (3) create an independent special counsel, to be selected by the court, to monitor operation of the fund and periodically report the results to the court; (4) remove fund trustees and employees convicted of certain "relevant" crimes, such as fraud or embezzlement; and (5) continue the court's jurisdiction over the fund for 10 years, for an additional 5 years if the Department of Labor insists, and beyond that "for good cause shown." □



Book Reviews

Holy macro! Inflation's not that simple

Commodity Prices and the New Inflation. By Barry P. Bosworth and Robert Z. Lawrence. Washington, The Brookings Institution, 1982. 215 pp. $24.95, cloth; $9.95, paper.

The traditional division of economic theory in college textbooks between microeconomics (dealing with such topics as the theory of the firm, market structures, and price determination) and macroeconomics (dealing with such topics as business cycles, inflation, and unemployment), while a useful pedagogical tool in many respects, may also tend to obscure some crucial connections in the real world. It is particularly important to realize that the effectiveness of macroeconomic policy alternatives such as anti-inflation remedies may be highly dependent on the microeconomic forms of market structure and industrial organization prevailing within the economy.

This point is central to the analysis presented by Barry Bosworth and Robert Lawrence in their new book, *Commodity Prices and the New Inflation.* They contend that we cannot rely on macroeconomic measures alone to contain inflation without sacrificing real output and employment because the American economy is a thorough mixture of "auction markets," where prices are largely determined by competitive forces, and "customer" or "fixed-price" markets, where prices are set in at least a partially monopolistic environment.

This distinction between "perfect" and "imperfect" competition has been a staple of microeconomic theory for almost half a century. The implications of this distinction for macroeconomic stabilization policies have seldom been well appreciated, however. Bosworth and Lawrence observe that, on one hand, if the economy were dominated by markets fitting into the competitive model, then "fiscal and monetary policies would be an adequate basis for controlling inflation." If, on the other hand, "all prices and wages reflected the outcome of a bilateral monopoly or fixed-price model," then some variation of incomes policies might be effective. "But since the actual economy is a mixture of market structures," the authors conclude, "either of these policies will be frustrated when used alone." Given these circumstances, the authors summarize the basis for their emphasis on control of supplies of primary agricultural and energy commodities as a critical element in any comprehensive anti-inflation program:

> Any attempt to stabilize the overall price level by inducing a price change in the inflexible sector to offset changes in the sensitive sector might prove far more costly than stabilizing the price in the sensitive sector itself. Indeed, it is the extreme sensitivity of commodity prices to changes in demand and supply that suggests that control over supplies in these markets is likely to be more efficient than control over the aggregate money supply. This does not mean that monetary policy should be abandoned as a weapon against all types of inflation but rather that it should be supplemented in the case of commodity price changes. In fact, macroeconomic policy is of great importance to primary commodity markets, which need a stable environment to function efficiently.

Bosworth and Lawrence focus on the pivotal role played by primary commodity prices in the wide fluctuations in the level of inflation during the 1970's, not only in our own country, but in Western Europe and Japan as well. They concentrate on the determinants of agricultural and energy prices; while prices for many other raw commodities were also quite volatile during the past decade, the authors cite evidence to demonstrate that "their impact on the average price level was small because the value of their use is small as a share of total GNP." In this country, consumption of these other raw materials amounts to less than 4 percent of the gross national product.

One of the more intriguing aspects of the authors' analysis of farm price movements since 1970 is their explanation of how a mere 3 or 4 percent drop from the trend of world production of cereals (that is, grains and rice) in 1972–73 led to a doubling in these prices. Bosworth and Lawrence give relatively little weight to several popular explanations, such as the long-term rise in world demand for livestock products and hence cereals. They fix a large share of responsibility instead on short-sighted government policies here and abroad. For example, the American government had decided by the early 1970's to let our domestic grain reserves drain to appease both farmers worried about the reserve's depressing impact on grain prices and consumers complaining about the reserve's costs. At the same time, many foreign governments had chosen to insulate their populations from sudden shifts in world farm prices by controlling retail food price movements, thereby failing to restrain demand in times of shortage. Thus, when the Soviet Union unexpectedly emerged as a major grain purchaser at a time when our reserves were already down and world demand was still high, American consumers were forced to bear the brunt of the inevitable adjustment process through both skyrocketing prices and reduced food consumption. More suitable government policies could have spread the burden more evenly and would not have led to such an inflationary outcome.

The shifting balance of power between the oil-producing companies controlled from the industrial West and the oil-producing countries of the Third World receives considerable attention from the authors. They remind us with painful clarity that few in the West realized the potential strength of the Organization of Petroleum Exporting Countries (OPEC) until the 1973 oil embargo, even though in retrospect the signs of OPEC's growing power were obvious long before. They demonstrate that the two major oil crises of the 1970's "were not marked by big declines in supply but rather by panicky inventory hoarding in response to expected shortfalls." Policies to influence consumer psychology are therefore an integral part of any strategy to help prevent or alleviate recurrences of steep runups in oil product prices.

The authors realize that choosing and implementing the right mix of policies targeted at constraining commodity prices in international markets will not be easy. In general, Bosworth and Lawrence support a series of sophisticated commodity reserve policies that might require more coordination between nations than has hitherto been attainable. The authors explain quite convincingly why they reject traditional multinational reserve and commodity stabilization agreements, which they view as "inherently unstable" for political as well as economic reasons. Bosworth and Lawrence see more hope, for example, in a network of bilateral agreements on grain reserves that would allow contracting countries to take care of each other's grain import or export needs within predetermined price ranges, leaving countries outside the network to adjust to any major supply disruptions or gluts in the "residual market." These and other targeted microeconomic policy recommendations may prove to be the most controversial part of the book, even for those of us who agree that macroeconomic stabilization policies by themselves are inadequate.

Commodity Prices and the New Inflation is an exceptionally well written and cogently argued book that makes a valuable contribution to understanding how the contemporary economy works—or, more pointedly, why it hasn't worked so well in recent years. Bosworth and Lawrence's synthesis of macro- and microeconomic theories is quite successful, I believe, as is their analysis of the mistakes that have plagued public policies so often. Their advice for solving the problems confronting us, however, is still very much open for debate. They freely draw upon a wealth of empirical studies conducted by other economists without burdening the book with esoteric mathematical exercises. This is a work for any economically literate person interested in pondering the dilemmas of stagflation.

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Turning point in current thinking

The Crisis in Economic Theory. Edited by Daniel Bell and Irving Kristol. New York, Basic Books, Inc., Publishers, 1981. 226 pp. $15.50, cloth; $6, paper.

This book comprises a series of essays originally published in the 50th anniversary issue of *The Public Interest* magazine. The essays run the gamut of contemporary economic theory—from the rational expectations theorists and monetarists to the Post-Keynesians and Marxists. The common theme integrating the different perspectives is the belief that the synthesis of Keynesian and neoclassical economics, which provided a basic rationale for economic policy in the generation after World War II, has become irrelevant, if not misleading. This theory became outmoded in the 1970's as simultaneous inflation, recession, and unemployment came to characterize capitalist economies.

In the "golden age" of the neoclassical synthesis, 1947 to 1973, democratic capitalist nations generally accepted the Keynesian thesis that the central government's budget through its taxing and spending programs could serve as an economic balance and stabilize economies at high employment levels. The advent of annual national income accounting, computerized econometric models, and the availability of reliable and current unemployment data from the Current Population Survey appeared to provide a basis for utilizing Keynesian theories as operational tools in planning for economic growth.

The Employment Act of 1946 and the establishment of the Council of Economic Advisers represented official recognition that the thrust, if not the specific details, of the Keynesian theory, had become an important foundation of government policy. The Keynesian system was supplemented by the widespread acceptance of the Phillips curve analysis suggesting that governments could choose among unemployment rate goals depending on the rate of inflation they were prepared to accept.

The strength of the neoclassical synthesis was its integration of a role for government in determining the overall level of economic activity with the maintenance of a predominant role for competition and market pressures in individual sectors of the economy. The primary flaw with the theory in the 1970's was the contradictory policy options it implied. To reduce inflation, the Keynesian diagnosis pointed to the need for a surplus in the Federal budget to drain off purchasing power from the economy. To counter rising unemployment, the theory recommended that the government operate at a deficit to stimulate the demand for goods and labor. Because it was impossible for government to run both a surplus and a deficit at the same time, the net effect of this analysis in matters of public policy was paralysis—a paralysis punctuated by periodic attempts to stimulate or restrain the economy. These attempts were quicky abandoned for their alternatives. The disenchantment with Keynesian policies was intensified as inflation moved many Americans into higher tax brackets unaccompanied by comparable increases in purchasing power.

The essays in *The Crisis in Economic Theory* present a variety of theoretical formulations that might provide alternatives to the neoclassical synthesis as a basis for policy. To some, as in Mark Willes' exposition of rational expectations theory, the critical variable in economics consists of the expectations of individuals attempting to adapt to a highly uncertain future. Because no one knows in advance what will happen to the economy when government policy changes, there is a need for reducing uncertainties created by government policy by minimizing the government's economic role. Appropriately, Willes regards the rational expectations theory as constituting a "counterrevolution" in economics. Israel Kirzner's well-reasoned essay on the Austrian perspective in economics recommends a return to economists' earlier focus on the entrepreneur as the strategic factor in explaining the dynamics of the economy. Irving Kristol contends that current economic theory has retreated into a mode of overrefinement that obscures the critical substratum of truth in the classical and neoclassical emphasis on the importance of individual self-interest in promoting economic growth. The common thread in these essays is the absence of a role for government as an economic balance and a penchant for abandoning the Keynesian element in the neoclassical synthesis.

At the other end of the spectrum, the Neo-Keynesians, illustrated by Paul Davidson's essay, seek to provide the theoretical underpinning for a more active government role in the economy. The Neo-Keynesians appear to represent more of a tendency than a formalized theory, a tendency that would replace the neoclassical synthesis with a synethesis of the Keynesian emphasis on the government's role in stabilizing the economy with more activist government policies in controlling industry and lessening economic inequalities. A Marxist perspective, represented by Edward Nell's essay, contends that the Marxian theory of value and capital provides a valid framework for assessing the socioeconomic changes that have produced the present economic drift and for anticipating future directions. A common denominator of the critics represented in the volume is their vision of the economy as one dominated by giant firms possessing market power rather than by the competitive pressures assumed in the neoclassical theory.

Crisis in Economic Theory underscores the uneasy union that has typically existed between economic theory and labor economics. This union is likely to become more insecure if the Keynesian component in the neoclassical synthesis loses its significance for policy. The conventional neoclassical theory focuses on labor as a cost of production, and the theory tends to view labor organizations as semimonopolistic restraints in the labor market. Economists concerned with labor issues have tended to stress the importance of bargaining, group behavior, and social factors concerned with livelihood. Keynesian economics built in a positive role for labor organizations because of it emphasis on wages as income and purchasing power as well as costs. Union efforts to raise wages, therefore, could frequently be justified as benefiting society as well as union members because they helped to maintain high levels of effective demand. The differences in approach are also illustrated by the controversies over maintaining or increasing the statutory minimum wage. The minimum wage standards that protect livelihood and purchasing power in the view of most Keynesian-oriented labor economists are regarded in the neoclassical tradition as the cause for much of the recent severe unemployment among young people, especially young blacks.

In his essay on "Models and Reality in Economic Discourse," Daniel Bell cogently relates theoretical issues in economics to the substantive changes that have characterized the larger society. According to Bell, the contemporary economic models are losing their relevance in explaining reality, because the economies to which they refer have been transformed by technological advances, market power, and expansion of the Government's role in the economy. In democratic capitalist societies in which governments account for between 20 and 60 percent of all economic transactions, economic theories based on the behavior of atomistic individuals who are assumed to be maximizing their preferences provide limited insight. Economic choices take on a political dimension as they increasingly become influenced by the government's collective decisionmaking as in defense outlays, or by the efforts of organized groups made up of farmers, businessmen, wage earners, or older persons to seek the government's aid in protecting their economic status. Bell's critique raises anew the question presented 75 years ago by that acerbic and insightful critic of orthodox economic theory, Thorstein Veblen. Veblen asked, "Why is Economics Not an Evolutionary Science?" The absence of a significant response to Veblen's question helps to explain much of the predicament faced by economic theory in the 1970's and early 1980's.

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I certify that the statements made by me above are correct and complete.

(Signed) Henry Lowenstern, Editor-in-Chief

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NOTES ON CURRENT LABOR STATISTICS

This section of the *Review* presents the principal statistical series collected and calculated by the Bureau of Labor Statistics. A brief introduction to each group of tables provides definitions, notes on the data, sources, and other material usually found in footnotes.

Readers who need additional information are invited to consult the BLS regional offices listed on the inside front cover of this issue of the *Review*. Some general notes applicable to several series are given below.

Seasonal adjustment. Certain monthly and quarterly data are adjusted to eliminate the effect of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might otherwise mask short-term movements of the statistical series. Tables containing these data are identified as "seasonally adjusted." Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years.

Seasonally adjusted labor force data in tables 2–7 were revised in the March 1982 issue of the *Review* to reflect experience through 1981. The original estimates also were revised to 1970 to reflect 1980 census population controls.

Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are being seasonally adjusted with a new procedure called X-11/ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada Catalogue No. 12-564E, February 1980). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. Revisions of historical data continue to be made only at the end of each calendar year.

Annual revision of the seasonally adjusted payroll data shown in tables 10, 12, and 14 were made in August 1981 using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 28 and 29 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

Adjustments for price changes. Some data are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of $3 and a current price index number of 150, where 1967 = 100, the hourly rate expressed in 1967 dollars is $2 ($3/150 × 100 = $2). The resulting values are described as "real," "constant," or "1967" dollars.

Availability of information. Data that supplement the tables in this section are published by the Bureau of Labor Statistics in a variety of sources. Press releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule given below. The *BLS Handbook of Labor Statistics*, Bulletin 2070, provides more detailed data and greater historical coverage for most of the statistical series presented in the *Monthly Labor Review*. More information from the household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau. Historically, comparable information from the establishment survey is published in two comprehensive data books—*Employment and Earnings, United States* and *Employment and Earnings, States and Areas*, and their annual supplements. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

Symbols

p = preliminary. To improve the timeliness of some series, preliminary figures are issued based on representative but incomplete returns.
r = revised. Generally, this revision reflects the availability of later data but may also reflect other adjustments.
n.e.c. = not elsewhere classified.

Schedule of release dates for major BLS statistical series

Series	Release date	Period covered	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	November 5	October	December 3	November	January 7	December	1–10
Producer Price Index	November 16	October	December 10	November	January 14	December	21–25
Consumer Price Index	November 23	October	December 21	November	January 21	December	17–20
Real earnings	November 23	October	December 21	November	January 21	December	11–15
Productivity and costs:							
Nonfinancial corporations	November 29	3rd quarter	.....	.....	.....	.....	26–29
Nonfarm business and manufacturing	.....	.....	.....	.....	January 28	4th quarter	26–29
Major collective bargaining settlements	.....	.....	.....	.....	January 31	1982	33–34

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 60,000 households selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

Definitions

Employed persons are (1) those who worked for pay any time during the week which includes the 12th day of the month or who worked unpaid for 15 hours or more in a family-operated enterprise and (2) those who were temporarily absent from their regular jobs because of illness, vacation, industrial dispute, or similar reasons. A person working at more than one job is counted only in the job at which he or she worked the greatest number of hours.

Unemployed persons are those who did not work during the survey week, but were available for work except for temporary illness and had looked for jobs within the preceding 4 weeks. Persons who did not look for work because they were on layoff or waiting to start new jobs within the next 30 days are also counted among the unemployed. The **unemployment rate** represents the number unemployed as a percent of the civilian labor force.

The **civilian labor force** consists of all employed or unemployed persons in the civilian noninstitutional population; the **total labor force** includes military personnel. Persons **not in the labor force** are those not classified as employed or unemployed; this group includes persons retired, those engaged in their own housework, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job market factors, and those who are voluntarily idle. The **noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy.

Full-time workers are those employed at least 35 hours a week; **part-time workers** are those who work fewer hours. Workers on part-time schedules for economic reasons (such as slack work, terminating or starting a job during the week, material shortages, or inability to find full-time work) are among those counted as being on full-time status, under the assumption that they would be working full time if conditions permitted. The survey classifies unemployed persons in full-time or part-time status by their reported preferences for full-time or part-time work.

Notes on the data

From time to time, and especially after a decennial census, adjustments are made in the Current Population Survey figures to correct for estimating errors during the preceding years. These adjustments affect the comparability of historical data presented in table 1. A description of these adjustments and their effect on the various data series appear in the Explanatory Notes of *Employment and Earnings.*

Data in tables 2–7 are seasonally adjusted, based on the seasonal experience through December 1981.

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950–81

[Numbers in thousands]

Year	Total noninstitutional population	Total labor force		Civilian labor force							Not in labor force
					Employed				Unemployed		
		Number	Percent of population	Total	Total	Percent of population	Agriculture	Nonagricultural industries	Number	Percent of labor force	
1950	106,645	63,858	59.9	62,208	58,918	55.2	7,160	51,758	3,288	5.3	42,787
1955	112,732	68,072	60.4	65,023	62,170	55.1	6,450	55,722	2,852	4.4	44,660
1960	119,759	72,142	60.2	69,628	65,778	54.9	5,458	60,318	3,852	5.5	47,617
1965	129,236	77,178	59.7	74,455	71,088	55.0	4,361	66,726	3,366	4.5	52,058
1966	131,180	78,893	60.1	75,770	72,895	55.6	3,979	68,915	2,875	3.8	52,288
1967	133,319	80,793	60.6	77,347	74,372	55.8	3,844	70,527	2,975	3.8	52,527
1968	135,562	82,272	60.7	78,737	75,920	56.0	3,817	72,103	2,817	3.6	53,291
1969	137,841	84,240	61.1	80,734	77,902	56.5	3,606	74,296	2,832	3.5	53,602
1970	140,272	85,959	61.3	82,771	78,678	56.1	3,463	75,215	4,093	4.9	54,315
1971	143,033	87,198	61.0	84,382	79,367	55.5	3,394	75,972	5,016	5.9	55,834
1972	146,574	89,484	61.1	87,034	82,153	56.0	3,484	78,669	4,882	5.6	57,091
1973	149,423	91,756	61.4	89,429	85,064	56.9	3,470	81,594	4,365	4.9	57,667
1974	152,349	94,179	61.8	91,949	86,794	57.0	3,515	83,279	5,156	5.6	58,171
1975	155,333	95,955	61.8	93,775	85,846	55.3	3,408	82,438	7,929	8.5	59,377
1976	158,294	98,302	62.1	96,158	88,752	56.1	3,331	85,421	7,406	7.7	59,991
1977	161,166	101,142	62.8	99,009	92,017	57.1	3,283	88,734	6,991	7.1	60,025
1978	164,027	104,368	63.6	102,251	96,048	58.6	3,387	92,661	6,202	6.1	59,659
1979	166,951	107,050	64.1	104,962	98,824	59.2	3,347	95,477	6,137	5.8	59,900
1980	169,848	109,042	64.2	106,940	99,303	58.5	3,364	95,938	7,637	7.1	60,806
1981	172,272	110,812	64.3	108,670	100,397	58.3	3,368	97,030	8,273	7.6	61,460

2. Employment status by sex, age, race, and Hispanic origin, seasonally adjusted

[Numbers in thousands]

Employment status	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
TOTAL															
Total noninstitutional population[1]	169,848	172,272	172,758	172,966	173,155	173,330	173,495	173,657	173,843	174,020	174,201	174,364	174,544	174,707	174,889
Armed Forces[1]	2,102	2,142	2,165	2,158	2,158	2,164	2,159	2,168	2,175	2,176	2,175	2,173	2,180	2,196	2,198
Civilian noninstitutional population[1]	167,745	170,130	170,593	170,809	170,996	171,166	171,335	171,489	171,667	171,844	172,026	172,190	172,364	172,511	172,690
Civilian labor force	106,940	108,670	108,494	109,012	109,272	109,184	108,879	109,165	109,346	109,648	110,666	110,191	110,522	110,644	110,980
Participation rate	63.8	63.9	63.6	63.8	63.9	63.8	63.5	63.7	63.7	63.8	64.3	64.0	64.1	64.1	64.3
Employed	99,303	100,397	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117	99,764	99,732	99,839	99,720
Employment-population ratio[2]	58.5	58.3	58.0	58.0	57.9	57.5	57.4	57.3	57.2	57.1	57.5	57.2	57.1	57.1	57.0
Agriculture	3,364	3,368	3,358	3,378	3,372	3,209	3,411	3,373	3,349	3,309	3,488	3,357	3,460	3,435	3,368
Nonagricultural industries	95,938	97,030	96,900	96,965	96,800	96,404	96,170	96,217	96,144	96,032	96,629	96,406	96,272	96,404	96,352
Unemployed	7,637	8,273	8,236	8,669	9,100	9,571	9,298	9,575	9,854	10,307	10,549	10,427	10,790	10,805	11,260
Unemployment rate	7.1	7.6	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8	9.8	10.1
Not in labor force	60,806	61,460	62,099	61,797	61,724	61,982	62,456	63,324	63,321	62,197	61,360	61,999	61,842	61,867	61,710
Men, 20 years and over															
Civilian noninstitutional population[1]	71,138	72,419	72,670	72,795	72,921	73,020	73,120	73,209	73,287	73,392	73,499	73,585	73,685	73,774	73,867
Civilian labor force	56,455	57,197	57,262	57,355	57,459	57,665	57,368	57,448	57,554	57,730	58,164	58,016	58,084	58,026	58,407
Participation rate	79.4	79.0	78.8	78.8	78.8	79.0	78.5	78.5	78.5	78.7	79.1	78.8	78.8	78.7	79.1
Employed	53,101	53,582	53,683	53,504	53,354	53,122	53,047	53,097	53,006	52,988	53,260	52,985	52,996	52,887	52,828
Agriculture	2,396	2,384	2,383	2,413	2,382	2,311	2,390	2,386	2,377	2,382	2,464	2,424	2,474	2,436	2,447
Nonagricultural industries	50,706	51,199	51,310	51,091	50,972	50,811	50,657	50,711	50,629	50,606	50,796	50,561	50,522	50,451	50,381
Unemployed	3,353	3,615	3,569	3,851	4,105	4,543	4,322	4,351	4,548	4,742	4,904	5,031	5,088	5,139	5,579
Unemployment rate	5.9	6.3	6.2	6.7	7.1	7.9	7.5	7.6	7.9	8.2	8.4	8.7	8.8	8.9	9.6
Women, 20 years and over															
Civilian noninstitutional population[1]	80,065	81,497	81,792	81,920	82,038	82,151	82,260	82,367	82,478	82,591	82,707	82,811	82,926	83,035	83,152
Civilian labor force	41,106	42,485	42,344	42,831	42,987	42,88	42,868	43,031	43,243	43,301	43,683	43,904	44,076	44,115	44,025
Participation rate	51.3	52.1	51.8	52.3	52.4	52.2	52.1	52.2	52.4	52.4	52.8	53.0	53.2	53.1	52.9
Employed	38,492	39,590	39,426	39,814	39,878	39,713	39,764	39,744	39,807	39,715	40,075	40,350	40,392	40,490	40,369
Agriculture	584	604	608	596	63.5	572	64.9	628	636	601	634	581	600	589	585
Nonagricultural industries	37,907	38,986	39,818	39,218	39,243	39,141	39,115	39,116	39,172	39,114	39,441	39,769	39,791	39,901	39,784
Unemployed	2,615	2,895	2,918	3,017	3,109	3,175	3,104	3,286	3,435	3,586	3,608	3,554	3,684	3,626	3,656
Unemployment rate	6.4	6.8	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3	8.1	8.4	8.2	8.3
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	16,543	16,214	16,131	16,093	16,037	15,996	15,955	15,913	15,902	15,861	15,820	15,794	15,753	15,702	15,671
Civilian labor force	9,378	8,988	8,888	8,826	8,826	8,631	8,643	8,686	8,549	8,616	8,819	8,271	8,362	8,503	8,548
Participation rate	56.7	55.4	55.1	54.8	55.0	54.0	54.2	54.6	53.8	54.3	55.7	52.4	53.1	54.2	54.5
Employed	7,710	7,225	7,139	7,025	6,940	6,778	6,771	6,748	6,679	6,637	6,782	6,429	6,344	6,463	6,523
Agriculture	385	380	367	369	355	326	373	359	336	326	390	353	386	411	336
Nonagricultural industries	7,325	6,845	6,772	6,656	6,585	6,452	6,398	6,389	6,343	6,311	6,392	6,076	5,958	6,052	6,187
Unemployed	1,669	1,763	1,749	1,801	1,886	1,853	1,872	1,938	1,870	1,979	2,037	1,842	2,018	2,040	2,025
Unemployment rate	17.8	19.6	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1	24.0	23.7
White															
Civilian noninstitutional population[1]	146,122	147,908	148,370	148,562	148,631	148,755	148,842	148,855	149,132	149,249	149,250	149,429	149,569	149,536	149,652
Civilian labor force	93,600	95,052	94,884	95,365	95,535	95,329	95,120	95,333	95,508	96,015	96,641	96,223	96,493	96,414	96,762
Participation rate	64.1	64.3	64.0	64.2	64.3	64.1	63.9	64.0	64.0	64.3	64.8	64.4	64.5	64.5	64.7
Employed	87,715	88,709	88,628	88,734	88,498	88,010	87,955	87,990	87,956	87,988	88,450	88,173	88,137	88,133	88,020
Unemployed	5,884	6,343	6,256	6,631	7,037	7,319	7,165	7,344	7,552	8,026	8,191	8,050	8,356	8,281	8,742
Unemployment rate	6.3	6.7	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5	8.4	8.7	8.6	9.0
Black															
Civilian noninstitutional population[1]	17,824	18,219	18,297	18,333	18,362	18,392	18,423	18,450	18,480	18,511	18,542	18,570	18,600	18,626	18,659
Civilian labor force	10,865	11,086	11,134	11,188	11,207	11,226	11,188	11,205	11,217	11,170	11,335	11,253	11,322	11,412	11,482
Participation rate	61.0	60.8	60.9	61.0	61.0	61.0		60.7	60.7	60.3	61.1	60.6	60.9	61.3	61.5
Employed	9,313	9,355	9,319	9,313	9,321	9,279	9,314	9,265	9,197	9,111	9,216	9,174	9,223	9,262	9,166
Unemployed	1,553	1,731	1,815	1,875	1,886	1,947	1,874	1,939	2,020	2,058	2,120	2,079	2,098	2,150	2,316
Unemployment rate	14.3	15.6	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7	18.5	18.5	18.8	20.2
Hispanic origin															
Civilian noninstitutional population[1]	8,901	9,310	9,486	9,559	9,556	9,519	9,400	9,341	9,297	9,235	9,297	9,428	9,521	9,689	9,464
Civilian labor force	5,700	5,972	5,984	6,074	6,151	6,095	6,054	6,065	6,024	5,933	6,001	5,931	5,966	6,087	5,967
Participation rate	64.0	64.1	63.0	63.5	64.4	64.0	64.4	64.9	64.8	64.2	64.5	62.9	62.7	62.8	63.1
Employed	5,126	5,348	5,393	5,422	5,446	5,426	5,330	5,298	5,260	5,191	5,166	5,131	5,135	5,197	5,097
Unemployed	575	624	571	652	705	669	724	767	764	743	834	800	832	890	870
Unemployment rate	10.1	10.4	9.6	10.7	11.5	11.0	12.0	12.6	12.7	12.5	13.9	13.5	13.9	14.6	14.6

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[1] The population and Armed Forces figures are not seasonally adjusted.

[2] Civilian employment as a percent of the total noninstitutional population (including Armed Forces).

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups.

3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
CHARACTERISTIC															
Total employed, 16 years and over	99,303	100,397	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117	99,764	99,732	99,639	99,720
Men	57,186	57,397	57,471	57,266	57,051	56,725	56,629	56,658	56,472	56,401	56,820	56,223	56,192	56,210	56,148
Women	42,117	43,000	42,787	43,077	43,121	42,888	42,952	42,932	43,020	42,940	43,297	43,541	43,540	43,630	43,572
Married men, spouse present	39,004	38,882	38,855	38,746	38,553	38,342	38,234	38,255	38,181	38,142	38,312	38,354	38,213	38,184	38,041
Married women, spouse present	23,532	23,915	23,626	23,874	23,820	23,691	23,744	23,727	23,900	23,831	24,213	24,401	24,223	24,300	24,187
Women who maintain families	4,780	4,998	5,015	5,045	5,049	5,064	5,107	5,158	5,095	5,095	4,986	5,112	5,247	5,216	5,115
OCCUPATION															
White-collar workers	51,882	52,949	52,908	53,199	53,086	53,084	52,836	52,841	52,763	53,177	53,706	53,586	53,685	53,750	53,876
Professional and technical	15,968	16,420	16,598	16,681	16,657	16,774	16,803	16,612	16,659	16,844	16,818	17,053	17,292	17,023	16,901
Managers and administrators, except farm	11,138	11,540	11,533	11,616	11,461	11,424	11,091	11,253	11,311	11,501	11,541	11,504	11,355	11,613	11,649
Salesworkers	6,303	6,425	6,441	6,400	6,418	6,450	6,520	6,544	6,637	6,603	6,587	6,547	6,587	6,677	6,507
Clerical workers	18,473	18,564	18,336	18,502	18,550	18,436	18,423	18,432	18,155	18,229	18,759	18,482	18,471	18,437	18,819
Blue-collar workers	31,452	31,261	31,266	30,953	30,683	30,344	30,203	30,300	30,416	29,924	29,926	29,716	29,609	29,465	29,143
Craft and kindred workers	12,787	12,662	12,514	12,446	12,411	12,446	12,370	12,454	12,511	12,492	12,316	12,207	12,229	12,342	12,253
Operatives, except transport	10,565	10,540	10,524	10,410	10,220	10,169	9,966	9,955	9,860	9,688	9,585	9,655	9,453	9,257	8,938
Transport equipment operatives	3,531	3,476	3,506	3,580	3,438	3,368	3,415	3,503	3,397	3,400	3,419	3,414	3,439	3,268	3,369
Nonfarm laborers	4,567	4,583	4,722	4,517	4,614	4,361	4,451	4,397	4,648	4,343	4,607	4,441	4,488	4,598	4,583
Service workers	13,228	13,438	13,391	13,52[illegible]	13,670	13,639	13,709	13,612	13,526	13,555	13,738	13,791	13,634	13,926	14,029
Farmworkers	2,741	2,749	2,743	2,770	2,802	2,660	2,817	2,787	2,710	2,623	2,731	2,660	2,750	2,711	2,714
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,425	1,464	1,461	1,502	1,436	1,352	1,377	1,426	1,416	1,423	1,541	1,431	1,530	1,588	1,538
Self-employed workers	1,642	1,638	1,643	1,631	1,641	1,602	1,674	1,596	1,644	1,664	1,698	1,676	1,674	1,613	1,562
Unpaid family workers	297	266	256	261	321	228	380	359	277	270	236	251	250	254	255
Nonagricultural industries:															
Wage and salary workers	88,525	89,543	89,376	89,460	89,238	88,991	88,759	88,586	88,526	88,322	89,051	88,606	88,541	88,737	88,650
Government	15,912	15,689	15,475	15,491	15,397	15,585	15,578	15,527	15,492	15,453	15,422	15,635	15,443	15,569	15,691
Private industries	72,612	73,853	73,901	73,969	73,841	73,406	73,181	73,059	73,034	72,869	73,629	72,970	73,098	73,168	72,959
Households	1,192	1,208	1,102	1,162	1,204	1,291	1,248	1,161	1,225	1,192	1,202	1,201	1,200	1,242	1,229
Other	71,420	72,645	72,799	72,807	72,637	72,115	71,932	71,898	71,809	71,677	72,427	71,770	71,898	71,927	71,730
Self-employed workers	7,000	7,097	7,217	7,152	7,141	7,057	6,971	7,055	7,126	7,264	7,269	7,319	7,268	7,352	7,478
Unpaid family workers	413	390	399	451	425	410	410	408	434	413	382	397	390	409	372
PERSONS AT WORK [1]															
Nonagricultural industries	90,209	91,377	90,878	91,384	91,323	90,922	90,125	90,892	90,548	90,596	91,282	91,020	90,501	90,508	91,054
Full-time schedules	73,590	74,339	73,794	73,886	73,915	73,360	72,803	73,026	72,649	72,335	73,036	72,662	c72,430	72,112	71,700
Part time for economic reasons	4,064	4,499	4,656	5,009	5,026	5,268	5,071	5,563	5,717	5,834	5,763	5,444	5,492	5,648	6,000
Usually work full time	1,714	1,738	1,759	2,006	1,945	2,121	1,783	2,193	2,237	2,223	2,211	2,084	2,001	2,054	2,571
Usually work part time	2,350	2,761	2,897	3,003	3,081	3,167	3,287	3,370	3,480	3,611	3,552	3,380	3,491	3,594	4,029
Part time for noneconomic reasons	12,555	12,539	12,428	12,489	12,382	12,274	12,251	12,300	12,183	12,427	12,483	12,914	12,579	12,748	12,754

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial disputes.

4. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
CHARACTERISTIC															
Total, 16 years and over	7.1	7.6	7.8	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8	9.8	10.1
Both sexes, 16 to 19 years	17.8	19.6	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1	24.0	23.7
Men, 20 years and over	5.9	6.3	6.2	6.7	7.1	7.9	7.5	7.6	7.9	8.2	8.4	8.7	8.8	8.9	9.6
Women, 20 years and over	6.4	6.8	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3	8.1	8.4	8.2	8.3
White, total	6.3	6.7	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5	8.4	8.7	8.6	9.0
Both sexes, 16 to 19 years	15.5	17.3	17.2	17.7	19.0	19.0	19.6	20.0	19.0	20.8	20.3	19.4	21.0	20.6	20.4
Men, 16 to 19 years	16.2	17.9	17.5	17.9	19.6	20.2	20.8	20.4	20.2	22.3	21.2	21.1	22.6	22.5	22.0
Women, 16 to 19 years	14.8	16.6	16.8	17.5	18.3	17.7	18.2	19.4	17.8	19.2	18.2	17.5	19.2	18.6	18.7
Men, 20 years and over	5.3	5.6	5.5	5.9	6.4	6.9	6.6	6.7	7.0	7.3	7.5	7.7	7.9	7.9	8.6
Women, 20 years and over	5.6	5.9	5.9	6.1	6.3	6.4	6.3	6.6	6.9	7.2	7.3	7.1	7.3	7.1	7.4
Black, total	14.3	15.6	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7	18.5	18.5	18.8	20.2
Both sexes, 16 to 19 years	38.5	41.4	40.8	45.6	44.1	42.2	41.2	42.3	46.0	48.1	49.8	52.6	49.7	51.6	48.5
Men, 16 to 19 years	37.5	40.7	38.5	41.6	41.9	39.6	36.3	40.7	48.5	48.3	50.6	58.1	48.3	50.1	51.2
Women, 16 to 19 years	39.8	42.2	43.4	49.5	46.6	45.1	46.7	44.2	43.1	47.8	48.9	46.2	51.2	53.1	45.4
Men, 20 years and over	12.4	13.5	14.5	14.7	15.5	16.5	16.3	16.0	16.0	16.9	17.0	17.1	16.8	17.2	19.8
Women, 20 years and over	11.9	13.4	14.0	13.9	13.6	14.1	13.3	14.5	15.4	15.6	15.3	15.0	15.5	15.1	15.7
Hispanic origin, total	10.1	10.4	9.6	10.7	11.5	11.0	12.0	12.6	12.7	12.5	13.9	13.5	13.9	14.6	14.6
Married men, spouse present	4.2	4.3	4.4	4.8	5.2	5.7	5.3	5.3	5.5	6.0	6.1	6.5	6.6	6.7	7.3
Married women, spouse present	5.8	6.0	6.0	6.1	6.5	6.6	6.2	7.0	7.1	7.8	7.4	7.0	7.4	7.1	7.5
Women who maintain families	9.2	10.4	10.7	10.6	10.8	10.5	10.4	10.2	10.6	11.5	11.8	12.4	12.0	11.6	12.4
Full-time workers	6.9	7.3	7.3	7.7	8.1	8.7	8.4	8.5	8.9	9.2	9.2	9.4	9.5	9.6	10.1
Part-time workers	8.8	9.4	9.6	9.5	10.2	9.2	9.6	10.8	10.0	10.9	10.5	9.8	11.4	10.3	10.5
Unemployed 15 weeks and over	1.7	2.1	2.1	2.1	2.2	2.2	2.2	2.5	2.7	2.7	3.0	3.3	3.2	3.3	3.5
Labor force time lost[1]	7.9	8.5	8.5	9.1	9.5	10.1	10.0	9.8	10.4	10.4	11.1	10.2	10.7	10.7	11.7
OCCUPATION															
White-collar workers	3.7	4.0	4.1	4.1	4.2	4.5	4.2	4.6	4.8	4.9	4.8	5.0	4.9	4.8	4.8
Professional and technical	2.5	2.8	2.8	2.6	2.7	3.4	2.9	3.1	3.2	3.2	3.3	3.3	3.3	3.1	3.2
Managers and administrators, except farm	2.4	2.7	2.7	2.8	3.0	3.1	2.7	3.1	3.0	3.3	3.5	3.8	3.7	3.8	3.6
Salesworkers	4.4	4.6	5.0	4.9	5.0	4.9	4.5	4.8	5.8	5.6	5.2	5.8	5.4	5.5	5.4
Clerical workers	5.3	5.7	5.8	6.0	6.0	6.2	6.3	6.7	6.9	7.2	6.8	6.9	6.9	6.7	6.7
Blue-collar workers	10.0	10.3	10.2	10.9	11.8	12.7	12.5	12.5	12.9	13.7	13.5	13.9	14.4	14.2	15.6
Craft and kindred workers	6.6	7.5	7.7	8.3	8.5	9.3	9.0	8.4	9.1	9.6	9.4	10.3	10.9	10.6	11.4
Operatives, except transport	12.2	12.2	11.6	12.8	14.1	15.5	15.4	15.4	15.9	16.9	16.5	16.7	17.4	17.5	20.2
Transport equipment operatives	8.8	8.7	8.7	8.0	10.4	10.5	10.2	10.3	10.4	10.7	11.8	13.0	11.6	12.5	11.6
Nonfarm laborers	14.6	14.7	14.6	15.6	16.0	16.9	16.9	17.9	17.9	19.2	18.3	17.9	18.6	17.4	19.2
Service workers	7.9	8.9	9.0	9.3	9.7	9.6	9.2	9.8	10.2	11.1	11.3	9.9	10.5	10.6	10.7
Farmworkers	4.6	5.3	4.0	6.2	6.2	6.4	6.9	4.9	5.4	5.8	8.3	7.2	6.1	6.9	5.1
INDUSTRY															
Nonagricultural private wage and salary workers[2]	7.4	7.7	7.7	8.1	8.4	9.1	8.8	9.0	9.5	9.9	9.9	10.0	10.2	10.1	10.7
Construction	14.1	15.6	16.3	17.6	17.8	18.1	18.7	18.1	17.9	19.4	18.8	19.2	20.3	20.3	22.6
Manufacturing	8.5	8.3	7.9	8.6	9.4	11.0	10.4	10.6	10.8	11.3	11.6	12.3	12.0	12.1	13.8
Durable goods	8.9	8.2	7.7	8.6	9.5	11.8	11.0	11.3	10.8	11.9	12.2	13.2	12.7	12.9	14.9
Nondurable goods	7.9	8.4	8.3	8.6	9.3	9.6	9.5	9.5	10.8	10.5	10.7	11.0	11.0	10.8	12.3
Transportation and public utilities	4.9	5.2	4.2	4.8	5.5	6.0	6.4	5.9	5.6	7.0	6.5	6.8	6.1	7.0	6.9
Wholesale and retail trade	7.4	8.1	8.5	8.4	8.6	8.9	8.7	9.0	10.3	10.1	10.6	9.7	10.5	9.8	9.8
Finance and service industries	5.3	5.9	6.0	6.2	6.1	6.4	5.9	6.5	6.9	7.0	6.9	6.8	7.0	7.0	6.8
Government workers	4.1	4.7	4.7	4.7	5.2	5.0	4.8	5.2	4.9	5.3	5.0	4.6	4.6	4.6	4.9
Agricultural wage and salary workers	11.0	12.1	11.0	13.4	14.1	14.8	16.2	12.8	14.0	14.6	18.2	16.3	13.8	14.3	12.5

[1] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

[2] Includes mining, not shown separately.

5. Unemployment rates, by sex and age, seasonally adjusted

Sex and age	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Total, 16 years and over	7.1	7.6	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8	9.8	10.1
16 to 19 years	17.8	19.6	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1	24.0	23.7
16 to 17 years	20.0	21.4	21.4	21.5	22.6	21.9	21.9	22.7	22.7	24.6	25.3	23.7	26.1	25.8	26.9
18 to 19 years	16.2	18.4	18.5	20.0	20.5	21.2	21.3	22.0	21.3	21.9	21.3	21.9	22.8	22.6	21.6
20 to 24 years	11.5	12.3	12.3	12.7	13.0	13.5	13.5	14.1	14.2	14.7	14.3	14.4	14.5	15.2	15.3
25 years and over	5.1	5.4	5.4	5.7	6.0	6.5	6.3	6.4	6.8	7.0	7.1	7.4	7.5	7.3	7.9
25 to 54 years	5.5	5.8	5.8	6.2	6.5	6.9	6.7	6.8	7.3	7.4	7.7	7.7	7.9	7.8	8.6
55 years and over	3.3	3.6	3.8	3.8	3.8	4.1	4.2	4.3	4.6	5.0	4.8	5.4	5.2	5.1	5.1
Men, 16 years and over	6.9	7.4	7.3	7.7	8.3	9.0	8.6	8.7	9.0	9.4	9.6	9.7	9.9	10.0	10.7
16 to 19 years	18.3	20.1	19.9	20.1	21.8	22.3	22.1	22.5	23.5	24.4	24.0	24.2	25.1	25.1	25.3
16 to 17 years	20.4	22.0	21.5	21.1	22.7	22.6	23.0	23.0	24.3	24.7	26.3	25.8	28.1	27.3	29.6
18 to 19 years	16.7	18.8	18.7	19.3	21.0	22.2	21.4	22.1	22.9	24.3	21.9	24.0	23.4	23.4	22.6
20 to 24 years	12.5	13.2	13.1	13.8	14.4	14.8	14.9	15.4	15.7	16.0	15.5	15.8	15.9	16.6	17.4
25 years and over	4.8	5.1	5.0	5.5	5.8	6.5	6.3	6.3	6.6	6.9	6.9	7.5	7.5	7.5	8.2
25 to 54 years	5.1	5.5	5.5	5.9	6.3	6.9	6.7	6.7	7.1	7.2	7.5	8.0	8.1	8.0	9.1
55 years and over	3.3	3.5	3.5	3.7	3.7	4.4	4.3	4.2	4.8	5.1	4.7	5.0	4.8	5.4	5.4
Women, 16 years and over	7.4	7.9	8.0	8.2	8.4	8.5	8.4	8.9	9.0	9.4	9.5	9.1	9.6	9.5	9.5
16 to 19 years	17.2	19.0	19.5	20.7	20.9	20.5	21.2	22.1	20.1	21.3	22.1	20.2	23.1	22.8	21.9
16 to 17 years	19.6	20.7	21.2	21.9	22.5	21.1	20.6	22.5	20.8	24.5	24.1	21.4	24.1	24.2	23.9
18 to 19 years	15.6	17.9	18.3	20.6	19.9	20.0	21.1	21.9	19.6	19.4	20.6	19.7	22.2	21.7	20.6
20 to 24 years	10.4	11.2	11.4	11.5	11.3	12.0	11.9	12.7	12.6	13.3	12.9	12.9	12.9	13.7	12.9
25 years and over	5.5	5.9	6.0	6.1	6.4	6.4	6.3	6.5	7.0	7.2	7.4	7.2	7.4	7.0	7.4
25 to 54 years	6.0	6.3	6.3	6.5	6.8	6.9	6.7	7.0	7.6	7.7	8.0	7.4	7.7	7.5	8.0
55 years and over	3.2	3.8	4.3	4.0	3.8	3.7	4.1	4.3	4.3	4.8	5.0	6.0	6.0	4.6	4.7

6. Unemployed persons, by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
NUMBER OF UNEMPLOYED															
Lost last job	3,947	4,267	4,426	4,573	4,905	5,343	5,205	5,153	5,622	5,906	5,901	6,302	6,177	6,347	7,073
On layoff	1,488	1,430	1,452	1,631	1,826	2,042	1,860	1,740	1,828	1,946	1,969	2,071	2,079	2,180	2,669
Other job losers	2,459	2,837	2,974	2,942	3,079	3,301	3,345	3,413	3,794	3,959	3,932	4,231	4,098	4,167	4,404
Left last job	891	923	921	976	916	923	835	964	885	937	874	813	813	806	767
Reentered labor force	1,927	2,102	2,058	2,178	2,339	2,244	2,079	2,277	2,249	2,365	2,438	2,372	2,528	2,440	2,415
Seeking first job	872	981	977	1,002	996	1,021	1,055	1,100	1,044	1,081	1,154	1,088	1,249	1,328	1,326
PERCENT DISTRIBUTION															
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	51.7	51.6	52.8	52.4	53.6	56.1	56.7	54.3	57.4	57.4	56.9	59.6	57.4	58.1	61.1
On layoff	19.5	17.3	17.3	18.7	19.9	21.4	20.3	18.3	18.7	18.9	19.0	19.6	19.3	20.0	23.0
Other job losers	32.1	34.3	35.5	33.7	33.6	34.6	36.5	35.9	38.7	38.5	37.9	40.0	38.1	38.2	38.0
Job leavers	11.7	11.2	11.0	11.2	10.0	9.7	9.1	10.2	9.0	9.1	8.4	7.7	7.5	7.4	6.6
Reentrants	25.2	25.4	24.6	25.0	25.5	23.5	22.7	24.0	22.9	23.0	23.5	22.4	23.5	22.3	20.8
New entrants	11.4	11.9	11.7	11.5	10.9	10.7	11.5	11.6	10.7	10.5	11.1	10.3	11.6	12.2	11.4
PERCENT OF CIVILIAN LABOR FORCE															
Job losers	3.7	3.9	4.1	4.2	4.5	4.9	4.8	4.7	5.1	5.4	5.3	5.7	5.6	5.7	6.4
Job leavers	.8	.8	.8	.9	.8	.8	.8	.9	.8	.9	.8	.7	.7	.7	.7
Reentrants	1.8	1.9	1.9	2.0	2.1	2.1	1.9	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.2
New entrants	.8	.9	.9	.9	.9	.9	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.2	1.2

7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Less than 5 weeks	3,295	3,449	3,529	3,707	3,852	4,037	3,852	3,789	3,825	3,958	3,874	3,543	3,990	3,923	4,038
5 to 14 weeks	2,470	2,539	2,585	2,686	2,882	3,016	3,068	3,052	3,078	3,304	3,320	3,458	3,161	3,304	3,585
15 weeks and over	1,871	2,285	2,248	2,292	2,364	2,372	2,399	2,724	2,954	3,015	3,286	3,673	3,580	3,631	3,870
15 to 26 weeks	1,052	1,122	1,146	1,166	1,229	1,189	1,210	1,445	1,605	1,508	1,634	1,826	1,792	1,810	1,856
27 weeks and over	820	1,162	1,102	1,126	1,135	1,183	1,190	1,278	1,349	1,507	1,652	1,847	1,788	1,821	2,014
Mean duration, in weeks	11.9	13.7	13.7	13.6	13.1	12.8	13.5	14.1	13.9	14.2	14.6	16.5	15.6	16.2	16.6
Median duration, in weeks	6.5	6.9	6.9	6.8	6.9	6.7	7.2	7.3	7.6	8.5	9.0	9.8	8.3	8.2	9.5

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by 177,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

Definitions

Employed persons are all persons who received pay (including holiday and sick pay) for any part of the payroll period including the 12th of the month. Persons holding more than one job (about 5 percent of all persons in the labor force) are counted in each establishment which reports them.

Production workers in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 11–15 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities; in wholesale and retail trade; in finance, insurance, and real estate; and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to reflect the effects of changes in consumer prices. The deflator for this series is derived from the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated to underlying wage-rate developments: fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries.

Hours represent the average weekly hours of production or nonsupervisory workers for which pay was received and are different from standard or scheduled hours. **Overtime hours** represent the portion of gross average weekly hours which were in excess of regular hours and for which overtime premiums were paid.

Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of May 1982 data, published in the July 1982 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Complete comparable historical unadjusted and seasonally adjusted data are published in a Supplement to Employment and Earnings (unadjusted data from April 1977 through February 1982 and seasonally adjusted data from January 1974 through February 1982) and in *Employment and Earnings, United States, 1909–78*, BLS Bulletin 1312–11 (for prior periods).

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9–20. See also *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976).

8. Employment by industry, selected years, 1950–81

[Nonagricultural payroll data, in thousands]

Year	Total	Private sector	Goods-producing				Service-producing									
									Wholesale and retail trade					Government		
			Total	Mining	Construction	Manufacturing	Total	Transportation and public utilities	Total	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services	Total	Federal	State and local
1950	45,197	39,170	18,506	901	2,364	15,241	26,691	4,034	9,386	2,635	6,751	1,888	5,357	6,026	1,928	4,098
1955	50,641	43,727	20,513	792	2,839	16,882	30,128	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1960[1]	54,189	45,836	20,434	712	2,926	16,796	33,755	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1964	58,283	48,686	21,005	634	3,097	17,274	37,278	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	50,689	21,926	632	3,232	18,062	38,839	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	53,116	23,158	627	3,317	19,214	40,743	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	54,413	23,308	613	3,248	19,447	42,495	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	56,058	23,737	606	3,350	19,781	44,160	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	58,189	24,361	619	3,575	20,167	46,023	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	58,325	23,578	623	3,588	19,367	47,302	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	58,331	22,935	609	3,704	18,623	48,278	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	60,341	23,668	628	3,889	19,151	50,007	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	63,058	24,893	642	4,097	20,154	51,897	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	64,095	24,794	697	4,020	20,077	53,471	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	62,259	22,600	752	3,525	18,323	54,345	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	64,511	23,352	779	3,576	18,997	56,030	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	67,344	24,346	813	3,851	19,682	58,125	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	71,026	25,585	851	4,229	20,505	61,113	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	73,876	26,461	958	4,463	21,040	63,363	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,147
1980	90,406	74,166	25,658	1,027	4,346	20,285	64,748	5,146	20,310	5,275	15,035	5,160	17,890	16,241	2,866	13,375
1981	91,105	75,081	25,481	1,132	4,176	20,173	65,625	5,157	20,551	5,359	15,192	5,301	18,592	16,024	2,772	13,253

[1] Data include Alaska and Hawaii beginning in 1959.

9. Employment by State

[Nonagricultural payroll data, in thousands]

State	August 1981	July 1982	August 1982^{p}	State	August 1981	July 1982	August 1982^{p}
Alabama	1,347.3	1,322.9	1,319.3	Montana	290.2	278.6	278.3
Alaska	189.7	199.4	(1)	Nebraska	623.6	608.2	604.4
Arizona	1,019.0	1,003.5	1,003.4	Nevada	423.9	416.8	417.2
Arkansas	738.4	715.8	719.3	New Hampshire	405.0	397.4	400.3
California	10,032.9	9,940.4	9,901.5	New Jersey	3,127.1	3,097.8	3,098.4
Colorado	1,285.3	1,277.9	1,281.2	New Mexico	477.9	472.0	474.8
Connecticut	1,426.4	1,406.4	1,395.8	New York	7,331.2	7,272.5	7,264.4
Delaware	261.2	262.2	259.1	North Carolina	2,355.1	2,288.1	2,296.8
District of Columbia	622.0	625.7	624.4	North Dakota	250.8	251.5	251.4
Florida	3,660.0	3,720.7	3,698.5	Ohio	4,315.1	4,194.7	4,181.4
Georgia	2,180.2	2,149.1	2,149.8	Oklahoma	1,195.1	1,202.6	1,201.0
Hawaii	405.8	404.7	403.3	Oregon	1,018.3	964.1	964.6
Idaho	325.4	312.9	311.8	Pennsylvania	4,749.1	4,487.5	4,482.4
Illinois	4,769.2	4,626.6	4,615.9	Rhode Island	403.5	384.7	392.6
Indiana	2,115.7	2,006.2	2,005.3	South Carolina	1,190.1	1,160.1	1,164.1
Iowa	1,076.2	1,029.6	1,026.4	South Dakota	239.0	231.9	231.7
Kansas	939.9	912.4	910.2	Tennessee	1,750.6	1,704.5	1,703.6
Kentucky	1,190.1	1,127.1	1,128.1	Texas	6,171.1	6,248.5	6,226.1
Louisiana	1,636.7	1,613.0	1,608.6	Utah	558.6	557.8	558.8
Maine	432.6	413.6	422.1	Vermont	202.8	201.0	201.8
Maryland	1,697.4	1,684.9	1,662.3	Virginia	2,169.6	2,167.2	2,164.0
Massachusetts	2,654.0	2,592.8	2,603.2	Washington	1,589.6	1,551.2	1,546.9
Michigan	3,331.9	3,197.0	3,190.6	West Virginia	631.9	602.8	603.4
Minnesota	1,769.3	1,706.3	1,709.3	Wisconsin	1,936.3	1,888.7	1,872.4
Mississippi	813.0	789.6	782.7	Wyoming	223.6	215.6	213.9
Missouri	1,976.3	1,953.0	1,955.9				
				Virgin Islands	37.7	35.9	36.0

[1] Not available.

p = preliminary.

10. Employment by industry division and major manufacturing group, seasonally adjusted

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.[p]	Sept.[p]
TOTAL	90,406	91,105	91,363	91,224	90,996	90,642	90,460	90,459	90,304	90,083	90,166	89,839	89,535	89,268	89,038
PRIVATE SECTOR	74,166	75,081	75,459	75,307	75,088	74,725	74,596	74,609	74,445	74,231	74,313	74,007	73,900	73,610	73,478
GOODS-PRODUCING	25,658	25,481	25,583	25,393	25,176	24,908	24,684	24,631	24,450	24,289	24,255	23,994	23,840	23,639	23,546
Mining	1,027	1,132	1,192	1,195	1,202	1,206	1,201	1,203	1,197	1,182	1,152	1,124	1,100	1,082	1,080
Construction	4,346	4,176	4,124	4,101	4,071	4,026	3,966	3,974	3,934	3,938	3,988	3,940	3,927	3,895	3,890
Manufacturing	20,285	20,173	20,267	20,097	19,903	19,676	19,517	19,454	19,319	19,169	19,115	18,930	18,813	18,662	18,576
Production workers	14,214	14,021	14,087	13,915	13,717	13,488	13,431	13,290	13,179	13,042	13,008	12,852	12,760	12,637	12,580
Durable goods	12,187	12,117	12,184	12,059	11,901	11,724	11,622	11,575	11,490	11,375	11,332	11,203	11,133	10,984	10,904
Production workers	8,442	8,301	8,345	8,218	8,061	7,885	7,793	7,759	7,685	7,576	7,553	7,443	7,388	7,263	7,205
Lumber and wood products	690.5	668.7	661	643	628	615	607	611	607	615	617	615	614	612	615
Furniture and fixtures	465.8	467.3	473	469	462	457	452	449	446	443	443	442	439	443	441
Stone, clay, and glass products	662.1	638.2	638	629	620	610	596	596	590	584	586	580	579	574	573
Primary metal industries	1,142.2	1,121.1	1,125	1,104	1,082	1,053	1,038	1,024	1,007	976	945	926	906	888	880
Fabricated metal products	1,613.1	1,592.4	1,604	1,577	1553	1,529	1,515	1,505	1,496	1,481	1,472	1,452	1,446	1,427	1,416
Machinery, except electrical	2,494.0	2,507.0	2,539	2,532	2,511	2,486	2,459	2,446	2,419	2,389	2,377	2,322	2,274	2,232	2,212
Electric and electronic equipment	2,090.6	2,092.2	2,113	2,101	2,077	2,049	2,055	2,048	2,038	2,034	2,034	2,026	2,018	2,004	1,997
Transportation equipment	1,899.7	1,892.6	1,884	1,861	1,830	1,791	1,777	1,778	1,774	1,748	1,755	1,745	1,759	1,718	1,689
Instruments and related products	711.3	726.8	734	731	727	725	720	718	716	713	713	708	708	702	700
Miscellaneous manufacturing	418.0	410.7	413	412	411	409	403	400	397	392	390	387	390	384	381
Nondurable goods	8,098	8,056	8,083	8,038	8,002	7,952	7,895	7,879	7,829	7,794	7,783	7,727	7,680	7,678	7,672
Production workers	5,772	5,721	5,742	5,697	5,656	5,603	5,548	5,531	5,494	5,466	5,455	5,409	5,372	5,374	5,375
Food and kindred products	1,708.0	1,674.3	1,658	1,662	1,664	1,661	1,657	1,663	1,658	1,643	1,652	1,637	1,643	1,626	1,622
Tobacco manufactures	68.9	69.8	69	69	69	68	69	68	68	67	67	67	65	65	63
Textile mill products	847.7	822.5	827	814	804	794	780	777	760	773	759	741	741	737	736
Apparel and other textile products	1,263.5	1,244.0	1,253	1,243	1,235	1,222	1,201	1,201	1,186	1,165	1,165	1,161	1,126	1,146	1,143
Paper and allied products	692.8	687.8	695	685	681	677	674	670	668	664	661	658	657	654	659
Printing and publishing	1,252.1	1,265.8	1,274	1,278	1,276	1,276	1,275	1,276	1,278	1,274	1,274	1,269	1,267	1,270	1,269
Chemicals and allied products	1,107.4	1,107.3	1,110	1,107	1,103	1,100	1,095	1,093	1,088	1,082	1,079	1,073	1,068	1,070	1,068
Petroleum and coal products	197.9	215.6	216	215	215	214	210	208	207	206	207	205	205	205	211
Rubber and miscellaneous plastics products	726.8	736.1	746	734	725	716	712	708	703	706	708	704	700	697	693
Leather and leather products	232.9	233.0	235	233	230	224	222	215	213	214	211	212	208	208	208
SERVICE-PRODUCING	64,748	65,625	65,780	65,831	65,820	65,734	65,776	65,828	65,854	65,794	65,911	65,845	65,695	65,629	65,492
Transportation and public utilities	5,146	5,157	5,181	5,162	5,150	5,128	5,125	5,115	5,100	5,094	5,101	5,078	5,044	5,024	5,023
Wholesale and retail trade	20,310	20,551	20,660	20,654	20,623	20,524	20,630	20,670	20,655	20,584	20,652	20,595	20,615	20,544	20,488
Wholesale trade	5,275	5,359	5,383	5,380	5,375	5,357	5,346	5,343	5,336	5,323	5,331	5,307	5,299	5,288	5,277
Retail trade	15,035	15,192	15,277	15,274	15,248	15,167	15,284	15,327	15,319	15,261	15,321	15,288	15,316	15,256	15,211
Finance, insurance, and real estate	5,160	5,301	5,328	5,325	5,324	5,331	5,326	5,326	5,336	5,335	5,342	5,352	5,359	5,361	5,367
Services	17,890	18,592	18,707	18,773	18,815	18,834	18,831	18,867	18,904	18,929	18,963	18,988	19,042	19,042	19,054
Government	16,241	16,024	15,904	15,917	15,908	15,917	15,864	15,850	15,859	15,852	15,853	15,832	15,635	15,658	15,560
Federal	2,866	2,772	2,764	2,757	2,749	2,756	2,741	2,737	2,736	2,730	2,728	2,739	2,737	2,740	2,734
State and local	13,375	13,253	13,140	13,160	13,159	13,161	13,123	13,113	13,123	13,122	13,125	13,093	12,898	12,918	12,826

p=preliminary.

11. Hours and earnings, by industry division, selected years, 1950-81

[Gross averages, production or nonsupervisory workers on nonagricultural payrolls]

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Private sector			Mining			Construction			Manufacturing		
1950	$53.13	39.8	$1.335	$67.16	37.9	$1.772	$69.68	37.4	$1.863	$58.32	40.5	$1.440
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1960[1]	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	268.94	40.2	6.70
1980	235.10	35.3	6.66	397.06	43.3	9.17	367.78	37.0	9.94	288.62	39.7	7.27
1981	255.20	35.2	7.25	439.19	43.7	10.05	398.52	36.9	10.80	318.00	39.8	7.99
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950	....	....	....	$44.55	40.5	$1.100	$50.52	37.7	$1.340	....	....	....
1955	....	....	....	55.16	39.4	1.40	63.92	37.6	1.70	....	....	....
1960[1]	....	....	....	66.01	38.6	1.71	75.14	37.2	2.02	....	....	....
1964	$118.78	41.1	$2.89	74.66	37.9	1.97	85.79	37.3	2.30	$70.03	36.1	$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	351.25	39.6	8.87	176.46	32.2	5.48	209.60	36.2	5.79	190.71	32.6	5.85
1981	382.18	39.4	9.70	190.95	32.2	5.93	229.05	36.3	6.31	208.97	32.6	6.41

[1] Data include Alaska and Hawaii beginning in 1959.

12. Weekly hours, by industry division and major manufacturing group, seasonally adjusted

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.ᵖ	Sept.ᵖ
PRIVATE SECTOR	35.3	35.2	35.0	35.1	35.1	35.0	34.4	35.0	34.9	34.9	35.0	34.9	34.9	34.8	34.8
MANUFACTURING	39.7	39.8	39.4	39.5	39.3	39.1	37.6	39.4	39.0	39.0	39.1	39.2	39.2	39.0	38.6
Overtime hours	2.8	2.8	2.7	2.7	2.5	2.4	2.3	2.4	2.3	2.4	2.3	2.4	2.4	2.4	2.3
Durable goods	40.1	40.2	39.7	40.0	39.7	39.5	38.2	39.8	39.5	39.5	39.6	39.7	39.7	39.4	38.7
Overtime hours	2.8	2.8	2.7	2.8	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.1
Lumber and wood products	38.5	38.7	37.6	37.8	37.7	37.7	35.0	37.9	37.6	37.6	38.5	38.7	38.6	38.3	38.1
Furniture and fixtures	38.1	38.4	37.4	38.0	37.6	37.9	33.6	37.7	37.3	37.4	37.5	37.8	37.6	38.0	37.2
Stone, clay, and glass products	40.8	40.6	40.3	40.1	40.1	39.7	38.6	40.1	40.0	40.0	40.2	40.4	40.6	40.3	40.3
Primary metal industries	40.1	40.5	40.6	40.0	39.6	39.2	38.3	39.4	38.8	38.5	38.5	38.9	38.9	38.9	37.7
Fabricated metal products	40.4	40.3	39.6	40.0	39.7	39.5	38.1	39.7	39.5	39.4	39.5	39.4	39.5	39.1	38.5
Machinery, except electrical	41.0	40.9	40.3	40.8	40.7	40.4	39.3	40.7	40.2	40.1	39.8	39.6	39.8	39.4	38.8
Electric and electronic equipment	39.8	39.9	39.7	39.8	39.4	39.5	38.3	39.8	39.4	39.3	39.4	39.5	39.8	39.3	38.7
Transportation equipment	40.6	40	40.1	40.6	40.4	39.7	38.0	40.5	40.4	41.1	41.1	41.6	41.0	40.5	39.5
Instruments and related products	40.5	40.4	40.4	40.3	40.2	39.9	39.0	39.9	39.9	39.9	40.2	40.2	40.1	40.1	39.5
Miscellaneous manufacturing	38.7	38.8	38.4	38.9	38.0	38.5	37.3	38.6	38.6	38.5	38.7	38.6	38.7	38.6	38.1
Nondurable goods	39.0	39.1	38.9	38.9	38.7	38.6	36.8	38.9	38.5	38.4	38.5	38.6	38.6	38.5	38.5
Overtime hours	2.8	2.8	2.8	2.8	2.7	2.6	2.5	2.6	2.5	2.6	2.5	2.5	2.6	2.6	2.6
Food and kindred products	39.7	39.7	39.3	39.5	39.5	39.8	39.1	40.2	39.5	39.4	39.4	39.5	39.5	39.2	39.4
Textile mill products	40.1	39.6	38.8	39.0	38.7	37.8	32.3	38.3	37.6	37.7	37.9	37.8	37.7	38.2	38.1
Apparel and other textile products	35.4	35.7	35.2	35.5	35.5	35.1	31.4	35.5	35.0	34.7	34.8	35.1	35.2	34.9	35.0
Paper and allied products	42.2	42.5	43.0	42.4	42.0	41.8	41.3	42.3	41.8	42.1	41.8	42.0	41.9	41.8	41.5
Printing and publishing	37.1	37.3	37.1	37.1	37.1	37.1	36.9	37.4	37.1	37.1	36.8	37.1	37.0	36.8	37.1
Chemicals and allied products	41.5	41.6	42.2	41.5	41.2	41.3	41.0	41.2	40.7	40.7	41.0	41.0	40.9	40.8	41.3
Petroleum and coal products	41.8	43.2	43.1	42.2	42.5	42.7	44.3	43.5	43.5	44.0	44.1	44.1	43.3	44.2	43.0
Rubber and miscellaneous plastics products	40.0	40.3	39.7	39.9	39.6	39.4	37.9	40.0	39.6	39.8	39.9	40.1	40.2	39.7	39.5
Leather and leather products	36.7	36.8	36.2	36.7	36.5	36.1	34.1	35.6	35.8	35.6	35.6	35.7	36.1	36.1	35.7
WHOLESALE AND RETAIL TRADE	32.2	32.2	[4]32.1	32.0	32.1	32.0	31.7	32.0	31.9	31.8	32.0	31.9	31.9	31.9	32.1
WHOLESALE TRADE	38.5	38.6	38.5	38.4	38.5	38.4	38.1	38.5	38.4	38.3	38.5	38.6	38.5	38.5	38.3
RETAIL TRADE	30.2	30.1	30.1	29.9	30.0	29.9	29.7	29.9	29.8	29.8	30.0	29.8	29.9	29.9	30.2
SERVICES	32.6	32.6	32.5	32.6	32.6	32.6	32.5	32.6	32.6	32.7	32.7	32.7	32.8	32.7	32.8

NOTE: The industry divisions of mining; construction; tobacco manufactures (a major manufacturing group, nondurable goods); transportation and public utilities; and finance, insurance, and real estate are no longer shown. This is because the seasonal component in these is small relative to the trend-cycle, or irregular components, or both, and consequently cannot be precisely separated.

p=preliminary.

13. Hourly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.p	Sept.p
PRIVATE SECTOR	$6.66	$7.25	$7.40	$7.42	$7.47	$7.45	$7.55	$7.54	$7.55	$7.58	$7.63	$7.64	$7.67	$7.69	$7.76
Seasonally adjusted	(1)	(1)	7.37	7.40	7.45	7.46	7.52	7.53	7.54	7.59	7.65	7.67	7.71	7.73	7.72
MINING	9.17	10.05	10.27	10.25	10.39	10.41	10.65	10.62	10.62	10.65	10.66	10.82	10.91	10.88	11.03
CONSTRUCTION	9.94	10.80	11.07	11.05	11.18	11.26	11.58	11.32	11.33	11.32	11.46	11.41	11.53	11.61	11.72
MANUFACTURING	7.27	7.99	8.16	8.16	8.20	8.27	8.42	8.34	8.37	8.42	8.45	8.50	8.55	8.51	8.59
Durable goods	7.75	8.53	8.70	8.73	8.77	8.83	8.92	8.89	8.91	8.94	9.01	9.06	9.11	9.10	9.16
Lumber and wood products	6.55	7.00	7.16	7.10	7.16	7.16	7.38	7.27	7.28	7.24	7.41	7.59	7.64	7.62	7.67
Furniture and fixtures	5.49	5.91	6.01	6.06	6.05	6.12	6.28	6.19	6.21	6.21	6.23	6.30	6.34	6.39	6.38
Stone, clay, and glass products	7.50	8.27	8.53	8.50	8.54	8.56	8.70	8.62	8.65	8.72	8.80	8.86	8.93	8.92	9.04
Primary metal industries	9.77	10.81	11.22	10.97	11.10	11.08	11.23	11.20	11.15	11.24	11.23	11.31	11.37	11.51	11.60
Fabricated metal products	7.45	8.20	8.33	8.39	8.42	8.53	8.55	8.57	8.64	8.69	8.79	8.83	8.85	8.86	8.90
Machinery, except electrical	8.00	8.81	8.96	9.04	9.08	9.18	9.19	9.20	9.18	9.24	9.26	9.27	9.30	9.33	9.38
Electric and electronic equipment	6.94	7.62	7.75	7.80	7.83	7.90	7.98	7.96	8.01	8.03	8.05	8.09	8.18	8.24	8.32
Transportation equipment	9.35	10.39	10.49	10.74	10.74	10.76	10.79	10.82	10.89	10.89	11.09	11.21	11.25	11.19	11.24
Instruments and related products	6.80	7.43	7.59	7.60	7.68	7.81	7.93	7.94	8.00	8.07	8.16	8.23	8.31	8.45	8.47
Miscellaneous manufacturing	5.46	5.96	6.05	6.05	6.11	6.19	6.27	6.29	6.32	6.35	6.38	6.41	6.40	6.38	6.48
Nondurable goods	6.55	7.18	7.36	7.33	7.38	7.44	7.67	7.54	7.57	7.65	7.66	7.70	7.77	7.74	7.83
Food and kindred products	6.85	7.43	7.56	7.51	7.61	7.67	7.82	7.74	7.79	7.90	7.92	7.90	7.88	7.87	7.89
Tobacco manufactures	7.74	8.88	8.76	8.67	9.04	8.96	9.21	9.56	9.72	10.05	9.93	10.35	10.42	9.42	9.39
Textile mill products	5.07	5.52	5.69	5.72	5.73	5.72	5.76	5.76	5.76	5.79	5.79	5.79	5.81	5.82	5.86
Apparel and other textile products	4.56	4.96	5.04	5.05	5.04	5.04	5.18	5.13	5.15	5.18	5.16	5.18	5.17	5.18	5.20
Paper and allied products	7.84	8.60	8.95	8.82	8.89	8.96	9.06	8.99	9.03	9.11	9.14	9.29	9.41	9.44	9.52
Printing and publishing	7.53	8.18	8.37	8.40	8.42	8.48	8.58	8.56	8.59	8.58	8.61	8.66	8.74	8.79	8.87
Chemicals and allied products	8.30	9.12	9.38	9.37	9.42	9.53	9.68	9.68	9.71	9.81	9.83	9.95	10.02	10.01	10.20
Petroleum and coal products	10.10	11.38	11.55	11.47	11.58	11.59	11.91	12.29	12.32	12.50	12.52	12.53	12.42	12.40	12.58
Rubber and miscellaneous plastics products	6.52	7.16	7.29	7.30	7.31	7.38	7.51	7.49	7.45	7.52	7.56	7.64	7.65	7.64	7.74
Leather and leather products	4.58	4.99	5.09	5.09	5.11	5.15	5.19	5.22	5.24	5.32	5.32	5.36	5.30	5.35	5.43
TRANSPORTATION AND PUBLIC UTILITIES	8.87	9.70	9.95	9.94	10.05	10.06	10.10	10.13	10.07	10.14	10.17	10.20	10.29	10.41	10.48
WHOLESALE AND RETAIL TRADE	5.48	5.93	6.04	6.01	6.04	6.02	6.17	6.16	6.16	6.18	6.20	6.20	6.21	6.22	6.24
WHOLESALE TRADE	6.96	7.57	7.70	7.73	7.79	7.81	7.94	7.94	7.93	7.97	8.03	8.01	8.07	8.10	8.12
RETAIL TRADE	4.88	5.25	5.37	5.29	5.32	5.31	5.43	5.42	5.43	5.44	5.47	5.47	5.48	5.48	5.50
FINANCE, INSURANCE, AND REAL ESTATE	5.79	6.31	6.39	6.43	6.52	6.47	6.56	6.62	6.59	6.64	6.77	6.71	6.78	6.86	6.90
SERVICES	5.85	6.41	6.52	6.58	6.67	6.66	6.79	6.79	6.77	6.81	6.85	6.84	6.87	6.89	6.98

[1] Not available.

p=preliminary.

14. Hourly Earnings Index, for production workers on private nonagricultural payrolls, by industry

[1977=100]

Industry	Not seasonally adjusted					Seasonally adjusted						
	Sept. 1981	July 1982	Aug. 1982p	Sept. 1982p	Percent change from: Sept. 1981 to Sept. 1982	Sept. 1981	May 1982	June 1982	July 1982	Aug. 1982p	Sept. 1982p	Percent change from: Aug. 1982 to Sept. 1982
PRIVATE SECTOR (in current dollars)	141.7	148.6	149.2	150.2	6.0	141.4	147.7	148.1	148.9	149.8	149.9	0.1
Mining	151.7	161.3	161.0	162.9	7.4	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Construction	135.5	140.8	141.6	142.9	5.5	133.5	139.9	139.7	140.6	140.7	140.8	.0
Manufacturing	144.7	153.3	153.6	154.6	6.8	144.7	151.8	152.5	153.3	154.2	154.6	.2
Transportation and public utilities	143.0	148.3	150.0	151.2	5.8	141.5	148.2	149.1	148.9	150.0	149.7	−.2
Wholesale and retail trade	141.0	145.5	145.8	146.3	3.8	141.0	145.1	145.2	145.7	146.4	146.3	−.1
Finance, insurance, and real estate	139.8	148.3	150.1	150.7	7.8	140.4	148.0	147.2	148.6	150.5	151.3	.5
Services	139.7	147.8	148.2	149.4	7.0	139.7	146.5	147.3	148.7	149.6	149.5	−.1
PRIVATE SECTOR (in constant dollars)	92.1	92.4	92.6	(2)	(2)	92.1	93.7	93.0	93.0	93.2	(2)	(2)

[1] This series is not seasonally adjusted because the seasonal component is small relative to the trend-cycle, irregular components, or both, and consequently cannot be separated with sufficient precision.

[2] Not available.

p = preliminary.

15. Weekly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.p	Sept.p
PRIVATE SECTOR															
Current dollars	$235.10	$255.20	$259.74	$261.18	$262.20	$262.24	$258.96	$262.39	$261.49	$262.27	$265.52	$267.40	$269.98	$270.89	$270.05
Seasonally adjusted	(1)	(1)	257.96	259.74	261.50	261.10	258.89	263.55	263.15	264.89	267.75	267.89	269.06	269.00	269.66
Constant (1977) dollars	172.74	170.13	168.88	168.49	168.71	168.30	164.70	168.31	168.37	167.80	168.16	167.33	167.90	168.03	167.83
MINING	397.06	439.19	450.85	455.13	461.32	466.37	459.89	463.03	465.16	454.75	454.12	462.10	463.98	462.40	457.75
CONSTRUCTION	367.78	398.52	398.31	419.82	414.78	417.75	385.95	409.39	419.21	415.44	429.75	427.88	439.14	438.54	432.47
MANUFACTURING															
Current dollars	288.62	318.00	322.32	323.95	325.54	329.87	312.38	328.93	327.27	325.85	329.55	334.05	332.80	331.89	333.29
Constant (1977) dollars	212.06	212.00	209.57	210.22	210.71	213.02	201.02	209.70	210.33	208.48	208.71	209.04	208.84	208.01	206.88
Durable goods	310.78	342.91	348.26	350.07	351.88	358.73	336.29	352.93	352.84	350.45	355.90	360.58	357.11	356.72	355.41
Lumber and wood products	252.18	270.90	271.36	271.22	269.58	272.80	248.71	272.63	273.73	270.05	285.29	287.53	294.80	298.42	294.53
Furniture and fixtures	209.17	226.94	228.58	233.92	230.51	238.07	204.10	231.51	233.50	230.39	231.76	238.77	233.31	244.10	239.25
Stone, clay, and glass products	306.00	335.76	346.32	344.25	345.87	343.26	325.38	337.90	344.27	347.93	355.52	361.49	362.58	362.15	367.02
Primary metal industries	391.78	437.81	457.78	435.51	440.67	438.77	431.23	443.52	434.85	434.99	430.11	439.96	437.75	441.98	439.64
Fabricated metal products	300.98	330.46	330.70	337.28	337.84	345.47	323.19	337.66	342.14	338.91	348.33	349.67	344.27	345.54	343.54
Machinery except electrical	329.00	360.33	361.98	367.93	372.29	381.89	380.25	374.44	370.87	367.75	367.62	367.09	363.63	363.87	364.89
Electric and electronic equipment	276.21	304.04	307.68	311.22	311.63	319.16	304.04	316.81	316.40	313.17	315.56	319.56	318.84	322.18	321.99
Transportation equipment	379.61	424.95	418.55	440.34	438.19	445.46	414.34	437.13	438.96	441.05	455.39	466.34	456.75	447.89	440.61
Instruments and related products	275.40	300.17	308.64	307.84	313.34	317.87	308.10	317.80	320.80	318.77	327.22	330.85	328.25	337.16	334.57
Miscellaneous manufacturing	211.30	231.25	234.14	237.77	241.35	242.03	229.48	241.54	244.58	242.57	245.63	247.43	244.48	248.27	248.83
Nondurable goods	255.45	280.74	287.78	288.60	288.56	291.85	277.05	291.04	289.93	291.47	294.14	297.98	298.15	298.54	303.02
Food and kindred products	271.95	294.97	300.89	298.65	302.88	308.87	302.63	307.28	303.81	308.52	312.05	312.05	312.05	312.44	314.81
Tobacco manufactures	294.80	344.54	352.15	341.60	360.75	341.38	332.48	366.15	362.58	367.83	369.40	367.44	363.46	361.73	370.91
Textile mill products	203.31	218.59	221.34	225.37	224.62	220.79	179.71	219.46	217.15	215.39	219.44	220.60	218.13	222.91	223.85
Apparel and other textile products	161.42	177.07	177.41	180.79	180.43	178.92	156.40	180.58	180.77	178.19	180.08	183.89	183.02	182.85	181.48
Paper and allied products	330.85	365.50	368.64	373.87	376.05	372.59	374.18	377.58	376.55	380.80	379.31	388.78	391.46	393.85	401.15
Printing and publishing	279.36	305.11	313.04	312.48	314.07	321.39	312.31	317.58	318.69	316.11	315.99	319.56	322.91	326.11	330.85
Chemicals and allied products	344.45	379.39	385.84	388.86	391.87	388.35	394.94	397.85	395.20	398.27	401.06	406.96	407.81	408.41	421.26
Petroleum and coal products	422.18	491.62	512.82	494.36	498.10	483.73	514.51	518.84	522.37	550.00	549.63	553.83	546.48	549.32	557.66
Rubber and miscellaneous plastics products	260.80	288.55	289.41	293.46	291.67	295.94	283.88	298.85	295.77	297.04	300.13	306.36	302.94	303.31	305.73
Leather and leather products	168.09	183.63	183.24	186.80	187.00	187.46	172.80	184.27	186.54	187.26	191.52	196.71	191.33	194.21	192.77
TRANSPORTATION AND PUBLIC UTILITIES	351.25	382.18	380.04	386.65	383.96	395.36	388.85	397.10	392.73	393.43	394.80	399.84	403.37	408.11	410.03
WHOLESALE AND RETAIL TRADE	176.46	190.95	194.49	192.32	192.69	194.45	191.89	194.06	194.66	195.81	197.78	199.02	202.45	202.77	200.93
WHOLESALE TRADE	267.96	292.20	296.45	298.38	300.69	302.25	300.13	303.31	303.72	304.45	308.35	309.19	312.31	312.66	311.00
RETAIL TRADE	147.38	158.03	162.17	157.64	158.54	160.89	157.47	159.35	159.64	161.02	163.01	164.65	168.24	168.24	166.65
FINANCE, INSURANCE, AND REAL ESTATE	209.60	229.05	229.94	232.77	236.02	234.21	237.47	239.64	239.22	240.37	245.75	242.23	245.44	249.02	247.71
SERVICES	190.71	208.97	211.25	213.85	216.78	217.12	219.32	220.88	220.03	221.33	222.63	224.35	227.40	228.06	228.25

[1] Not available.

p = preliminary.

UNEMPLOYMENT INSURANCE DATA

NATIONAL UNEMPLOYMENT INSURANCE DATA are compiled monthly by the Employment and Training Administration of the U.S. Department of Labor from monthly reports of unemployment insurance activity prepared by State agencies. Railroad unemployment insurance data are prepared by the U.S. Railroad Retirement Board.

Definitions

Data for **all programs** represent an unduplicated count of insured unemployment under State programs, Unemployment Compensation for Ex-Servicemen, and Unemployment Compensation for Federal Employees, and the Railroad Insurance Act.

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

An **application** for benefits is filed by a railroad worker at the beginning of his first period of unemployment in a benefit year; no application is required for subsequent periods in the same year. **Number of payments** are payments made in 14-day registration periods. The **average amount of benefit payment** is an average for all compensable periods, not adjusted for recovery of overpayments or settlement of underpayments. However, **total benefits** paid have been adjusted.

16. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1981					1982							
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.[p]
All programs:													
Insured unemployment	2,874	2,680	2,753	3,228	3,935	4,681	4,723	4,892	4,760	4,388	4,328	4,495	4,398
State unemployment insurance program:[1]													
Initial claims[2]	1,810	1,681	1,986	2,296	3,272	3,329	2,272	2,418	2,347	1,989	2,399	2,655	2,358
Insured unemployment (average weekly volume)	2,656	2,488	2,582	3,061	3,778	4,470	4,376	4,282	4,087	3,729	3,707	3,910	3,831
Rate of insured unemployment	3.0	2.9	3.0	3.5	4.3	5.1	5.0	4.9	4.6	4.3	4.3	4.6	4.4
Weeks of unemployment compensated	8,594	8,505	8,424	10,052	14,582	15,962	15,631	18,144	[r]16,158	[r]13,679	[r]14,848	14,855	15,015
Average weekly benefit amount for total unemployment	$105.94	$107.39	$108.82	$110.52	$112.83	$114.82	$116.95	$117.10	[r]$117.61	[r]$118.08	[r]$118.64	$117.29	$121.52
Total benefits paid	$1,004,864	$1,001,020	$967,757	$1,080,810	$1,582,546	$1,784,208	$1,781,890	$2,072,842	[r]$1,849,881	[r]$1,573,444	[r]$1,689,061	$1,679,378	$1,746,195
State unemployment insurance program:[1] (Seasonally adjusted data)													
Initial claims[2]	1,851	2,089	2,187	2,233	2,106	2,304	2,354	2,521	2,442	2,379	2,529	2,317	2,814
Insured unemployment (average weekly volume)	2,867	2,985	3,171	3,403	3,580	3,604	3,644	3,777	3,839	3,925	3,995	3,959	4,137
Rate of insured unemployment	3.3	3.4	3.6	3.9	4.1	4.1	4.2	4.3	4.5	4.5	4.6	4.5	4.7
Unemployment compensation for ex-servicemen:[3]													
Initial claims[1]	19	15	11	9	11	8	8	10	9	8	10	10	11
Insured unemployment (average weekly volume)	44	34	26	22	19	16	13	11	10	9	8	7	7
Weeks of unemployment compensated	190	153	118	91	93	66	49	48	37	31	29	25	24
Total benefits paid	$21,425	$17,144	$12,952	$10,043	$10,155	$7,098	$5,304	$5,141	[r]$4,013	$3,305	[r]$3,314	$2,821	$2,793
Unemployment compensation for Federal civilian employees:[4]													
Initial claims	17	18	20	18	17	17	12	13	13	11	14	13	12
Insured unemployment (average weekly volume)	25	29	32	36	39	40	40	38	33	29	28	29	27
Weeks of unemployment compensated	102	100	112	127	174	162	154	172	[r]146	120	123	120	118
Total benefits paid	$8,543	$10,495	$11,719	$13,491	$18,891	$18,040	$17,517	$19,677	[r]$16,806	$13,526	[r]$13,822	$13,445	$13,140
Railroad unemployment insurance:													
Applications	13	15	21	13	19	22	11	9	5	5	38	68	68
Insured unemployment (average weekly volume)	29	34	40	44	54	75	67	65	57	44	44	55	55
Number of payments	63	74	86	83	117	153	140	154	130	95	93	100	100
Average amount of benefit payment	$202.53	$207.98	$187.25	$207.06	$212.33	$213.39	$214.07	$215.71	$209.48	$200.75	$199.15	$202.54	$202.54
Total benefits paid	$7,071	15,046	15,994	$16,377	$25,292	$30,544	$28,011	$33,853	$26,262	$18,110	$18,574	$17,988	$17,988
Employment service:[5]													
New applications and renewals	....	16,502	....	....	4,081	....	....	7,439	....	....	....	10,965	10,965
Nonfarm placements	....	3,509	....	....	731	....	....	1,232	....	....	....	1,902	1,902

[1] Initial claims and State insured unemployment include data under the program for Puerto Rican sugarcane workers.

[2] Excludes transition claims under State programs.

[3] Excludes data on claims and payments made jointly with other programs.

[4] Excludes data on claims and payments made jointly with State programs.

[5] Cumulative total for fiscal year (October 1-September 30). Data computed quarterly.

NOTE: Data for Puerto Rico and the Virgin Islands included. Dashes indicate data not available.

r = revised.

p = preliminary.

PRICE DATA

PRICE DATA are gathered by the Bureau of Labor Statistics from retail and primary markets in the United States. Price indexes are given in relation to a base period (1967 = 100, unless otherwise noted).

Definitions

The **Consumer Price Index** is a monthly statistical measure of the average change in prices in a fixed market basket of goods and services. Effective with the January 1978 index, the Bureau of Labor Statistics began publishing CPI's for two groups of the population. One index, a new CPI for All Urban Consumers, covers 80 percent of the total noninstitutional population; and the other index, a revised CPI for Urban Wage Earners and Clerical Workers, covers about half the new index population. The All Urban Consumers index includes, in addition to wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctor's and dentist's fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items is kept essentially unchanged between major revisions so that only price changes will be measured. Prices are collected from over 18,000 tenants, 24,000 retail establishments, and 18,000 housing units for property taxes in 85 urban areas across the country. All taxes directly associated with the purchase and use of items are included in the index. Because the CPI's are based on the expenditures of two population groups in 1972–73, they may not accurately reflect the experience of individual families and single persons with different buying habits.

Though the CPI is often called the "Cost-of-Living Index," it measures only price change, which is just one of several important factors affecting living costs. Area indexes do not measure differences in the level of prices among cities. They only measure the average change in prices for each area since the base period.

Producer Price Indexes measure average changes in prices received in primary markets of the United States by producers of commodities in all stages of processing. The sample used for calculating these indexes contains about 2,800 commodities and about 10,000 quotations per month selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The universe includes all commodities produced or imported for sale in commercial transactions in primary markets in the United States.

Producer Price Indexes can be organized by stage of processing or by commodity. The stage of processing structure organizes products by degree of fabrication (that is, finished goods, intermediate or semifinished goods, and crude materials). The commodity structure organizes products by similarity of end-use or material composition.

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States, from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire. Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

In calculating Producer Price Indexes, price changes for the various commodities are averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1972. The detailed data are aggregated to obtain indexes for stage of processing groupings, commodity groupings, durability of product groupings, and a number of special composite groupings.

Price indexes for the output of selected SIC industries measure average price changes in commodities produced by particular industries, as defined in the *Standard Industrial Classification Manual 1972* (Washington, U.S. Office of Management and Budget, 1972). These indexes are derived from several price series, combined to match the economic activity of the specified industry and weighted by the value of shipments in the industry. They use data from comprehensive industrial censuses conducted by the U.S. Bureau of the Census and the U.S. Department of Agriculture.

Notes on the data

Beginning with the May 1978 issue of the *Review*, regional CPI's cross classified by population size, were introduced. These indexes will enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes will be published bimonthly. (See table 19.)

For further details about the new and the revised indexes and a comparison of various aspects of these indexes with the old unrevised CPI, see *Facts About the Revised Consumer Price Index*, a pamphlet in the Consumer Price Index Revision 1978 series. See also *The Consumer Price Index: Concepts and Content Over the Years*, Report 517, revised edition (Bureau of Labor Statistics, May 1978).

For interarea comparisons of living costs at three hypothetical standards of living, see the family budget data published in the *Handbook of Labor Statistics, 1977*, Bulletin 1966 (Bureau of Labor Statistics, 1977), tables 122–133. Additional data and analysis on price changes are provided in the *CPI Detailed Report* and *Producer Prices and Price Indexes*, both monthly publications of the Bureau.

As of January 1976, the Wholesale Price Index (as it was then called) incorporated a revised weighting structure reflecting 1972 values of shipments. From January 1967 through December 1975, 1963 values of shipments were used as weights.

For a discussion of the general method of computing consumer, producer, and industry price indexes, see *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976), chapters 13–15. See also John F. Early, "Improving the measurement of producer price change," *Monthly Labor Review*, April 1978, pp. 7–15. For industry prices, see also Bennett R. Moss, "Industry and Sector Price Indexes," *Monthly Labor Review*, August 1965, pp. 974–82.

17. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967–81

[1967 = 100]

Year	All items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	116.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.2	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	6.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	267.2	11.3	203.7	8.5	213.6	8.8
1981	272.3	10.2	267.8	7.7	293.2	11.4	186.6	5.2	281.3	12.3	295.1	10.4	219.0	7.5	233.3	9.2

18. Consumer Price Index for All Urban Consumers and revised CPI for Urban Wage Earners and Clerical Workers, U.S. city average—general summary and groups, subgroups, and selected items

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
All items	276.5	283.1	284.3	287.1	290.6	292.2	292.8	276.5	282.5	283.7	286.5	290.1	291.8	292.4
Food and beverages	270.1	275.6	276.5	278.1	280.2	280.8	279.9	270.6	275.9	276.8	278.4	280.5	281.2	280.2
Housing	299.7	306.7	309.4	313.8	317.5	319.2	320.1	299.6	306.2	309.2	313.7	317.5	319.3	320.5
Apparel and upkeep	187.4	191.1	191.9	191.5	190.8	189.7	191.8	187.9	190.5	191.2	190.6	189.6	188.7	190.7
Transportation	283.7	285.1	282.9	285.6	292.8	296.1	296.2	285.1	286.6	284.3	287.1	294.5	297.9	298.0
Medical care	299.3	318.8	321.7	323.8	326.4	330.0	333.3	298.6	317.4	320.2	322.3	324.8	328.1	331.3
Entertainment	222.3	232.8	233.9	234.4	235.6	236.6	237.4	219.9	229.5	230.5	231.1	232.3	233.5	233.9
Other goods and services	235.6	252.2	253.8	255.0	255.8	257.2	258.3	233.5	249.3	250.9	252.4	253.1	254.5	255.7
Commodities	256.2	258.8	258.9	261.5	265.1	266.5	266.4	256.9	259.1	259.2	261.7	265.4	266.9	266.8
Commodities less food and beverages	245.8	247.1	247.0	249.8	254.0	255.7	255.9	246.7	247.5	247.2	250.1	254.5	256.3	256.5
Nondurables less food and beverages	263.9	263.4	259.7	261.0	266.3	268.2	268.8	266.8	265.3	261.3	262.6	268.2	270.3	270.7
Durables	230.9	233.5	235.8	239.8	243.2	244.7	244.6	229.9	232.4	234.8	238.9	242.3	243.9	244.0
Services	312.2	325.5	328.4	331.8	334.9	337.0	338.9	312.7	325.8	329.1	332.4	335.7	337.9	340.0
Rent, residential	210.3	219.6	220.1	221.8	222.6	224.8	226.0	209.9	219.1	219.6	221.3	222.1	224.3	225.5
Household services less rent	379.9	392.5	397.3	403.0	407.7	409.4	411.7	384.2	396.6	402.3	408.2	413.3	415.3	418.1
Transportation services	275.7	288.8	290.3	291.3	294.7	297.2	297.8	274.3	287.9	289.2	290.0	293.2	295.7	296.5
Medical care services	323.4	345.1	348.0	350.2	353.0	357.3	361.0	322.1	343.0	345.8	348.0	350.7	354.7	358.3
Other services	239.1	254.0	255.3	255.9	257.0	258.0	259.7	238.3	252.4	253.8	254.4	255.5	256.6	258.4
Special indexes:														
All items less food	274.9	281.7	282.9	286.0	289.7	291.5	292.5	275.2	281.3	282.5	285.6	289.4	291.4	292.4
All items less mortgage interest costs	260.9	267.2	267.9	270.3	273.6	275.1	275.6	261.5	267.3	267.9	270.3	273.7	275.3	275.8
Commodities less food	243.8	245.2	245.0	247.8	251.9	253.5	253.8	244.7	245.6	245.3	248.1	252.4	254.1	254.4
Nondurables less food	258.4	258.4	255.0	256.2	261.2	263.0	263.6	261.2	260.2	256.6	257.8	263.0	265.0	265.4
Nondurables less food and apparel	298.0	296.6	291.4	293.4	301.0	304.3	304.2	300.0	297.8	292.3	294.4	302.4	305.8	305.5
Nondurables	268.1	270.7	269.3	270.7	274.4	275.7	275.5	269.7	271.6	270.1	271.5	275.4	276.8	276.5
Services less rent	331.7	345.7	349.1	352.8	356.5	358.5	360.5	332.6	346.4	350.2	353.8	357.7	359.9	362.2
Services less medical care	308.8	321.1	324.0	327.5	330.7	332.5	334.1	309.4	321.6	324.9	328.3	331.7	333.6	335.6
Domestically produced farm foods	260.6	263.8	264.5	267.1	270.3	270.7	268.4	259.9	262.7	263.5	266.0	269.2	269.7	267.4
Selected beef cuts	276.7	272.0	275.1	281.6	289.1	287.4	280.8	277.2	273.3	276.4	283.1	290.6	288.8	281.9
Energy	416.1	406.1	395.7	402.1	418.6	424.5	424.5	418.9	407.9	396.9	403.1	420.4	426.5	426.1
All items less energy	265.6	273.6	275.7	278.3	280.7	282.0	282.7	264.7	272.3	274.5	277.0	279.4	280.8	281.5
All items less food and energy	261.3	269.8	272.2	274.9	277.3	278.7	279.8	260.3	268.3	270.9	273.6	276.0	277.6	278.7
Commodities less food and energy	220.9	225.3	227.2	229.9	232.1	233.1	233.6	220.2	224.5	226.4	229.1	231.3	232.4	232.8
Energy commodities	449.9	424.5	406.6	410.2	430.8	438.2	436.6	450.6	425.0	406.9	410.5	431.6	439.0	437.3
Services less energy	308.3	321.5	324.5	327.2	329.9	331.8	333.6	308.9	321.8	325.2	327.9	330.6	332.6	334.7
Purchasing power of the consumer dollar, 1967 = $1	$0.362	$0.353	$0.352	$0.348	$0.344	$0.342	$0.342	$0.362	$0.354	$0.352	$0.349	$0.345	$0.343	$0.342

18. Continued—Consumer Price Index—U.S. city average

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
FOOD AND BEVERAGES	270.1	275.6	276.5	278.1	280.2	280.8	279.9	270.6	275.9	276.8	278.4	280.5	281.2	280.2
Food	277.4	283.0	283.9	285.5	287.8	288.5	287.4	277.7	283.1	284.1	285.7	288.0	288.6	287.5
Food at home	272.8	277.1	277.9	279.8	282.6	282.8	280.8	272.2	276.2	277.0	278.8	281.6	281.9	279.8
Cereals and bakery products	272.6	281.3	281.7	283.3	283.6	284.3	284.8	272.0	280.0	280.4	282.0	282.3	283.0	283.4
Cereals and cereal products (12/77 = 100)	149.5	153.9	153.6	154.5	154.5	154.8	154.5	151.3	154.8	154.6	155.4	155.5	155.8	155.5
Flour and prepared flour mixes (12/77 = 100)	138.6	138.2	138.7	141.8	142.1	143.5	141.6	142.0	139.6	140.1	142.1	142.5	144.0	142.1
Cereal (12/77 = 100)	154.6	165.2	165.4	165.7	166.1	166.3	166.5	156.4	167.2	167.4	167.8	168.2	168.5	168.6
Rice, pasta, and cornmeal (12/77 = 100)	151.4	151.2	149.6	150.2	149.4	148.9	149.3	153.1	152.4	150.8	151.5	150.6	150.0	150.5
Bakery products (12/77 = 100)	142.4	147.1	147.5	148.3	148.6	149.0	149.4	141.5	146.0	146.3	147.2	147.4	147.8	148.1
White bread	235.6	242.3	242.8	243.8	242.4	246.1	246.6	233.0	238.3	238.8	240.0	238.3	241.9	242.5
Other breads (12/77 = 100)	140.8	145.1	145.2	146.3	145.6	145.1	146.2	143.4	147.0	147.1	148.2	147.5	147.0	148.2
Fresh biscuits, rolls, and muffins (12/77 = 100)	143.4	148.4	147.6	149.7	149.9	148.9	150.5	141.0	144.6	143.8	146.0	146.2	145.4	146.6
Fresh cakes and cupcakes (12/77 = 100)	142.7	148.0	148.4	149.0	149.2	148.9	149.5	141.2	146.4	146.8	147.4	147.5	147.2	147.6
Cookies (12/77 = 100)	143.1	149.4	150.2	150.5	150.7	150.0	149.6	144.1	150.2	151.2	151.4	151.5	150.9	150.6
Crackers, bread, and cracker products (12/77 = 100)	130.6	135.3	137.3	139.6	140.9	141.8	141.3	130.9	136.5	138.7	141.0	142.3	143.2	142.6
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	143.9	146.3	146.8	147.3	148.9	148.5	148.9	143.4	148.7	149.3	149.9	151.5	151.1	151.5
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	147.1	153.5	153.4	153.6	156.3	156.2	156.6	141.5	146.8	146.5	146.7	149.4	149.2	149.5
Meats, poultry, fish, and eggs	255.8	256.9	258.3	261.0	266.0	268.5	265.4	255.5	256.4	257.8	260.7	265.8	268.3	265.1
Meats, poultry, and fish	262.2	262.1	264.2	268.2	274.3	276.2	273.7	261.8	261.5	263.6	267.7	273.9	275.8	273.3
Meats	262.0	261.2	263.6	269.7	277.2	278.8	276.5	261.3	260.6	262.8	268.0	276.5	278.2	275.8
Beef and veal	275.9	271.7	274.8	281.1	288.2	286.7	280.5	275.9	272.3	275.3	281.9	289.0	287.4	280.8
Ground beef other than canned	267.4	265.8	266.9	269.4	274.6	272.5	268.1	269.4	266.9	267.9	270.7	275.9	273.9	269.0
Chuck roast	285.3	284.3	285.4	287.2	295.4	296.2	289.7	295.5	293.1	294.1	296.2	304.9	305.3	298.9
Round roast	247.2	243.0	244.9	252.4	257.0	251.8	245.0	247.3	245.9	247.9	255.9	260.1	254.7	247.9
Round steak	256.0	258.8	262.8	269.2	278.8	271.2	263.4	251.5	256.4	260.8	267.8	277.2	269.4	261.1
Sirloin steak	282.2	260.6	271.1	282.3	294.1	295.6	285.5	279.2	262.2	272.4	283.8	295.5	298.0	286.8
Other beef and veal (12/77 = 100)	164.3	161.5	163.7	169.0	173.3	173.3	169.7	162.6	158.8	162.1	167.5	171.9	171.7	168.0
Pork	235.3	239.5	241.6	249.9	259.5	265.4	268.2	236.5	238.9	241.0	249.2	258.9	264.9	267.6
Bacon	231.1	249.6	255.9	267.7	280.7	283.9	295.6	234.5	253.3	259.7	271.9	285.3	288.7	300.4
Chops	224.1	216.3	223.4	230.0	241.2	248.9	248.0	224.4	214.7	221.7	228.2	239.6	247.3	246.3
Ham other than canned (12/77 = 100)	105.3	109.2	105.4	111.1	112.6	115.3	116.8	103.7	106.5	102.8	108.3	109.6	112.4	113.8
Sausage	297.2	305.8	305.7	313.3	326.3	331.9	332.2	298.6	306.6	306.3	314.2	327.2	332.9	333.5
Canned ham	234.9	247.6	245.6	249.9	253.2	255.3	257.6	238.0	251.2	248.9	253.2	256.4	258.7	261.1
Other pork (12/77 = 100)	135.0	132.6	135.2	138.9	145.4	150.3	150.8	136.3	131.7	134.5	138.2	144.7	149.5	150.0
Other meats	261.4	262.4	262.8	264.0	268.5	272.0	272.8	258.6	261.7	261.8	263.2	267.8	271.3	272.3
Frankfurters	258.8	260.5	259.5	262.7	268.8	274.2	275.6	260.4	260.0	258.4	261.8	268.3	273.4	274.9
Bologna, liverwurst, and salami (12/77 = 100)	147.0	149.2	150.2	150.7	154.6	156.5	157.5	145.7	149.4	150.3	150.7	154.6	156.6	157.6
Other lunchmeats (12/77 = 100)	130.6	133.7	133.2	134.3	135.5	137.3	138.3	128.8	131.7	131.2	132.3	133.4	135.1	136.1
Lamb and organ meats (12/77 = 100)	146.8	141.0	142.6	141.2	143.1	143.9	142.3	148.3	144.2	145.6	144.4	146.5	147.3	145.6
Poultry	202.0	194.7	193.3	196.0	197.5	199.6	196.2	201.2	192.8	191.5	194.1	195.8	197.8	194.4
Fresh whole chicken	201.4	195.1	194.1	196.8	199.1	201.2	193.8	199.6	192.8	192.0	194.7	197.0	198.8	191.8
Fresh and frozen chicken parts (12/77 = 100)	131.8	127.5	127.6	128.3	129.3	129.4	128.2	131.6	125.9	125.9	126.5	127.5	127.9	126.5
Other poultry (12/77 = 100)	129.7	123.9	121.3	124.3	124.6	127.3	127.7	129.9	123.3	120.8	123.9	124.3	126.9	127.4
Fish and seafood	356.8	376.3	382.0	366.3	365.2	370.2	367.6	356.4	375.5	381.4	365.0	364.2	368.7	365.8
Canned fish and seafood (12/77 = 100)	139.8	141.0	141.5	139.8	139.9	140.5	139.4	138.5	140.5	140.8	139.2	139.4	139.9	138.8
Fresh and frozen fish and seafood (12/77 = 100)	133.6	144.7	147.9	139.4	138.6	141.3	140.4	134.1	144.6	148.0	138.9	138.3	140.8	139.7
Eggs	177.6	195.2	186.9	172.3	162.5	173.6	161.2	177.7	196.3	187.9	173.4	163.4	174.7	162.3
Dairy products	243.8	246.5	247.5	247.0	246.3	247.5	247.5	243.9	245.9	246.8	246.3	245.7	246.8	246.8
Fresh milk and cream (12/77 = 100)	134.5	135.3	135.9	135.7	135.2	135.6	135.4	134.3	134.8	135.3	135.1	134.7	135.1	134.8
Fresh whole milk	220.2	221.7	222.2	222.0	221.3	221.6	221.2	219.8	220.8	221.3	221.1	220.4	220.7	220.3
Other fresh milk and cream (12/77 = 100)	134.2	135.1	136.2	135.7	135.4	136.2	136.0	134.4	134.6	135.7	135.2	134.9	135.7	135.5
Processed dairy products (12/77 = 100)	142.5	144.9	145.6	145.2	144.9	145.9	146.3	143.3	145.3	145.9	145.5	145.2	146.2	146.6
Butter	246.2	250.1	250.1	251.1	250.9	251.1	252.1	248.5	252.7	252.7	253.7	253.4	253.7	254.6
Cheese (12/77 = 100)	140.8	143.3	143.7	144.0	143.2	144.2	144.8	141.5	143.6	144.0	144.3	143.6	144.5	145.1
Ice cream and related products (12/77 = 100)	147.9	149.5	150.9	148.7	148.6	150.4	150.6	147.9	148.9	150.2	147.9	148.7	149.6	149.6
Other dairy products (12/77 = 100)	135.6	139.5	139.9	139.7	138.7	141.3	140.7	137.2	140.3	140.8	140.4	139.4	142.0	141.6
Fruits and vegetables	286.1	293.1	294.0	297.9	305.6	299.7	291.4	282.5	289.1	290.3	293.6	301.0	295.3	286.7
Fresh fruits and vegetables	295.8	302.1	304.1	311.7	325.9	313.8	296.9	290.4	296.1	298.9	305.1	318.6	307.1	289.7
Fresh fruits	306.9	297.8	306.7	318.8	340.8	332.4	336.1	298.4	287.3	295.5	308.9	327.0	320.5	323.2
Apples	282.1	288.7	287.5	299.8	321.4	331.8	314.5	284.6	288.5	287.8	300.1	321.9	333.3	316.7
Bananas	245.2	263.0	268.5	261.6	267.9	245.4	233.7	239.9	261.1	266.1	259.3	265.5	243.6	231.3
Oranges	353.7	316.3	330.8	362.1	406.8	438.2	473.0	325.1	285.9	300.2	328.3	367.5	389.9	433.5
Other fresh fruits (12/77 = 100)	163.5	157.2	163.4	168.2	177.1	161.6	163.9	160.5	151.8	157.6	162.4	170.3	156.1	158.1
Fresh vegetables	285.5	306.1	301.8	305.1	311.9	296.4	260.2	283.2	304.2	302.0	303.7	311.1	295.0	259.6
Potatoes	375.1	301.0	306.1	320.3	344.9	370.9	328.1	362.8	294.8	300.8	313.6	339.7	366.0	323.4
Lettuce	290.6	270.9	355.2	291.6	269.1	254.5	246.3	290.0	271.3	358.6	293.5	270.0	253.0	247.5
Tomatoes	209.9	258.1	220.5	226.5	275.6	270.2	194.3	211.0	261.8	224.9	230.6	279.9	274.9	198.2
Other fresh vegetables (12/77 = 100)	143.6	185.0	166.3	179.3	177.5	155.6	138.3	144.1	184.0	166.7	178.6	177.0	154.8	137.8
Processed fruits and vegetables	277.9	285.8	285.5	285.4	285.9	[c]286.8	288.0	276.2	283.7	283.3	283.3	283.9	284.8	285.9
Processed fruits (12/77 = 100)	143.4	149.0	148.2	148.3	148.0	148.5	148.7	143.4	148.6	147.7	147.9	147.6	148.1	148.2
Frozen fruit and fruit juices (12/77 = 100)	143.5	149.2	147.1	145.7	144.4	143.5	142.8	142.8	148.2	146.1	144.6	143.4	142.6	141.7
Fruit juices other than frozen (12/77 = 100)	147.4	152.4	151.5	152.2	151.7	152.2	153.0	147.1	151.4	150.4	151.0	150.7	151.0	151.9
Canned and dried fruits (12/77 = 100)	139.1	145.3	145.6	146.4	147.0	148.8	148.9	139.8	145.9	146.2	147.0	147.6	149.4	149.6
Processed vegetables (12/77 = 100)	135.7	138.2	138.6	138.5	139.3	139.7	140.7	134.6	137.2	137.5	137.4	138.2	138.6	139.6
Frozen vegetables (12/77 = 100)	134.9	142.0	144.0	143.9	145.6	146.7	147.7	135.7	143.4	145.3	145.2	146.9	148.0	149.0

18. Continued — Consumer Price Index — U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
FOOD AND BEVERAGES — Continued														
Food — Continued														
Food at home — Continued														
Fruits and vegetables — Continued														
Cut corn and canned beans except lima (12/77 = 100)	137.4	141.2	140.5	140.7	141.1	141.0	143.6	135.4	138.8	137.9	138.5	138.8	138.6	141.2
Other canned and dried vegetables (12/77 = 100)	135.4	134.8	135.0	134.6	135.2	135.4	135.6	133.7	133.3	133.5	133.2	133.8	134.1	134.2
Other foods at home	325.1	331.7	331.8	332.6	332.6	332.2	333.3	326.1	332.6	332.6	333.5	333.5	333.1	334.0
Sugar and sweets	361.3	365.5	365.3	365.7	366.8	369.5	370.1	362.7	365.4	365.2	366.6	366.9	369.7	370.3
Candy and chewing gum (12/77 = 100)	146.1	150.3	150.9	150.0	150.4	150.5	150.0	147.4	150.1	150.8	149.9	150.5	150.6	150.1
Sugar and artificial sweeteners (12/77 = 100)	164.3	161.0	159.9	160.5	161.4	164.6	166.7	165.3	162.4	161.1	161.8	162.8	166.1	168.2
Other sweets (12/77 = 100)	145.0	147.4	147.2	148.9	148.9	149.8	149.6	142.9	145.5	145.3	147.0	146.9	147.9	147.5
Fats and oils (12/77 = 100)	269.2	259.6	260.4	260.6	260.7	259.3	258.3	268.7	259.7	260.4	260.6	260.7	259.3	258.2
Margarine	258.2	256.7	258.6	259.7	261.2	258.4	257.9	255.7	256.1	259.1	259.3	260.8	258.0	257.3
Nondairy substitutes and peanut butter (12/77 = 100)	179.8	156.1	157.3	156.0	156.5	154.9	154.2	178.8	154.4	155.6	154.2	154.9	153.1	152.4
Other fats, oils, and salad dressings (12/77 = 100)	129.4	129.5	129.0	129.6	129.1	129.2	128.5	129.6	130.0	129.5	130.2	129.7	129.7	129.0
Nonalcoholic beverages	413.1	424.8	424.1	425.6	424.8	422.8	423.8	415.2	426.6	426.0	427.3	426.6	424.4	425.3
Cola drinks, excluding diet cola	298.2	306.6	304.9	306.1	305.9	302.9	304.3	296.6	303.8	302.4	303.6	303.3	300.4	301.7
Carbonated drinks, including diet cola (12/77 = 100)	141.5	143.4	143.4	144.3	143.1	143.3	144.8	138.9	141.4	141.5	142.3	141.2	141.1	142.6
Roasted coffee	346.0	366.6	369.6	369.3	365.1	364.3	365.5	342.8	362.2	365.0	364.3	360.1	359.3	360.4
Freeze dried and instant coffee	333.3	343.6	343.4	344.3	344.3	344.9	344.9	333.8	343.4	343.0	343.9	343.8	344.4	344.4
Other noncarbonated drinks (12/77 = 100)	134.9	138.9	138.7	138.9	140.0	139.2	137.7	135.0	139.1	138.9	139.1	140.2	139.5	137.8
Other prepared foods	257.9	266.5	266.6	267.5	267.8	268.0	269.9	259.7	268.1	268.3	269.3	269.5	269.8	271.5
Canned and packaged soup (12/77 = 100)	133.6	135.6	135.7	135.7	136.3	136.9	137.9	134.8	137.8	137.8	137.7	138.3	138.9	140.0
Frozen prepared foods (12/77 = 100)	143.5	147.0	147.2	147.8	147.3	146.7	149.1	142.5	146.5	146.7	147.3	146.8	146.0	148.5
Snacks (12/77 = 100)	148.8	153.4	152.9	153.5	153.2	152.7	153.1	151.5	155.4	155.0	155.6	155.2	154.8	155.1
Seasonings, olives, pickles, and relish (12/77 = 100)	144.4	153.2	153.6	152.8	153.3	152.7	154.1	142.8	152.2	152.7	151.9	152.4	152.1	153.2
Other condiments (12/77 = 100)	142.9	148.2	148.7	150.2	150.6	151.4	151.9	145.6	149.9	150.4	151.9	152.4	153.2	153.6
Miscellaneous prepared foods (12/77 = 100)	142.0	147.7	147.6	148.5	148.3	149.3	150.2	142.1	147.9	147.7	148.7	148.5	149.5	150.3
Other canned and packaged prepared foods (12/77 = 100)	139.5	143.2	143.3	143.5	144.5	144.6	145.4	140.8	144.5	144.6	144.9	145.8	145.9	146.8
Food away from home	293.7	302.4	303.6	304.8	305.9	307.6	308.7	296.4	305.4	306.7	307.8	309.0	310.7	311.8
Lunch (12/77 = 100)	143.2	147.0	147.5	148.2	148.9	149.6	150.3	144.2	148.6	149.1	149.8	150.5	151.2	152.0
Dinner (12/77 = 100)	141.9	145.7	146.3	147.1	147.4	148.1	148.6	143.7	147.3	147.9	148.8	149.1	149.8	150.3
Other meals and snacks (12/77 = 100)	142.1	147.9	148.6	148.5	149.2	150.5	150.7	143.1	148.7	149.3	149.2	149.9	151.1	151.3
Alcoholic beverages	201.4	206.6	207.4	208.0	208.4	209.2	210.1	203.8	208.8	209.5	210.1	210.4	211.3	212.1
Alcoholic beverages at home (12/77 = 100)	130.6	134.0	134.6	135.0	135.0	135.5	136.1	132.4	135.4	136.0	136.2	136.3	136.9	137.4
Beer and ale	202.6	209.2	210.5	210.3	210.6	211.4	211.9	203.2	208.3	209.6	209.4	209.6	210.5	210.9
Whiskey	144.7	147.0	147.2	148.2	148.3	148.9	149.6	145.6	147.8	148.0	149.0	149.1	149.8	150.4
Wine	227.4	235.3	236.4	236.9	235.3	236.5	238.9	235.5	243.3	244.4	244.9	242.7	245.0	247.1
Other alcoholic beverages (12/77 = 100)	117.0	118.1	118.2	119.0	119.7	119.6	120.3	117.0	118.0	118.0	118.9	119.6	119.6	120.5
Alcoholic beverages away from home (12/77 = 100)	134.7	138.2	138.4	139.1	140.3	140.8	141.2	135.4	139.7	139.9	140.6	141.6	142.1	142.4
HOUSING	299.7	306.7	309.4	313.8	317.5	319.2	320.1	299.6	306.2	309.2	313.7	317.5	319.3	320.5
Shelter	322.0	327.6	331.4	336.7	340.9	342.8	344.2	323.6	328.5	332.8	338.3	342.6	344.6	346.5
Rent, residential	210.3	219.6	220.1	221.8	222.6	224.8	226.0	209.9	219.1	219.6	221.3	222.1	224.3	225.5
Other rental costs	298.5	320.1	323.7	323.6	327.3	330.0	333.9	299.0	318.9	322.8	322.6	326.3	329.4	333.3
Lodging while out of town	325.7	340.9	346.6	346.6	352.2	356.5	352.0	324.4	337.9	343.9	344.0	349.4	354.2	359.5
Tenants' insurance (12/77 = 100)	133.9	144.1	144.9	144.4	145.5	145.6	147.5	134.5	144.3	144.7	143.8	144.8	144.8	146.6
Homeownership	361.8	365.7	370.6	377.4	382.8	384.5	385.9	364.8	367.9	373.6	380.5	386.0	388.0	390.1
Home purchase	272.6	269.2	272.3	279.3	285.6	287.7	287.9	272.3	267.1	270.5	278.1	284.4	286.8	287.3
Financing, taxes, and insurance	488.3	500.9	508.4	516.2	521.8	524.3	527.3	495.3	507.0	516.0	523.8	529.7	532.4	536.8
Property insurance	389.0	394.1	393.6	396.7	400.6	401.5	402.5	390.5	396.5	396.0	399.2	402.7	403.7	404.6
Property taxes	205.2	216.6	217.2	218.3	218.8	219.3	221.8	207.1	218.5	219.1	220.2	220.7	221.1	223.7
Contracted mortgage interest cost	641.3	655.5	667.1	678.5	686.7	690.4	694.0	643.8	656.4	670.2	681.4	680.0	694.0	699.6
Mortgage interest rates	232.4	240.7	242.1	240.2	238.3	237.3	238.8	233.3	242.3	244.4	242.1	240.2	238.2	241.2
Maintenance and repairs	320.5	327.2	331.6	334.5	336.1	334.7	335.9	315.8	323.7	328.3	330.9	332.4	331.5	332.5
Maintenance and repair services	350.6	357.8	363.6	367.0	369.1	366.9	368.5	349.5	358.6	365.0	368.0	370.0	368.1	369.6
Maintenance and repair commodities	249.5	255.0	256.2	257.8	258.3	258.7	258.8	243.1	248.6	249.7	251.3	252.1	252.9	253.0
Paint and wallpaper, supplies, tools, and equipment (12/77 = 100)	146.9	151.8	153.1	154.2	153.3	153.4	154.2	139.2	144.7	145.8	147.0	146.0	146.5	147.3
Lumber, awnings, glass, and masonry (12/77 = 100)	124.2	123.9	124.5	124.5	124.7	125.0	124.1	122.0	121.2	121.9	121.9	122.1	1225	121.7
Plumbing, electrical, heating, and cooling supplies (12/77 = 100)	132.0	133.4	133.4	135.1	136.2	137.1	136.3	130.6	133.1	133.1	134.9	136.0	136.6	135.6
Miscellaneous supplies and equipment (12/77 = 100)	130.5	135.1	135.6	136.3	138.4	138.3	138.8	133.3	137.1	137.4	138.2	140.6	140.5	140.9
Fuel and other utilities	327.8	339.3	339.2	345.4	352.2	354.7	356.3	328.7	340.2	340.3	346.5	353.6	356.2	357.7
Fuels	419.5	430.5	428.2	438.0	448.4	452.0	454.0	418.7	429.9	427.8	437.4	448.3	451.9	453.8
Fuel oil, coal, and bottled gas	674.6	664.0	641.3	644.6	656.6	659.9	659.9	677.9	666.7	644.0	647.7	659.7	662.9	662.7
Fuel oil	707.3	692.3	666.2	670.6	684.8	688.6	386.8	710.2	694.4	668.4	673.3	687.5	691.1	689.1
Other fuels (6/78 = 100)	163.6	168.0	166.4	165.7	165.6	166.0	169.2	165.1	169.5	167.9	167.1	166.9	167.4	170.5
Gas (piped) and electricity	360.8	375.9	377.8	389.0	398.9	402.1	404.4	359.4	374.8	376.8	387.8	398.2	401.[illegible]	403.7
Electricity	311.9	313.3	312.8	314.9	327.5	330.5	333.7	312.1	312.3	311.8	314.4	327.7	330.8	333.7
Utility (piped) gas	416.2	458.6	465.3	494.6	497.2	500.2	500.6	411.2	456.6	463.6	490.8	493.8	496.9	497.5

18. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
HOUSING — Continued														
Fuel and other utilities — Continued														
Other utilities and public services	183.7	195.0	197.7	198.9	200.4	201.4	202.4	184.3	195.4	198.2	199.5	201.1	202.1	203.1
Telephone services	149.2	158.5	160.8	161.6	163.2	163.8	164.2	149.5	158.6	161.0	161.9	163.5	164.2	164.6
Local charges (12/77 = 100)	117.3	125.6	127.9	128.9	131.2	131.9	132.5	117.6	125.7	128.1	129.2	131.6	132.3	132.9
Interstate toll calls (12/77 = 100)	113.4	117.7	119.9	120.0	119.6	119.7	119.7	113.8	117.8	120.2	120.4	120.1	120.1	120.1
Intrastate toll calls (12/77 = 100)	101.8	109.0	108.9	109.3	109.8	110.0	110.0	101.6	108.7	108.7	109.0	109.4	109.6	109.6
Water and sewerage maintenance	299.2	316.9	320.7	323.5	324.9	327.7	331.9	301.4	319.7	323.6	326.7	328.0	330.8	334.8
Household furnishings and operations	222.9	231.6	232.6	233.4	233.7	234.1	233.4	219.8	228.0	229.1	230.0	230.4	230.9	230.0
Housefurnishings	186.2	192.7	193.8	194.7	194.7	194.7	193.3	184.5	190.4	191.7	192.5	192.6	192.7	191.3
Textile housefurnishings	203.4	217.7	218.7	220.9	220.2	218.6	220.4	207.3	219.9	221.4	223.9	223.3	221.1	222.9
Household linens (12/77 = 100)	124.6	134.7	135.8	135.4	134.6	131.9	132.9	126.8	135.6	137.0	136.8	135.9	133.3	134.1
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	129.1	136.7	136.9	140.1	140.1	140.8	142.2	132.1	138.7	139.1	142.8	143.0	143.2	144.7
Furniture and bedding	205.4	212.1	214.7	215.1	214.4	214.2	210.3	201.4	208.2	211.0	211.3	210.9	210.5	208.9
Bedroom furniture (12/77 = 100)	135.9	140.8	142.3	144.5	143.0	144.8	141.4	132.2	137.2	138.9	140.7	139.7	141.2	137.3
Sofas (12/77 = 100)	116.0	118.0	119.3	119.1	117.5	117.7	117.0	115.0	118.2	119.6	119.4	118.2	118.1	117.5
Living room chairs and tables (12/77 = 100)	116.7	121.6	123.2	122.8	123.2	121.9	121.1	116.9	121.8	123.3	122.9	123.3	122.0	121.4
Other furniture (12/77 = 100)	135.9	140.5	142.3	141.6	142.3	140.9	137.1	132.2	135.8	137.9	137.0	137.7	136.3	133.3
Appliances including TV and sound equipment	147.3	150.1	150.6	151.4	151.4	151.6	151.3	146.6	149.7	150.3	151.1	151.2	151.5	151.2
Television and sound equipment (12/77 = 100)	108.6	109.1	108.7	108.8	108.6	108.7	108.3	107.8	108.2	107.7	107.9	107.7	107.8	107.5
Television	105.0	104.7	104.2	104.3	104.4	104.0	103.9	104.2	103.5	103.0	103.0	103.1	102.7	102.7
Sound equipment (12/77 = 100)	112.8	114.0	113.7	113.9	113.5	114.0	113.3	111.9	113.2	112.8	113.0	112.7	113.2	112.6
Household appliances	174.9	180.3	182.1	183.6	183.8	184.2	184.1	174.1	180.4	182.3	183.8	184.2	184.8	184.6
Refrigerators and home freezers	175.8	183.7	184.8	186.2	187.7	187.4	187.4	178.9	189.3	190.6	191.8	193.2	192.9	192.9
Laundry equipment (12/77 = 100)	129.2	133.3	136.4	136.6	136.7	137.3	137.3	129.1	133.5	136.6	136.8	136.9	137.5	137.5
Other household appliances (12/77 = 100)	119.5	122.2	122.9	124.3	123.9	124.4	124.3	117.0	120.0	120.7	122.3	122.3	123.0	122.7
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	118.5	121.9	122.3	123.7	123.1	123.3	122.7	116.4	119.3	119.7	121.4	121.6	122.2	121.4
Office machines, small electric appliances, and air conditioners (12/77 = 100)	120.6	122.5	123.5	124.9	124.8	125.6	126.0	117.7	120.7	121.8	123.3	123.0	123.9	124.2
Other household equipment (12/77 = 100)	131.7	137.3	137.8	138.3	139.0	139.6	138.2	131.0	135.3	135.6	136.0	136.9	137.5	136.0
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	133.4	140.9	140.3	141.4	142.3	142.7	142.9	129.3	133.3	132.9	133.9	134.9	135.4	135.4
Clocks, lamps, and decor items (12/77 = 100)	125.8	129.0	130.2	131.4	132.2	132.3	129.8	122.5	125.4	126.5	127.4	128.2	126.3	125.1
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	138.9	143.1	145.0	144.4	145.6	145.9	143.8	137.0	139.0	140.6	139.8	141.4	141.9	140.0
Lawn equipment, power tools, and other hardware (12/77 = 100)	124.0	132.1	130.8	132.1	131.9	133.2	132.3	128.8	137.3	136.0	137.4	137.1	138.5	137.2
Housekeeping supplies	272.0	284.2	284.9	285.5	286.5	288.4	288.7	268.6	280.4	281.2	281.8	283.1	285.0	284.9
Soaps and detergents	267.0	279.5	280.0	278.8	280.8	281.4	279.4	263.6	275.7	276.3	275.2	277.0	277.6	275.4
Other laundry and cleaning products (12/77 = 100)	134.8	142.1	142.7	143.3	143.8	145.3	144.6	134.7	140.9	141.6	142.3	142.7	144.2	143.6
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	138.4	145.7	146.4	146.0	146.5	147.7	148.5	138.7	145.4	146.2	145.6	146.1	147.4	148.3
Stationery, stationery supplies, and gift wrap (12/77 = 100)	128.6	130.7	131.4	132.0	132.5	134.3	135.4	128.2	133.8	134.6	135.3	136.0	137.8	138.6
Miscellaneous household products (12/77 = 100)	141.7	147.5	147.5	149.3	150.2	150.3	150.7	136.9	142.4	142.4	144.1	144.9	145.1	145.5
Lawn and garden supplies (12/77 = 100)	139.2	144.7	144.7	144.8	144.0	145.3	145.7	131.8	136.7	136.8	136.6	136.7	138.1	138.1
Housekeeping services	296.9	309.9	310.4	311.3	311.7	312.5	312.9	295.1	308.2	309.2	310.2	310.9	311.6	312.2
Postage	308.0	337.5	337.5	337.5	337.5	337.5	337.5	308.1	337.5	337.5	337.5	337.5	337.5	337.5
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	143.9	150.8	152.1	153.1	154.2	155.3	156.1	143.8	150.6	152.2	153.3	154.5	155.4	156.4
Appliance and furniture repair (12/77 = 100)	128.5	135.0	135.6	136.6	137.0	137.5	137.7	127.2	133.5	134.1	135.1	135.5	136.0	136.1
APPAREL AND UPKEEP	187.4	191.1	191.9	191.5	190.8	189.7	191.8	187.9	190.5	191.2	190.6	189.6	188.7	190.7
Apparel commodities	178.0	180.8	181.4	180.9	180.0	178.6	180.8	179.0	180.8	181.3	180.5	179.4	178.2	180.3
Apparel commodities less footwear	174.3	176.8	177.4	176.7	175.6	174.0	176.9	175.2	176.6	177.1	176.0	174.7	173.4	176.2
Men's and boys'	177.6	181.7	183.1	183.8	183.1	182.4	183.7	178.4	181.6	182.9	183.7	183.2	182.6	183.5
Men's (12/77 = 100)	111.7	114.5	115.5	115.9	115.4	114.9	115.9	112.8	114.7	115.7	116.2	115.8	115.4	116.2
Suits, sport coats, and jackets (12/77 = 100)	105.6	107.2	107.6	108.1	107.3	105.5	108.0	99.7	100.4	101.1	101.4	100.6	99.2	101.2
Coats and jackets (12/77 = 100)	97.7	98.1	99.1	99.9	99.5	98.2	99.1	102.4	99.7	100.7	101.5	101.1	99.8	100.3
Furnishings and special clothing (12/77 = 100)	129.5	136.8	138.2	138.7	138.0	138.7	138.4	125.3	133.1	134.5	135.3	134.7	135.3	134.9
Shirts (12/77 = 100)	117.9	119.9	121.3	121.2	121.5	121.6	121.9	122.1	122.3	123.4	123.1	123.8	123.6	123.9
Dungarees, jeans, and trousers (12/77 = 100)	106.6	108.6	109.7	110.3	109.7	109.5	110.5	112.5	114.2	115.1	115.6	115.2	115.0	116.0
Boys' (12/77 = 100)	115.8	117.8	118.3	118.8	118.5	118.6	118.4	113.8	116.1	116.5	117.1	116.9	116.9	116.7
Coats, jackets, sweaters, and shirts (12/77 = 100)	109.2	109.4	111.2	111.5	110.7	109.0	110.5	109.5	109.7	111.5	112.0	111.5	109.7	111.3
Furnishings (12/77 = 100)	124.3	128.7	130.3	131.2	131.9	132.1	131.1	120.3	124.7	126.0	127.2	128.0	128.2	127.2
Suits, trousers, sport coats, and jackets (12/77 = 100)	117.5	120.1	119.0	119.6	119.4	120.7	119.5	114.7	117.8	116.8	117.3	117.1	118.3	117.1
Women's and girls'	157.8	160.3	160.9	159.1	157.3	154.6	159.2	161.2	163.0	163.4	160.8	158.4	156.2	160.9
Women's (12/77 = 100)	104.4	106.8	107.1	105.7	104.4	102.1	105.4	107.1	109.0	109.1	107.1	105.4	103.5	106.9
Coats and jackets	162.1	162.0	163.4	158.3	156.4	154.9	163.0	168.7	173.1	172.9	165.7	162.9	161.8	171.0
Dresses	166.2	163.1	166.6	162.0	160.1	152.8	158.5	153.4	148.1	151.1	147.1	145.4	138.4	145.9
Separates and sportswear (12/77 = 100)	97.4	100.3	100.1	101.2	100.2	96.7	98.3	101.1	101.2	101.0	101.9	101.0	97.6	99.1
Underwear, nightwear, and hosiery (12/77 = 100)	121.2	127.1	127.4	128.1	127.9	127.7	129.3	121.0	126.9	127.3	127.9	127.6	127.4	129.0
Suits (12/77 = 100)	87.0	92.7	89.4	83.4	78.6	77.6	85.6	109.8	114.1	111.0	100.6	92.7	93.1	99.8
Girls' (12/77 = 100)	107.9	105.6	106.7	106.3	105.8	106.3	108.2	107.6	106.0	106.9	106.2	105.2	105.4	107.4
Coats, jackets, dresses, and suits (12/77 = 100)	101.6	98.2	98.8	96.9	95.1	98.8	101.4	101.5	97.2	97.6	95.0	92.4	96.0	99.4
Separates and sportswear (12/77 = 100)	108.7	104.6	105.4	105.9	106.0	103.6	105.8	108.9	106.9	107.6	108.0	107.7	104.1	105.9
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	117.0	119.6	122.0	122.4	122.9	123.8	124.0	115.1	118.7	121.0	121.5	121.9	122.7	123.0

18. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
APPAREL AND UPKEEP — Continued														
Apparel commodities — Continued														
Apparel commodities less footwear — Continued														
Infants' and toddlers'	263.6	264.7	267.0	269.0	268.7	268.8	272.4	279.3	275.4	278.2	279.3	278.2	277.8	283.0
Other apparel commodities	214.0	212.7	210.8	209.7	209.9	209.7	210.8	206.1	201.6	199.5	198.8	198.9	198.7	199.5
Sewing materials and notions (12/77 = 100)	117.5	118.1	118.5	119.3	119.2	120.0	121.5	115.3	116.5	116.9	117.7	117.6	118.5	119.6
Jewelry and luggage (12/77 = 100)	147.2	145.7	143.8	142.5	142.8	142.2	142.6	141.4	136.7	134.5	133.5	133.6	133.1	133.3
Footwear	200.0	204.9	205.6	206.5	206.6	206.4	204.4	200.8	205.2	206.1	206.9	206.7	206.7	204.1
Men's (12/77 = 100)	128.3	132.5	132.3	132.4	132.1	132.3	130.9	129.8	134.5	134.4	134.5	134.1	134.3	132.7
Boys' and girls' (12/77 = 100)	129.1	129.2	130.4	131.5	132.1	131.7	128.7	130.4	132.1	133.6	134.6	134.8	134.4	131.3
Women's (12/77 = 100)	120.6	124.7	125.1	125.8	125.8	125.6	125.4	118.9	120.8	121.1	121.6	121.6	121.5	121.1
Apparel services	260.2	271.3	273.4	274.7	275.3	276.6	277.4	258.2	269.0	271.0	272.3	273.0	274.3	275.2
Laundry and drycleaning other than coin operated (12/77 = 100)	154.7	162.4	163.5	164.4	164.8	165.4	165.6	153.9	160.9	162.0	162.8	163.3	163.8	164.1
Other apparel services (12/77 = 100)	137.2	141.1	142.5	142.9	143.1	144.1	145.0	136.5	141.5	142.7	143.1	143.4	144.6	145.5
TRANSPORTATION	283.7	285.1	282.9	285.6	292.8	296.1	296.2	285.1	286.6	284.3	287.1	294.5	297.9	298.0
Private	280.5	281.3	278.8	281.5	288.9	292.3	292.4	282.6	283.7	281.2	284.0	291.6	295.1	295.2
New cars	191.9	194.4	196.0	197.5	198.1	198.6	198.7	192.1	194.2	195.9	197.3	197.9	198.5	198.6
Used cars	266.9	280.9	285.1	291.4	298.2	302.4	304.4	266.9	280.9	285.2	291.4	298.2	302.4	304.4
Gasoline	411.7	383.9	366.7	370.4	392.3	400.3	398.4	412.9	385.4	367.9	371.7	393.8	401.6	399.7
Automobile maintenance and repair	295.5	310.2	311.9	313.6	316.0	318.0	319.2	296.1	311.1	312.8	314.4	316.8	318.7	320.0
Body work (12/77 = 100)	145.8	154.5	155.0	155.7	156.3	157.5	158.2	145.4	152.7	153.3	154.0	154.7	156.0	156.8
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	140.9	148.7	149.5	150.8	151.6	151.9	152.5	142.6	152.8	153.7	154.9	155.7	156.1	156.6
Maintenance and servicing (12/77 = 100)	137.8	143.9	144.5	145.0	146.8	147.9	148.5	138.2	143.4	144.0	144.4	146.2	147.3	147.8
Power plant repair (12/77 = 100)	141.2	148.0	149.1	150.1	150.8	151.7	152.4	140.5	147.5	148.6	149.6	150.3	151.2	151.9
Other private transportation	243.0	254.5	255.1	255.7	258.7	260.8	260.8	245.6	257.8	258.2	258.8	261.8	264.0	263.9
Other private transportation commodities	212.1	215.6	214.9	216.9	217.5	216.3	214.8	213.4	218.2	217.3	219.4	220.0	218.8	217.1
Motor oil, coolant, and other products (12/77 = 100)	146.8	150.2	150.7	149.9	150.7	151.5	153.2	144.1	148.7	149.2	148.4	149.0	150.3	151.8
Automobile parts and equipment (12/77 = 100)	135.7	137.9	137.2	138.8	139.2	138.2	136.8	137.0	139.9	139.2	140.9	141.2	140.1	138.6
Tires	189.3	191.7	190.1	192.3	192.8	191.8	189.5	191.5	195.5	193.7	196.0	196.4	195.5	193.0
Other parts and equipment (12/77 = 100)	132.4	135.7	136.2	138.0	138.3	136.6	135.8	132.9	135.9	136.6	138.4	138.6	136.8	136.0
Other private transportation services	253.6	267.2	268.2	268.4	272.2	275.1	275.5	256.6	270.8	271.6	271.8	275.5	278.5	278.9
Automobile insurance	260.3	269.8	270.4	271.6	274.0	275.4	275.8	260.1	269.6	270.2	271.3	273.5	274.9	275.2
Automobile finance charges (12/77 = 100)	177.3	188.9	187.2	186.3	192.0	193.6	193.5	176.3	188.2	186.7	185.9	191.2	192.6	192.9
Automobile rental, registration, and other fees (12/77 = 100)	119.5	129.7	133.3	133.3	133.3	137.4	138.0	119.5	130.1	133.7	133.7	133.8	138.4	138.8
State registration	147.9	168.5	174.2	174.2	174.3	183.6	183.8	148.0	167.8	173.8	173.8	173.9	183.2	183.4
Drivers' licenses (12/77 = 100)	106.2	122.9	123.0	127.7	127.7	132.8	132.8	105.9	123.0	123.0	127.9	127.9	133.1	133.1
Vehicle inspection (12/77 = 100)	128.7	129.3	129.0	126.7	126.7	128.5	128.5	129.4	130.6	130.4	128.3	128.3	129.9	129.9
Other vehicle-related fees (12/77 = 100)	140.0	145.3	149.5	149.2	149.3	151.0	151.9	145.8	152.5	156.4	156.2	156.3	158.7	158.4
Public	326.5	336.7	339.3	342.1	345.6	347.2	348.1	320.9	331.0	333.3	335.1	337.9	339.8	341.0
Airline fare	371.4	379.0	382.7	388.9	396.0	397.4	397.5	370.0	376.3	379.8	385.2	392.4	393.2	393.5
Intercity bus fare	347.5	365.6	367.0	366.0	363.7	368.3	370.5	347.3	367.0	368.7	367.5	365.4	370.6	372.3
Intracity mass transit	294.0	306.6	308.1	308.3	309.2	311.0	312.8	293.9	305.7	307.2	307.1	307.9	310.3	312.3
Taxi fare	288.1	297.2	297.6	297.6	298.0	299.3	299.7	296.7	306.6	307.3	307.2	307.6	308.7	309.3
Intercity train fare	304.6	314.1	332.1	337.9	338.2	338.4	338.6	305.0	314.5	332.1	337.9	338.2	338.4	338.6
MEDICAL CARE	299.3	318.8	321.7	323.8	326.4	330.0	333.3	298.6	317.4	320.2	322.3	324.8	328.1	331.3
Medical care commodities	189.4	200.0	202.4	204.1	205.6	206.5	208.2	190.6	200.6	203.0	204.8	206.3	207.1	208.8
Prescription drugs	175.4	186.1	188.8	190.4	191.8	193.4	195.6	176.5	187.0	189.7	191.4	192.7	194.4	196.6
Anti-infective drugs (12/77 = 100)	134.8	139.3	140.9	142.5	143.3	144.2	146.0	137.0	141.1	142.5	144.1	145.1	146.0	147.5
Tranquilizers and sedatives (12/77 = 100)	139.6	148.6	152.0	153.8	154.9	156.1	157.6	138.8	148.3	151.8	153.8	154.7	155.8	157.4
Circulatories and diuretics (12/77 = 100)	127.6	135.7	136.7	137.0	138.4	139.3	140.7	128.6	135.6	136.6	136.8	138.2	139.1	140.6
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	160.4	170.8	173.3	175.4	177.2	179.6	181.6	160.3	172.0	174.6	176.9	178.6	181.1	183.1
Pain and symptom control drugs (12/77 = 100)	140.2	150.8	153.1	153.7	154.6	155.4	157.6	142.7	152.3	154.6	155.2	156.0	157.1	159.3
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	133.1	142.7	144.7	145.9	146.3	147.9	149.6	133.9	142.7	144.8	146.0	145.4	148.1	149.8
Nonprescription drugs and medical supplies (12/77 = 100)	135.6	142.5	143.9	145.1	146.3	146.4	147.2	136.7	143.2	144.6	145.9	147.1	147.1	147.9
Eyeglasses (12/77 = 100)	126.3	129.5	130.1	130.9	131.6	131.6	131.6	125.3	128.1	129.7	129.7	130.4	130.4	130.3
Internal and respiratory over-the-counter drugs	215.5	228.1	231.1	233.4	235.2	234.9	236.6	217.5	229.6	232.5	235.0	236.8	236.2	237.9
Nonprescription medical equipment and supplies (12/77 = 100)	130.4	138.1	138.9	139.5	141.1	142.2	142.9	132.3	138.8	139.7	140.4	142.0	143.2	144.2
Medical care services	323.4	345.1	348.0	350.2	353.0	357.3	361.0	322.1	343.0	345.8	348.0	350.7	354.7	358.3
Professional services	282.9	295.8	297.8	299.2	301.2	302.8	304.4	282.7	295.9	297.9	299.3	301.3	302.9	304.6
Physicians' services	302.7	320.3	322.2	324.0	326.4	328.7	330.4	306.7	323.2	325.2	327.0	329.4	331.6	333.5
Dental services	269.9	278.6	281.1	282.1	283.9	284.8	286.4	266.6	278.6	279.2	280.3	282.1	282.9	284.4
Other professional services (12/77 = 100)	137.3	142.4	142.5	143.4	143.8	144.8	145.6	133.6	139.4	139.4	140.2	140.7	141.5	142.5
Other medical care services	372.5	404.7	406.7	411.9	415.7	423.2	429.4	370.6	401.6	405.4	408.5	412.1	418.4	425.4
Hospital and other medical services (12/77 = 100)	154.7	168.5	169.8	170.6	171.6	174.7	177.1	153.1	166.9	168.3	169.1	170.0	172.9	175.2
Hospital room	489.4	538.5	542.2	543.8	546.8	557.8	565.5	482.6	531.0	535.2	536.7	539.4	549.7	557.6
Other hospital and medical care services (12/77 = 100)	152.9	165.2	166.4	167.6	168.5	171.2	173.6	151.8	164.2	165.5	166.6	167.5	170.0	172.2

18. Continued—Consumer Price Index—U.S. city average

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Aug.	Mar.	Apr.	May.	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
ENTERTAINMENT	222.3	232.8	233.9	234.4	235.6	236.6	237.4	219.9	229.5	230.5	231.1	232.3	233.5	233.9
Entertainment commodities	226.5	236.6	238.0	238.8	239.6	241.1	240.5	222.2	230.8	232.0	232.8	233.8	235.5	234.4
Reading materials (12/77 = 100)	136.0	146.1	146.8	148.5	149.4	150.4	149.4	135.9	145.3	146.1	147.7	148.6	149.7	148.9
Newspapers	265.0	278.4	280.1	281.6	283.9	285.9	286.3	265.4	276.0	279.7	281.2	283.4	285.6	286.0
Magazines, periodicals, and books (12/77 = 100)	137.2	152.4	151.6	154.4	155.0	156.1	153.8	137.1	152.2	151.4	154.2	154.8	156.0	153.6
Sporting goods and equipment (12/77 = 100)	127.2	132.3	132.9	132.8	132.7	132.8	133.2	120.8	124.3	124.7	124.9	125.3	125.7	124.9
Sport vehicles (12/77 = 100)	128.6	135.4	136.1	135.4	135.7	135.4	135.7	118.3	122.5	122.8	122.6	123.9	124.1	122.4
Indoor and warm weather sport equipment (12/77 = 100)	118.2	119.9	120.4	121.0	119.6	120.3	119.7	116.7	118.1	118.6	119.2	117.1	118.0	117.5
Bicycles	192.2	197.6	198.9	199.4	197.6	198.3	199.4	193.5	198.9	200.2	200.7	198.8	199.4	200.4
Other sporting goods and equipment (12/77 = 100)	124.1	125.6	126.3	127.6	127.9	129.4	130.3	124.9	126.0	126.5	127.9	128.3	129.8	130.9
Toys, hobbies, and other entertainment (12/77 = 100)	130.5	134.5	135.4	135.5	136.1	137.3	136.9	129.6	133.5	134.3	134.4	134.9	136.1	135.7
Toys, hobbies, and music equipment (12/77 = 100)	129.3	133.4	134.1	134.8	135.9	137.2	136.4	128.6	130.2	130.7	131.4	132.4	133.7	132.8
Photographic supplies and equipment (12/77 = 100)	126.0	128.3	129.8	130.0	130.3	130.8	130.2	127.1	129.5	131.0	131.2	131.5	131.9	131.4
Pet supplies and expenses (12/77 = 100)	136.2	140.8	141.9	141.0	140.6	142.0	142.5	136.6	141.7	142.7	141.8	141.5	143.0	143.6
Entertainment services	216.7	227.8	228.5	228.7	230.5	230.8	233.5	217.0	228.4	229.2	229.2	230.9	231.3	234.2
Fees for participant sports (12/77 = 100)	132.0	141.9	142.0	141.6	142.5	141.8	143.4	132.4	143.5	143.7	142.9	143.8	c143.0	144.8
Admissions (12/77 = 100)	128.1	131.2	132.2	133.0	133.5	135.5	137.4	126.9	130.3	131.2	132.1	132.6	134.6	136.5
Other entertainment services (12/77 = 100)	121.7	125.1	125.2	125.7	127.9	127.8	128.3	123.1	125.9	125.9	126.4	128.7	128.8	129.2
OTHER GOODS AND SERVICES	235.6	252.2	253.8	255.0	255.8	257.2	258.3	233.5	249.3	250.9	252.4	253.1	254.5	255.7
Tobacco products	219.9	234.1	235.1	237.4	237.8	239.2	240.1	218.1	233.2	234.0	236.6	237.0	238.3	239.3
Cigarettes	222.2	237.3	238.0	240.4	240.7	242.2	243.1	221.4	236.3	236.9	239.6	239.9	241.3	242.3
Other tobacco products and smoking accessories (12/77 = 100)	132.9	138.1	139.9	141.0	141.8	142.1	142.4	133.9	138.2	140.1	141.1	142.0	142.2	142.5
Personal care	235.1	243.7	245.9	246.5	247.8	249.4	250.6	232.4	241.8	244.1	244.7	246.0	247.5	248.8
Toilet goods and personal care appliances	230.1	240.6	243.8	244.5	246.3	247.7	249.5	229.4	241.5	244.7	245.4	247.0	248.6	250.5
Products for the hair, hairpieces, and wigs (12/77 = 100)	134.1	140.8	142.9	142.1	143.2	145.0	145.0	132.5	140.0	142.3	141.7	142.6	144.2	144.4
Dental and shaving products (12/77 = 100)	140.0	148.0	149.0	150.1	150.5	150.9	153.1	137.6	146.6	147.6	148.6	148.9	149.5	151.6
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	128.9	135.1	136.5	137.6	139.6	139.9	141.3	128.9	136.1	137.5	138.5	140.1	140.5	142.0
Other toilet goods and small personal care appliances (12/77 = 100)	133.9	137.4	140.3	140.5	140.8	141.8	142.5	136.4	140.7	143.5	144.0	144.4	145.4	146.2
Personal care services	240.3	247.3	248.7	249.2	250.1	251.8	252.5	235.7	242.6	244.0	244.4	245.4	246.9	247.6
Beauty parlor services for women	241.9	248.9	250.7	251.3	252.3	254.4	255.0	235.7	242.5	244.3	245.0	245.9	247.9	248.7
Haircuts and other barber shop services for men (12/77 = 100)	134.4	138.4	138.8	138.9	139.4	139.8	140.2	133.3	137.2	137.6	137.7	138.2	138.5	139.0
Personal and educational expenses	260.4	290.4	291.9	292.8	293.3	294.5	295.8	261.7	291.7	293.5	294.6	295.2	296.4	297.9
Schoolbooks and supplies	231.4	263.3	263.8	264.2	264.6	264.8	265.3	235.2	267.5	268.0	268.4	268.8	269.0	269.6
Personal and educational services	267.2	297.1	298.7	298.8	300.3	301.7	303.1	268.4	298.0	300.0	301.4	302.0	303.4	305.1
Tuition and other school fees	134.2	151.1	151.4	151.4	151.5	152.0	152.6	134.7	151.7	152.0	152.0	152.1	152.5	153.2
College tuition (12/77 = 100)	133.2	150.7	151.0	151.0	151.2	151.8	151.9	133.1	150.9	151.3	151.3	151.4	152.0	152.0
Elementary and high school tuition (12/77 = 100)	137.8	152.2	152.2	152.2	152.2	152.2	154.6	138.7	152.9	152.9	152.9	152.9	152.9	155.6
Personal expenses (12/77 = 100)	148.7	157.4	160.9	163.6	164.5	166.0	167.4	147.6	156.7	160.5	163.6	164.6	166.1	167.6
Special indexes:														
Gasoline, motor oil, coolant, and other products	405.9	379.3	382.6	386.1	387.3	395.0	393.2	406.9	380.6	383.7	387.2	388.6	396.2	394.4
Insurance and finance	408.1	420.9	426.3	431.5	436.5	439.1	441.3	407.3	419.9	425.9	430.9	436.0	438.8	441.7
Utilities and public transportation	289.7	302.7	305.1	311.0	316.6	318.7	320.3	288.5	301.5	304.0	309.8	315.6	317.8	319.4
Housekeeping and home maintenance services	334.0	344.0	347.5	349.8	351.2	350.3	351.4	333.0	344.0	348.2	350.4	351.8	351.0	352.2

c= corrected.

19. Consumer Price Index for All Urban Consumers: Cross classification of region and population size class by expenditure category and commodity and service group

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000-1.250 million)			Size class C (75,000-385,000)			Size class D (75,000 or less)		
	1982			1982			1982			1982		
	Apr.	June	Aug.	Apr.	June	Aug.	Apr.	June	Aug.	Apr.	June	Aug.
	Northeast											
EXPENDITURE CATEGORY												
All items	143.6	147.7	149.0	150.0	155.5	155.8	158.6	163.5	161.2	151.9	156.9	155.3
Food and beverages	143.7	145.9	144.9	142.2	144.1	143.4	147.4	148.8	148.9	140.4	142.9	142.9
Housing	144.5	151.6	153.3	155.3	165.2	164.5	173.3	182.1	174.5	160.5	169.3	163.7
Apparel and upkeep	119.1	118.6	119.6	122.5	122.8	122.4	127.4	128.3	128.4	125.1	123.4	124.8
Transportation	153.7	157.2	159.4	160.0	164.6	166.5	158.6	162.2	164.7	158.1	161.2	163.7
Medical care	146.4	147.5	150.0	148.9	150.2	156.1	150.4	152.7	157.2	151.5	155.4	156.1
Entertainment	135.5	136.5	139.7	136.2	137.5	137.4	135.8	136.4	136.8	139.0	141.1	143.8
Other goods and services	139.0	139.8	141.7	141.1	142.1	143.2	145.3	146.7	148.1	142.9	144.0	144.6
COMMODITY AND SERVICE GROUP												
Commodities	140.8	144.6	145.3	146.6	151.5	151.6	149.6	153.8	152.3	146.5	150.6	149.8
Commodities less food and beverages	139.0	143.8	145.5	148.7	155.1	155.6	150.6	156.2	153.9	149.4	154.3	153.1
Services	147.4	151.8	153.8	155.4	161.9	162.4	173.4	179.1	175.6	160.4	166.8	163.8
	North Central Region											
EXPENDITURE CATEGORY												
All items	155.2	159.6	162.2	155.1	155.3	157.0	151.2	155.2	158.9	153.3	156.4	160.2
Food and beverages	141.9	144.1	143.7	141.7	142.8	142.7	143.1	145.0	144.9	146.2	148.7	149.2
Housing	168.8	175.1	179.8	167.2	163.3	165.6	157.2	162.1	169.4	160.7	164.0	171.4
Apparel and upkeep	114.8	114.0	117.0	122.7	123.0	124.1	125.8	124.7	126.7	123.5	120.5	120.1
Transportation	158.7	165.1	166.1	156.9	163.2	165.0	158.4	165.7	166.7	157.2	163.1	164.1
Medical care	150.9	153.0	155.8	152.8	155.2	161.2	153.8	155.6	157.7	157.0	158.3	161.0
Entertainment	137.0	137.1	138.8	130.3	129.5	131.7	138.1	139.2	139.9	130.9	131.5	131.4
Other goods and services	140.3	141.4	142.3	146.5	152.5	153.3	139.0	141.2	142.8	146.4	148.3	150.2
COMMODITY AND SERVICE GROUP												
Commodities	145.4	149.4	150.9	146.4	148.5	148.8	144.3	148.8	150.8	143.7	147.9	149.1
Commodities less food and beverages	147.0	151.9	154.2	148.3	150.9	151.3	144.8	150.5	153.4	142.6	147.6	149.0
Services	169.8	174.8	179.0	169.3	166.2	170.3	162.4	165.6	172.0	168.7	169.8	177.8
	South											
EXPENDITURE CATEGORY												
All items	152.9	156.3	156.9	155.7	158.4	159.1	152.3	157.6	158.6	153.5	156.5	158.8
Food and beverages	145.0	146.7	147.2	144.9	146.9	146.5	144.0	146.0	146.0	145.9	147.7	147.5
Housing	161.1	165.2	165.0	165.2	167.2	167.9	159.1	167.0	167.8	161.5	164.8	168.4
Apparel and upkeep	125.6	124.9	124.0	124.3	123.6	122.6	120.2	118.6	121.0	111.1	109.4	107.9
Transportation	157.5	163.4	165.3	159.7	167.0	168.6	157.1	165.1	166.4	155.8	163.3	165.6
Medical care	149.5	152.8	156.2	152.3	154.5	157.3	160.1	162.5	166.2	165.1	166.6	169.3
Entertainment	130.1	132.0	131.7	141.2	143.1	145.0	141.1	142.7	142.1	145.7	145.2	148.1
Other goods and services	142.8	144.1	145.6	142.4	143.3	143.6	143.7	144.5	145.2	150.2	150.4	152.3
COMMODITY AND SERVICE GROUP												
Commodities	146.3	149.1	149.7	147.6	150.9	150.9	144.3	149.2	149.6	146.0	149.7	149.6
Commodities less food and beverages	146.9	150.1	150.8	148.8	152.6	152.8	144.5	150.6	151.2	146.0	150.5	150.5
Services	162.1	166.5	166.9	167.8	169.8	171.5	164.5	170.6	172.4	164.8	166.8	172.6
	West											
EXPENDITURE CATEGORY												
All items	158.5	160.8	160.3	157.0	158.6	159.9	151.1	149.7	153.3	157.9	159.9	158.5
Food and beverages	144.5	146.4	147.5	147.6	148.9	148.6	143.5	145.1	144.9	148.5	149.9	150.6
Housing	168.1	170.1	167.7	164.8	165.6	166.6	156.3	150.3	155.6	163.5	165.5	160.5
Apparel and upkeep	120.6	120.0	119.8	126.6	125.2	124.9	119.7	122.3	122.8	140.4	140.5	138.5
Transportation	162.9	167.7	169.9	161.7	165.8	169.7	158.3	163.5	167.0	160.5	162.8	166.2
Medical care	160.7	164.4	167.1	156.0	159.5	163.3	157.3	159.6	167.0	162.4	166.2	168.5
Entertainment	137.7	138.5	135.8	136.8	139.4	141.0	133.9	134.2	135.7	148.9	150.6	153.1
Other goods and services	147.5	147.0	149.3	148.9	149.1	149.8	139.5	139.9	141.7	148.8	153.3	154.4
COMMODITY AND SERVICE GROUP												
Commodities	145.5	147.8	148.8	148.1	149.5	151.0	146.4	147.5	149.9	148.9	151.3	149.2
Commodities less food and beverages	145.9	148.4	149.4	148.3	149.7	152.1	147.5	148.5	152.0	149.1	152.0	148.7
Services	175.9	178.1	175.5	169.3	171.1	172.1	157.9	152.8	158.1	171.2	172.5	172.1

20. Consumer Price Index—U.S. city average, and selected areas

[1967 = 100 unless otherwise specified]

Area[1]	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
U.S. city average[2]	276.5	283.1	284.3	287.1	290.6	292.2	292.8	276.5	282.5	283.7	286.5	290.1	291.8	292.4
Anchorage, Alaska (10/67=100)	...	280.0	...	263.8	...	263.6	...	...	254.5	...	258.0	...	259.1	...
Atlanta, Ga.	276.1	...	280.2	...	291.1	...	295.6	278.1	...	282.9	...	282.9	...	297.1
Baltimore, Md.	...	281.9	...	283.6	...	286.1	...	...	282.2	...	283.7	...	287.0	...
Boston, Mass.	...	269.8	...	272.5	...	279.2	...	...	269.8	...	272.0	...	278.7	...
Buffalo, N.Y.	260.3	...	258.3	...	265.8	...	267.7	259.4	...	258.4	...	264.1	...	265.5
Chicago, Ill.-Northwestern Ind.	275.8	276.4	280.2	287.7	291.8	293.1	293.2	274.6	276.5	280.0	287.0	291.5	292.7	292.5
Cincinnati, Ohio-Ky.-Ind.	...	284.9	...	288.7	...	293.3	...	...	287.2	...	291.2	...	295.9	...
Cleveland, Ohio	284.4	...	286.5	...	297.8	...	312.2	283.0	...	285.7	...	297.0	...	310.6
Dallas-Ft. Worth, Tex.	288.2	...	297.2	...	304.8	...	304.3	285.1	...	292.7	...	300.5	...	300.2
Denver-Boulder, Colo.	...	309.2	...	313.4	...	319.9	...	...	315.0	...	319.5	...	326.3	...
Detroit, Mich.	283.5	278.2	283.7	285.9	289.1	292.4	292.7	279.1	275.1	280.3	282.7	286.0	289.3	289.3
Honolulu, Hawaii	256.6	...	263.8	...	269.5	...	269.9	256.6	...	264.7	...	269.5	...	270.1
Houston, Tex.	294.7	...	304.9	...	313.9	...	318.6	291.8	...	302.1	...	310.9	...	315.3
Kansas City, Mo.-Kansas	271.3	...	274.0	...	281.6	...	285.0	270.2	...	272.1	...	280.1	...	283.6
Los Angeles-Long Beach, Anaheim, Calif.	274.8	286.6	286.8	287.1	290.1	289.3	289.1	278.6	290.4	290.5	290.6	293.9	293.0	292.8
Miami, Fla. (11/77=100)	...	155.1	...	155.7	...	155.1	...	...	156.4	...	157.0	...	156.9	...
Milwaukee, Wis.	...	289.3	...	292.9	...	296.5	...	...	292.5	...	296.0	...	299.6	...
Minneapolis-St. Paul, Minn.-Wis.	286.6	...	301.7	...	304.1	...	313.8	287.0	...	301.2	...	303.8	...	313.3
New York, N.Y.-Northeastern N.J.	264.8	267.4	268.2	270.9	276.7	277.3	278.5	264.0	265.9	266.5	269.4	275.3	276.1	277.1
Northeast, Pa. (Scranton)	...	267.2	...	270.2	...	275.1	...	...	268.4	...	272.1	...	277.3	...
Philadelphia, Pa.-N.J.	270.5	274.7	275.1	275.1	279.7	281.1	281.3	271.6	274.3	274.5	274.7	279.1	280.9	280.7
Pittsburgh, Pa.	277.7	...	275.3	...	285.1	...	291.4	278.1	...	276.7	...	285.9	...	291.8
Portland, Oreg.-Wash.	...	286.7	...	282.1	...	292.5	...	...	283.9	...	279.7	...	290.6	...
St. Louis, Mo.-Ill.	...	280.7	...	285.7	...	290.2	...	...	279.3	...	284.5	...	289.2	...
San Diego, Calif.	...	319.0	...	329.2	...	334.8	...	...	313.9	...	323.3	...	329.4	...
San Francisco-Oakland, Calif.	287.9	...	298.8	...	304.6	...	304.3	287.2	...	297.8	...	303.4	...	302.8
Seattle-Everett, Wash.	...	293.4	...	301.2	...	296.6	...	...	289.6	...	297.1	...	292.9	...
Washington, D.C.-Md.-Va.	...	278.8	...	278.4	...	281.3	...	...	283.8	...	283.3	...	286.3	...

[1] The areas listed include not only the central city but the entire portion of the Standard Metropolitan Statistical Area, as defined for the 1970 Census of Population, except that the Standard Consolidated Area is used for New York and Chicago.

[2] Average of 85 cities.

21. Producer Price Indexes, by stage of processing

[1967=100]

Commodity grouping	Annual average 1981	1981				1982								
		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May [1]	June	July	Aug.	Sept.
FINISHED GOODS														
Finished goods	269.8	271.5	274.3	274.7	275.4	277.9	277.9	277.3	277.3	r277.8	278.9	281.7	282.4	281.4
Finished consumer goods	271.3	273.1	275.1	275.2	275.8	278.3	278.6	277.7	277.3	r277.7	280.0	282.0	282.7	282.0
Finished consumer foods	253.6	256.2	254.0	252.7	252.9	256.4	258.2	257.1	260.0	262.3	263.4	260.7	259.8	258.9
Crude	263.8	253.5	253.8	260.0	273.9	280.6	282.5	263.3	266.6	r258.9	254.3	240.6	238.6	227.8
Processed	250.6	254.4	252.0	249.9	249.0	252.1	254.0	254.5	257.3	r260.3	262.0	259.4	258.6	260.6
Nondurable goods less foods	319.6	324.2	324.3	325.4	326.3	329.3	330.3	328.8	325.7	r324.3	326.1	334.7	336.7	338.4
Durable goods	218.6	215.8	224.5	224.7	225.4	226.2	224.0	223.9	224.1	r225.0	226.2	227.0	227.7	223.2
Consumer nondurable goods less food and energy	208.8	211.8	212.6	213.6	213.9	217.4	219.6	220.5	222.3	r223.1	222.9	223.3	224.0	225.4
Capital equipment	264.3	265.3	271.5	273.0	274.1	276.2	275.0	275.8	277.2	r278.1	278.6	280.9	281.4	279.5
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	306.0	309.7	309.4	309.0	309.4	311.0	311.1	310.6	309.9	309.8	310.0	311.4	311.0	310.7
Materials and components for manufacturing	286.1	290.2	290.2	289.5	289.3	290.4	290.9	290.4	290.6	r291.4	290.0	289.6	289.1	290.2
Materials for food manufacturing	260.4	254.6	250.9	246.8	245.6	250.7	252.8	252.0	254.4	260.0	260.9	260.0	258.3	257.6
Materials for nondurable manufacturing	285.8	291.2	290.9	289.4	288.8	289.0	289.3	288.8	287.6	r287.6	285.8	283.6	282.9	282.4
Materials for durable manufacturing	312.1	317.1	316.7	314.9	314.0	313.6	313.1	310.9	311.0	r311.0	307.3	308.2	307.2	310.2
Components for manufacturing	259.3	263.8	265.1	266.9	267.8	269.8	270.9	271.8	272.6	r273.6	273.9	274.2	274.6	276.1
Materials and components for construction	287.6	290.0	290.1	290.2	291.1	292.0	293.0	293.3	294.0	r293.7	294.2	294.0	293.3	293.4
Processed fuels and lubricants	585.4	601.4	596.9	595.1	598.1	604.4	596.8	593.0	579.9	r570.0	581.2	601.6	603.8	593.2
Manufacturing industries	498.6	500.5	497.5	496.4	499.0	505.9	497.8	496.1	487.5	r481.4	492.0	508.4	511.0	497.4
Nonmanufacturing industries	680.8	690.5	684.7	682.2	685.6	691.3	684.2	678.3	661.1	r649.5	659.3	683.4	685.2	677.5
Containers	276.1	280.6	280.9	280.6	280.2	282.5	285.5	286.3	287.0	r287.0	286.7	286.4	285.6	285.5
Supplies	263.8	266.1	266.6	267.2	268.3	269.8	270.4	270.6	272.1	r273.4	273.6	273.5	272.9	272.5
Manufacturing industries	253.1	256.8	258.2	259.2	261.0	262.6	263.3	264.5	265.3	r266.7	267.3	267.3	267.1	267.3
Nonmanufacturing industries	269.6	271.1	271.2	271.6	272.4	273.8	274.4	274.1	276.0	277.2	277.1	277.0	276.2	275.5
Feeds	230.4	221.3	215.9	212.0	214.6	214.8	212.0	208.1	213.1	214.2	213.1	211.1	203.7	198.4
Other supplies	276.4	280.7	282.3	283.7	284.1	285.7	287.3	287.9	288.9	r290.1	290.4	290.7	291.3	291.5
CRUDE MATERIALS														
Crude materials for further processing	329.0	327.4	319.9	313.9	311.5	318.4	321.6	320.0	322.6	r328.3	325.7	323.4	320.5	316.3
Foodstuffs and feedstuffs	257.4	253.4	245.7	238.3	233.7	242.6	248.3	247.9	254.4	r262.6	258.8	255.5	250.7	242.9
Nonfood materials	482.3	486.0	479.2	476.3	478.6	481.5	479.3	475.2	469.9	r470.2	467.9	470.0	471.1	474.3
Nonfood materials except fuel	413.7	410.2	404.1	397.8	396.2	399.5	394.8	387.1	378.8	376.6	370.0	369.1	368.6	369.6
Manufacturing industries	429.4	425.4	418.6	411.7	409.8	413.2	407.5	398.4	389.0	r386.3	378.9	378.4	378.9	379.1
Construction	261.8	263.6	264.7	264.8	265.2	267.6	270.5	273.2	273.3	r274.5	273.7	270.4	270.7	280.1
Crude fuel	751.2	788.7	779.0	792.5	813.0	812.9	824.5	839.7	851.2	r864.8	885.2	903.1	906.9	926.3
Manufacturing industries	864.9	911.4	898.4	915.8	942.5	940.3	954.4	974.7	989.1	r1006.7	1,033.6	1,056.0	1,080.9	1,086.1
Nonmanufacturing industries	674.0	704.8	697.8	708.2	724.0	725.6	735.4	745.6	755.8	r766.4	781.7	796.0	798.9	813.9
SPECIAL GROUPINGS														
Finished goods excluding foods	273.3	274.7	279.1	280.0	280.9	283.0	282.4	281.9	281.1	r281.0	283.4	286.7	287.9	286.6
Finished consumer goods excluding foods	276.5	277.9	281.6	282.4	283.2	285.2	284.9	284.0	282.3	r281.8	284.6	288.7	290.1	289.1
Finished consumer goods less energy	233.6	234.9	237.2	237.2	237.6	240.5	241.3	241.3	243.0	r244.3	244.9	244.5	244.7	243.8
Intermediate materials less foods and feeds	310.1	314.6	314.6	314.5	314.9	316.4	316.4	316.0	315.1	314.6	314.8	316.4	316.3	316.0
Intermediate materials less energy	285.2	288.7	288.8	288.5	288.7	289.9	290.7	290.5	291.0	r291.6	290.9	290.6	290.0	290.6
Intermediate foods and feeds	250.3	243.5	239.3	235.2	235.2	238.9	239.4	237.7	240.9	245.0	245.3	244.1	240.6	238.4
Crude materials less agricultural products	545.6	551.4	543.4	540.7	543.5	546.1	543.9	538.4	531.6	r531.5	529.4	531.8	532.2	536.2
Crude materials less energy	254.0	250.4	243.2	235.8	231.6	239.1	243.4	242.8	247.3	r252.8	248.6	245.0	241.5	235.6

[1] Data for May 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r=revised.

22. Producer Price indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981				1982								
			Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May[1]	June	July	Aug.	Sept.
	All commodities	293.4	295.7	296.1	295.5	295.8	298.3	298.6	298.0	298.0	298.6	299.4	300.6	300.4	299.5
	All commodities (1957-59 = 100)	311.3	313.7	314.2	313.5	313.8	316.5	316.8	316.2	316.2	316.8	317.7	318.9	318.7	317.8
	Farm products and processed foods and feeds	251.5	250.3	246.0	242.5	241.0	248.0	248.4	247.5	251.6	r255.8	255.3	252.5	250.1	247.5
	Industrial commodities	304.1	307.4	309.0	309.3	310.0	311.8	311.6	311.0	309.9	r309.6	310.7	313.0	313.4	312.9
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	254.9	251.1	243.1	237.4	234.8	242.2	247.1	244.7	250.6	r256.5	252.7	246.5	242.0	234.4
01-1	Fresh and dried fruits and vegetables	267.3	252.8	248.8	254.0	280.5	289.2	290.1	257.3	267.6	r271.5	263.8	238.4	237.7	220.3
01-2	Grains	248.4	227.0	227.6	226.5	213.6	225.2	223.2	220.9	226.0	226.2	225.7	212.8	197.2	187.3
01-3	Livestock	248.0	257.3	244.5	231.1	225.0	236.8	251.2	255.6	267.6	282.9	277.5	270.3	268.4	250.0
01-4	Live poultry	201.2	196.7	185.7	175.0	171.4	186.8	197.3	197.7	186.2	192.7	207.2	212.5	189.3	196.5
01-5	Plant and animal fibers	242.0	206.5	211.7	198.5	188.4	198.2	193.5	199.5	207.4	214.1	203.1	220.8	207.5	196.8
01-6	Fluid milk	287.4	287.3	294.3	288.2	286.7	287.6	285.8	282.5	280.3	278.8	278.9	279.0	278.8	281.9
01-7	Eggs	187.1	193.2	193.8	209.7	195.5	187.0	200.6	204.0	192.1	184.3	150.3	171.7	171.7	173.3
01-8	Hay, hayseeds, and oilseeds	274.1	267.2	230.4	221.1	218.8	218.4	217.6	213.7	222.8	r227.3	219.3	220.0	218.1	201.8
01-9	Other farm products	273.8	268.9	263.3	273.1	280.2	280.1	273.7	273.0	274.2	273.9	271.8	265.5	274.4	276.8
02	Processed foods and feeds	248.7	248.9	246.6	244.3	243.6	247.1	248.1	248.1	251.1	254.4	255.8	254.8	253.6	253.6
02-1	Cereal and bakery products	255.5	258.5	256.9	256.5	255.1	256.6	253.3	253.3	253.5	r252.8	253.3	253.6	253.2	254.1
02-2	Meats, poultry, and fish	246.2	253.3	246.6	240.0	236.1	243.7	247.9	250.0	258.2	r267.6	271.1	266.1	262.3	265.7
02-3	Dairy products	245.6	245.5	246.8	246.9	247.2	247.7	248.0	248.0	248.4	248.5	248.7	248.8	249.0	249.3
02-4	Processed fruits and vegetables	261.2	270.0	271.7	270.5	271.8	273.2	276.3	275.9	275.2	r273.8	275.4	275.9	274.9	273.2
02-5	Sugar and confectionery	275.9	246.8	246.7	244.1	247.6	256.8	257.2	255.0	256.0	r265.3	269.5	276.1	286.0	278.1
02-6	Beverages and beverage materials	248.0	249.1	250.0	251.4	251.9	253.9	255.1	256.4	256.6	r256.5	258.5	256.7	257.3	256.8
02-7	Fats and oils	227.4	224.3	223.4	221.5	219.1	216.6	216.8	213.7	218.1	r222.3	222.0	221.4	216.0	211.6
02-8	Miscellaneous processed foods	250.1	253.0	249.9	250.1	250.1	251.0	250.9	249.5	249.6	248.0	248.6	248.0	245.9	246.9
02-9	Prepared animal feeds	230.2	222.9	218.1	214.7	217.2	217.4	214.9	211.4	216.3	217.4	216.4	214.6	207.9	204.5
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	199.7	202.9	204.0	203.6	203.4	205.0	205.6	205.0	205.4	r205.4	204.5	204.1	203.9	203.8
03-1	Synthetic fibers (12/75 = 100)	156.3	161.0	162.7	161.6	161.5	162.9	163.2	161.3	163.0	r163.4	163.8	162.4	163.1	163.4
03-2	Processed yarns and threads (12/75 = 100)	138.0	142.3	144.4	140.3	139.6	139.2	140.7	140.5	140.4	141.0	139.4	139.2	135.9	136.6
03-3	Gray fabrics (12/75 = 100)	146.8	149.1	148.0	147.4	147.2	148.2	147.3	146.6	146.3	r145.9	145.8	144.8	144.5	143.5
03-4	Finished fabrics (12/75 = 100)	125.2	126.8	126.7	126.5	125.6	126.8	127.1	125.6	125.4	r125.2	124.0	123.8	124.4	123.8
03-81	Apparel	186.0	188.0	189.9	190.8	191.0	192.7	193.2	193.4	194.1	r194.5	193.0	193.1	193.5	193.5
03-82	Textile housefurnishings	226.7	232.2	233.0	233.4	233.6	237.6	240.8	241.4	241.8	r239.5	244.4	243.0	240.7	242.5
04	Hides, skins, leather, and related products	260.9	261.7	260.0	259.8	260.7	261.8	261.6	260.6	263.4	r263.2	262.7	261.3	263.2	264.8
04-2	Leather	319.8	313.2	313.7	311.3	312.3	319.0	317.7	313.3	310.6	r300.8	306.7	307.4	304.7	309.2
04-3	Footwear	240.9	242.9	239.6	239.8	240.1	238.9	238.6	239.8	244.8	r244.5	243.8	241.7	247.3	248.2
04-4	Other leather and related products	241.8	245.0	245.0	245.4	245.4	247.5	248.1	248.1	248.1	r248.1	250.5	252.0	249.9	252.9
05	Fuels and related products and power	694.5	703.5	698.1	698.1	702.5	705.1	697.8	689.7	670.6	r662.2	677.4	701.8	705.7	701.8
05-1	Coal	497.2	510.2	510.8	512.7	515.2	525.3	529.9	529.6	532.6	r534.0	534.1	538.6	539.1	541.4
05-2	Coke	456.4	469.7	469.7	469.7	469.7	469.7	469.7	467.5	467.5	r467.5	462.7	463.9	460.0	460.7
05-3	Gas fuels[2]	939.4	976.6	965.6	983.0	1,003.7	987.9	987.6	990.5	992.7	r1,001.2	1,029.7	1,055.4	1,073.7	1,116.6
05-4	Electric power	367.2	383.8	378.4	378.3	384.2	392.8	392.9	403.7	406.3	r407.1	406.6	416.9	415.3	415.4
05-61	Crude petroleum[3]	803.5	796.8	788.2	785.9	787.2	787.2	770.3	744.8	717.9	r717.8	718.5	718.7	718.7	718.8
05-7	Petroleum products, refined[4]	805.9	806.1	802.3	798.3	798.6	801.9	788.7	770.6	733.5	r713.2	738.5	777.1	781.8	763.1
06	Chemicals and allied products	287.6	283.3	282.4	282.0	281.8	282.9	283.6	284.6	284.3	r285.0	283.5	281.6	281.6	281.4
06-1	Industrial chemicals[5]	363.3	371.8	367.9	363.7	362.8	362.9	362.2	361.4	357.8	r357.1	352.9	349.7	349.7	349.3
06-21	Prepared paint	249.8	250.7	250.7	254.5	256.4	258.9	258.9	258.9	258.9	r264.7	265.1	265.1	265.1	265.1
06-22	Paint materials	300.1	308.0	308.1	308.3	305.8	306.6	306.4	306.8	306.7	r306.9	304.2	304.3	302.3	303.0
06-3	Drugs and pharmaceuticals	193.5	197.8	198.5	198.2	198.9	202.2	204.4	205.9	208.9	r209.9	209.6	209.9	211.1	212.6
06-4	Fats and oils, inedible	295.6	285.6	277.7	282.5	280.4	272.8	274.2	290.1	282.6	288.4	287.5	278.2	254.2	254.1
06-5	Agricultural chemicals and chemical products	285.0	292.6	293.1	295.7	294.9	296.8	298.0	297.1	295.8	r294.8	294.0	291.5	290.6	290.1
06-6	Plastic resins and materials	289.2	296.8	298.5	293.2	294.2	296.1	287.3	285.5	286.0	r283.2	281.9	280.6	282.4	281.5
06-7	Other chemicals and allied products	254.2	257.4	256.9	259.9	260.0	263.8	264.9	268.5	270.0	r272.7	273.0	270.7	271.8	270.7
07	Rubber and plastic products	232.6	235.7	237.3	238.0	238.3	237.3	239.3	240.8	241.1	r242.1	243.3	243.1	243.6	243.3
07-1	Rubber and rubber products	256.2	260.3	262.9	264.4	264.6	262.5	266.0	266.7	266.6	r269.0	271.5	271.6	272.5	271.7
07-11	Crude rubber	281.8	283.1	279.8	279.0	280.8	281.8	282.1	283.5	283.3	r283.7	282.4	280.2	278.6	276.5
07-12	Tires and tubes	250.6	256.5	257.1	255.9	255.4	253.6	256.7	253.7	253.4	r254.9	255.3	255.6	257.9	255.7
07-13	Miscellaneous rubber products	251.4	253.9	261.1	266.7	267.2	263.8	268.8	274.3	274.7	r278.8	285.4	286.1	286.0	287.5
07-2	Plastic products (6/78 = 100)	128.5	129.9	130.3	130.3	130.6	130.5	131.0	132.3	132.6	r132.5	132.6	132.3	132.3	132.5
08	Lumber and wood products	292.8	289.3	284.3	282.1	285.4	285.5	285.2	285.3	286.5	r284.6	288.7	289.3	284.4	283.0
08-1	Lumber	325.1	320.2	311.7	306.6	309.9	310.0	308.1	308.2	312.4	r310.5	315.2	319.2	312.7	311.3
08-2	Millwork	273.4	271.4	271.3	271.8	273.7	277.1	278.6	276.5	276.6	r276.3	280.1	281.8	280.2	279.5
08-3	Plywood	245.7	240.8	234.3	233.5	239.7	237.4	235.1	236.5	234.0	r230.5	236.9	232.4	229.3	228.4
08-4	Other wood products	239.1	240.5	239.9	238.3	239.4	238.2	238.7	238.6	237.7	r237.4	237.1	236.0	235.8	235.6

See footnotes at end of table.

22. Continued—Producer Price Indexes, by commodity groupings

[1967=100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981				1982								
			Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May[1]	June	July	Aug.	Sept.
	INDUSTRIAL COMMODITIES—Continued														
09	Pulp, paper, and allied products	273.8	277.8	279.2	280.4	281.0	285.5	286.3	287.4	288.5	r288.6	289.3	288.9	289.1	289.2
09-1	Pulp, paper, and products, excluding building paper and board	270.8	274.8	275.7	275.8	275.6	276.1	276.8	276.6	275.3	r274.8	274.6	272.9	272.6	271.8
09-11	Woodpulp	307.1	394.2	402.3	413.7	413.7	410.3	410.3	411.6	389.9	r383.3	380.3	370.5	369.2	367.2
09-12	Wastepaper	175.7	178.5	165.1	144.5	143.4	135.2	128.8	129.2	128.1	121.5	115.2	115.6	116.0	116.0
09-13	Paper	279.8	285.9	287.8	287.4	287.2	289.2	289.8	289.6	289.4	r288.2	288.2	287.0	286.1	286.0
09-14	Paperboard	258.1	261.6	261.7	261.6	260.0	259.7	261.4	261.1	261.2	259.8	255.9	255.0	255.5	250.7
09-15	Converted paper and paperboard products	258.8	262.8	263.2	263.1	263.2	263.9	264.7	264.5	264.3	r264.3	265.0	264.6	264.4	264.2
09-2	Building paper and board	231.7	234.2	233.3	232.1	230.3	233.8	231.4	239.6	236.3	r240.2	239.4	239.2	243.8	242.8
10	Metals and metal products	300.4	304.9	305.3	304.2	303.3	304.7	304.2	302.9	303.1	r302.8	300.1	300.2	300.2	301.8
10-1	Iron and steel	333.8	339.8	341.3	340.0	339.9	343.1	342.9	342.5	342.8	r341.3	338.3	337.4	337.4	336.6
10-17	Steel mill products	337.6	345.3	348.7	348.6	348.9	350.6	350.3	350.5	352.2	352.1	349.9	349.1	348.7	348.4
10-2	Nonferrous metals	285.8	289.4	285.4	281.1	277.1	274.4	273.6	267.2	266.1	r263.6	253.7	256.1	256.1	263.4
10-3	Metal containers	315.6	318.8	318.2	318.1	316.8	324.3	326.2	327.2	330.0	r330.2	330.2	329.9	328.8	328.7
10-4	Hardware	263.2	267.8	269.5	271.5	272.0	274.1	274.8	278.2	278.5	r278.9	277.9	278.9	280.3	280.4
10-5	Plumbing fixtures and brass fittings	267.5	271.6	272.9	273.1	274.0	274.6	276.4	279.1	280.3	281.0	282.5	283.0	274.7	277.0
10-6	Heating equipment	224.2	228.5	229.0	228.8	229.9	233.4	233.1	235.4	236.0	r237.2	238.6	239.1	238.6	239.3
10-7	Fabricated structural metal products	295.5	300.0	302.6	303.2	303.0	303.4	304.0	304.5	305.2	r304.9	305.2	303.8	304.4	304.2
10-8	Miscellaneous metal products	270.5	273.7	276.1	278.0	278.3	281.2	278.7	279.0	279.7	r284.5	280.5	280.8	280.9	280.3
11	Machinery and equipment	263.3	268.1	269.3	270.4	272.0	274.1	275.4	276.2	277.6	r278.2	278.4	279.4	279.7	280.3
11-1	Agricultural machinery and equipment	288.3	292.8	295.5	300.8	302.8	303.1	304.6	306.4	306.8	r308.2	308.8	310.2	311.4	313.6
11-2	Construction machinery and equipment	320.8	326.5	329.3	329.6	332.0	337.0	337.9	339.2	341.5	r343.5	343.7	346.1	346.4	347.5
11-3	Metalworking machinery and equipment	301.3	305.3	306.6	307.9	312.9	315.9	317.2	317.8	319.6	r320.7	320.8	321.9	322.4	322.6
11-4	General purpose machinery and equipment	288.7	293.9	295.1	296.2	297.9	300.0	301.3	302.0	303.4	r303.8	303.1	304.4	304.5	304.5
11-6	Special industry machinery and equipment	307.9	312.8	314.6	315.0	316.4	320.4	320.7	321.3	322.9	r323.9	324.7	327.1	326.9	327.0
11-7	Electrical machinery and equipment	220.2	224.2	225.3	226.0	227.0	228.7	229.5	230.3	231.7	r231.3	231.9	232.0	232.0	232.5
11-9	Miscellaneous machinery	252.6	258.5	259.0	259.8	260.4	261.4	264.0	264.9	266.1	r267.9	268.0	268.9	270.3	271.1
12	Furniture and household durables	198.5	201.0	201.3	202.1	202.9	203.5	204.6	205.5	206.0	r206.5	206.6	206.8	207.4	207.7
12-1	Household furniture	219.7	222.2	222.8	225.1	226.6	227.5	227.4	227.6	229.7	r230.0	231.1	230.9	231.4	231.6
12-2	Commercial furniture	257.5	261.6	262.1	263.3	263.9	266.7	271.2	273.6	274.2	r275.2	276.2	277.8	278.0	278.6
12-3	Floor coverings	178.7	181.7	180.9	182.3	181.4	180.3	180.6	180.6	181.1	r181.3	180.7	180.1	179.4	180.3
12-4	Household appliances	187.3	190.1	190.8	190.9	191.3	193.4	195.3	197.3	197.8	r198.9	198.5	199.3	200.1	200.4
12-5	Home electronic equipment	88.2	87.8	88.1	88.0	88.6	88.3	88.6	88.1	87.9	r88.0	88.2	88.2	88.0	87.7
12-6	Other household durable goods	281.0	285.8	285.8	285.3	286.2	283.4	283.7	285.0	285.9	r285.4	284.6	283.6	287.4	288.1
13	Nonmetallic mineral products	309.5	313.2	313.3	313.7	313.5	315.6	319.0	319.9	320.2	r321.2	318.7	320.3	320.4	320.2
13-11	Flat glass	212.6	218.3	218.5	218.5	216.1	216.2	216.2	216.2	216.2	r226.4	216.2	226.1	226.1	221.1
13-2	Concrete ingredients	296.3	298.5	298.4	298.5	298.7	306.2	308.4	309.8	309.5	r312.5	310.9	310.6	311.7	311.2
13-3	Concrete products	291.2	292.9	293.3	293.4	293.6	295.5	295.9	296.3	297.7	r298.2	297.9	298.2	298.3	298.6
13-4	Structural clay products, excluding refractories	249.8	255.3	256.2	256.5	257.5	257.5	257.7	257.7	258.1	r258.6	258.4	258.8	258.8	259.5
13-5	Refractories	302.4	307.1	307.8	308.9	311.3	316.8	335.1	337.4	338.7	r338.5	340.9	340.9	341.2	341.3
13-6	Asphalt roofing	407.5	401.6	402.9	410.2	405.6	401.3	400.4	394.4	386.7	r385.5	388.8	392.3	392.5	400.2
13-7	Gypsum products	258.2	252.9	252.4	251.3	249.7	250.4	255.0	260.7	263.2	259.4	256.4	255.8	253.9	253.9
13-8	Glass containers	328.7	335.5	335.5	335.5	335.5	335.4	352.2	356.0	358.1	r358.1	357.4	357.4	357.3	357.9
13-9	Other nonmetallic minerals	463.8	474.3	473.3	473.5	474.7	474.7	478.7	479.6	479.1	r471.3	465.2	466.4	466.2	466.2
14	Transportation equipment (12/68 = 100)	235.4	231.8	244.5	246.3	246.8	248.6	245.2	245.2	245.8	r247.5	249.6	250.4	251.2	245.0
14-1	Motor vehicles and equipment	237.6	232.8	247.8	248.9	249.5	250.8	246.8	246.8	247.2	r249.2	251.5	252.5	253.3	245.0
14-4	Railroad equipment	336.1	338.7	338.7	341.3	340.1	345.8	345.8	346.3	343.5	r342.8	349.6	349.3	354.7	354.7
15	Miscellaneous products	265.7	267.0	268.5	269.5	267.6	268.3	273.5	272.7	273.2	r272.2	271.6	273.8	272.4	280.3
15-1	Toys, sporting goods, small arms, ammunition	211.9	213.6	213.0	212.7	213.3	218.4	220.1	220.7	221.0	r221.8	222.9	222.9	224.4	224.7
15-2	Tobacco products	268.3	274.5	278.2	278.2	278.2	278.2	306.6	306.6	306.7	r307.0	306.7	311.3	311.3	328.8
15-3	Notions	259.8	267.8	269.7	269.7	269.7	270.3	270.4	271.5	271.5	r280.1	280.3	280.3	280.3	280.3
15-4	Photographic equipment and supplies	210.0	208.7	208.9	209.0	209.1	209.9	210.5	212.1	214.2	r210.6	210.8	210.6	210.6	211.6
15-5	Mobile homes (12/74 = 100)	156.8	158.7	159.1	159.3	159.3	159.5	159.6	161.9	162.2	r162.5	162.5	162.5	162.5	162.8
15-9	Other miscellaneous products	347.4	345.5	348.5	344.8	344.6	342.2	341.1	334.5	334.1	r331.3	328.0	333.1	326.5	344.7

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[1] Data for May 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Prices for natural gas are lagged 1 month.

[3] Includes only domestic production.

[4] Most prices for refined petroleum products are lagged 1 month.

[5] Some prices for industrial chemicals are lagged 1 month.

r = revised.

23. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1981	1981				1982								
		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May[1]	June	July	Aug.	Sept.
All commodities — less farm products	295.7	298.5	299.5	299.4	300.0	302.0	301.9	301.4	300.9	[illegible]	302.3	304.1	304.3	303.9
All foods	251.8	251.7	249.1	247.4	247.6	251.6	253.2	251.6	254.7	[illegible]	259.0	256.8	255.0	255.4
Processed foods	252.1	252.8	250.0	247.6	248.5	250.5	251.9	252.1	255.1	258.0	260.9	259.8	258.9	259.3
Industrial commodities less fuels	263.7	266.4	268.7	269.0	269.4	271.1	271.5	271.7	272.3	272.8	272.5	272.7	272.7	272.6
Selected textile mill products (Dec. 1975 = 100)	135.8	138.1	138.2	138.4	137.9	138.3	138.7	139.0	139.0	r138.7	138.1	137.5	137.6	137.7
Hosiery	134.3	135.5	136.5	136.5	136.7	136.9	136.9	137.5	138.0	138.5	138.5	138.5	138.5	138.7
Underwear and nightwear	203.4	204.7	204.7	205.7	206.3	213.9	215.6	215.9	215.9	r215.9	217.8	218.0	218.1	218.0
Chemicals and allied products, including synthetic rubber and fibers and yarns	278.4	284.4	283.8	283.2	283.1	284.3	285.1	285.6	285.6	r286.1	284.8	283.0	283.4	283.2
Pharmaceutical preparations	186.9	191.6	192.8	192.5	193.3	196.8	199.3	201.1	204.5	r205.8	205.3	205.7	207.2	208.3
Lumber and wood products, excluding millwork	303.0	298.0	290.1	286.4	290.7	289.8	287.9	288.5	290.5	r288.1	294.0	294.6	289.2	287.9
Steel mill products, including fabricated wire products	337.6	345.3	348.7	348.6	348.9	350.6	350.3	350.5	352.2	352.1	349.9	348.7	348.4	348.1
Finished steel mill products, excluding fabricated wire products	336.2	343.7	347.4	347.2	347.5	349.3	348.9	349.2	351.0	350.9	348.6	347.7	347.3	347.0
Finished steel mill products, including fabricated wire products	336.2	343.7	347.4	347.2	347.5	349.3	348.9	349.2	351.0	350.9	348.6	347.4	347.0	346.7
Special metals and metal products	279.4	280.1	286.7	286.8	286.6	287.9	286.0	285.3	285.6	r286.3	285.8	286.3	286.6	284.2
Fabricated metal products	280.0	283.9	286.0	287.0	287.1	289.4	289.0	289.9	290.8	r292.6	294.6	294.0	293.9	294.1
Copper and copper products	203.8	205.1	201.9	198.9	195.4	194.5	194.1	190.8	191.6	r190.0	180.0	179.5	180.1	181.4
Machinery and motive products	256.7	257.7	264.3	265.8	266.9	268.9	269.1	269.5	269.6	r270.7	271.8	272.8	273.3	270.8
Machinery and equipment, except electrical	288.5	293.8	295.0	296.4	298.4	300.7	302.3	303.1	304.6	r305.7	305.7	307.2	307.7	308.3
Agricultural machinery, including tractors	297.3	301.6	305.7	312.5	314.7	315.1	316.0	318.4	319.0	r319.9	319.8	320.5	321.5	324.6
Metalworking machinery	329.7	333.9	336.7	338.3	341.2	343.8	344.9	346.4	348.8	r349.3	350.3	352.7	353.2	353.6
Numerically controlled machine tools (Dec. 1971 = 100)	239.3	241.8	241.8	242.2	242.0	240.1	239.8	239.9	239.9	r239.9	240.3	239.6	239.6	239.8
Total tractors	324.7	330.7	338.3	342.2	342.3	345.9	345.9	348.1	352.4	r353.6	353.2	354.2	354.8	358.9
Agricultural machinery and equipment less parts	289.8	294.0	297.6	303.5	305.8	306.5	307.4	309.7	310.3	r311.0	311.0	311.8	312.5	315.1
Farm and garden tractors less parts	300.1	305.5	313.0	318.6	319.7	319.7	319.7	323.5	323.5	r325.0	324.3	324.2	324.8	331.8
Agricultural machinery, excluding tractors less parts	295.2	298.7	299.9	303.5	310.9	311.6	313.2	314.6	315.6	r316.1	316.5	317.7	319.0	319.1
Industrial valves	315.9	322.7	322.4	323.4	325.3	328.6	330.2	330.5	331.1	r331.2	327.2	329.2	329.2	329.4
Industrial fittings	302.1	304.3	304.1	304.1	304.1	304.1	304.1	304.1	309.1	309.1	309.1	310.2	310.2	309.2
Construction materials	283.0	284.4	284.6	284.1	285.2	286.6	286.9	287.5	288.2	r288.2	289.1	289.0	288.2	287.9

[1] Data for May 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

24. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1981		1981			1982								
		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May[1]	June	July	Aug.	Sept.
Total durable goods	269.8	271.8	275.0	275.4	276.0	277.6	277.4	277.4	278.1	r278.5	278.4	279.1	279.1	278.7
Total nondurable goods	312.4	315.0	312.8	311.4	311.4	314.7	315.4	314.2	313.6	314.5	316.0	317.7	317.3	315.9
Total manufactures	286.0	288.3	289.8	289.7	289.9	291.9	292.0	291.4	291.1	291.3	292.4	293.9	293.9	293.1
Durable	269.7	271.7	275.1	275.8	276.5	278.0	277.8	277.8	278.7	r279.2	279.4	280.1	280.1	279.7
Nondurable	303.6	306.3	305.5	304.5	304.3	306.8	307.2	305.9	304.1	r304.0	306.2	308.6	308.6	307.3
Total raw or slightly processed goods	330.7	332.7	326.4	323.3	323.6	328.9	330.6	329.7	331.9	r335.1	333.6	333.3	331.8	330.3
Durable	271.2	270.4	260.7	253.4	247.8	253.8	253.7	250.1	245.3	r239.7	225.2	225.0	225.7	227.0
Nondurable	334.0	336.3	330.0	327.4	326.2	333.4	335.2	334.5	337.2	r341.1	340.6	340.2	338.8	336.9

[1] Data for May 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

25. Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981				1982								
			Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May[1]	June	July	Aug.	Sept.
	MINING														
1011	Iron ores (12/75 = 100)	167.6	168.1	168.1	171.3	171.3	171.3	171.3	171.3	171.3	177.1	177.1	177.1	177.1	177.1
1092	Mercury ores (12/75 = 100)	346.0	364.5	354.1	354.1	343.7	347.9	313.7	325.0	327.0	308.3	307.5	304.2	287.5	289.4
1211	Bituminous coal and lignite	493.7	506.0	506.2	507.8	510.3	520.9	525.8	524.9	527.9	r529.9	529.8	533.5	534.7	538.3
1311	Crude petroleum and natural gas	898.6	913.6	900.8	907.5	921.7	918.7	913.8	905.4	880.3	r901.2	915.1	925.3	935.7	938.4
1442	Construction sand and gravel	277.4	279.2	279.7	279.8	280.7	287.4	289.9	293.1	292.6	r295.0	295.2	295.3	296.5	296.0
1455	Kaolin and ball clay (6/76 = 100)	138.7	137.1	143.4	143.4	143.4	149.6	149.6	149.6	151.7	151.7	151.7	151.7	151.7	151.7
	MANUFACTURING														
2011	Meatpacking plants	243.1	252.7	244.1	237.0	234.1	237.6	244.6	247.3	254.0	r264.7	265.7	258.4	253.0	253.1
2013	Sausages and other prepared meats	241.4	253.9	252.2	248.9	247.0	245.6	251.0	248.6	253.0	r265.2	273.7	272.2	275.4	262.3
2016	Poultry dressing plants	192.0	188.8	175.5	172.8	166.7	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
2021	Creamery butter	274.8	275.0	279.2	276.5	275.0	275.0	276.4	276.8	275.3	274.9	274.9	275.0	276.3	276.8

See footnotes at end of table.

25. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981				1982								
			Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May [1]	June	July	Aug.	Sept.
	MANUFACTURING — Continued														
2022	Cheese, natural and processed (12/72 = 100)	215.7	215.0	215.4	215.9	218.4	218.6	217.9	216.7	216.5	217.1	217.9	218.6	218.8	218.7
2024	Ice cream and frozen desserts (12/72 = 100)	211.9	212.7	212.5	212.5	212.7	212.8	212.8	210.9	214.2	214.2	214.2	213.6	213.6	216.5
2033	Canned fruits and vegetables	248.5	254.3	257.0	258.4	258.9	260.8	262.6	262.4	262.3	'262.6	264.6	265.5	263.2	260.1
2034	Dehydrated food products (12/73 = 100)	177.6	183.4	182.1	181.4	182.1	184.0	181.8	181.5	181.5	178.5	178.5	180.4	180.0	179.6
2041	Flour mills (12/71 = 100)	186.0	185.3	191.1	181.5	189.2	191.5	187.5	187.3	182.5	188.4	189.1	185.5	180.2	182.2
2044	Rice milling	277.2	268.2	247.3	235.4	215.1	205.9	192.2	183.5	177.9	183.0	180.3	177.6	183.0	183.0
2048	Prepared foods, n.e.c. (12/75 = 100)	124.5	119.6	117.3	116.4	116.0	116.0	115.9	114.6	115.4	116.7	115.7	115.4	113.3	109.6
2061	Raw cane sugar	273.5	212.3	219.9	224.3	230.8	247.6	245.1	233.0	242.9	269.2	286.7	311.5	318.1	295.6
2063	Beet sugar	314.3	270.7	250.3	238.4	250.5	266.4	272.2	272.2	269.7	'277.3	280.2	280.5	297.4	300.8
2067	Chewing gum	308.8	303.2	303.2	303.2	303.2	303.3	303.3	303.3	303.4	303.4	303.4	303.3	304.7	304.7
2074	Cottonseed oil mills	180.0	182.3	172.0	167.2	182.4	184.9	170.5	158.1	164.7	167.9	170.2	174.6	173.1	164.5
2075	Soybean oil mills	245.8	234.2	229.7	221.2	221.9	223.1	220.4	218.6	225.8	232.0	226.4	224.1	205.5	200.6
2077	Animal and marine fats and oils	288.0	281.2	274.0	272.3	266.6	260.4	262.6	271.8	273.3	271.5	272.3	284.3	242.4	241.2
2083	Malt	282.5	275.4	275.4	275.4	275.4	267.1	267.1	267.1	258.1	258.8	258.8	258.8	258.8	251.2
2085	Distilled liquor, except brandy (12/75 = 100)	134.7	136.5	135.5	137.9	137.9	140.1	137.9	140.2	140.2	138.8	138.8	138.8	140.4	140.4
2091	Canned and cured seafoods (12/73 = 100)	187.8	188.8	188.2	188.3	188.5	187.2	187.0	187.7	188.2	188.0	188.4	187.8	184.3	186.2
2092	Fresh or frozen packaged fish	369.1	353.5	356.9	360.8	360.5	386.8	389.2	419.1	432.2	'425.9	442.8	418.9	426.2	446.7
2095	Roasted coffee (12/72 = 100)	238.1	237.3	238.2	239.2	240.4	245.1	247.7	248.8	250.6	'248.0	247.6	247.0	246.4	244.7
2098	Macaroni and spaghetti	252.0	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5
2111	Cigarettes	277.7	284.2	288.4	288.4	288.4	288.4	319.7	319.7	319.8	'319.9	319.8	324.9	324.9	345.1
2121	Cigars	170.0	174.5	174.5	174.5	174.5	174.5	176.6	176.6	176.6	'176.6	176.6	176.6	176.6	176.8
2131	Chewing and smoking tobacco	320.7	325.3	326.1	326.1	326.1	326.1	349.4	349.4	349.4	353.6	353.6	358.3	358.3	358.5
2211	Weaving mills, cotton (12/72 = 100)	232.7	236.0	233.2	229.8	227.6	227.3	227.1	226.4	225.3	'226.4	226.0	222.0	221.7	218.6
2221	Weaving mills, synthetic (12/77 = 100)	136.7	139.5	139.4	139.8	139.5	139.8	139.7	140.0	139.2	'138.5	138.0	137.5	137.1	136.4
2251	Women's hosiery, except socks (12/75 = 100)	113.5	115.0	115.2	115.1	115.2	115.6	115.6	116.1	116.2	'116.9	117.0	117.0	117.0	117.0
2254	Knit underwear mills	210.2	210.9	210.9	212.8	213.0	225.2	225.2	225.9	226.0	'226.1	228.7	230.8	231.1	231.2
2257	Circular knit fabric mills (6/76 = 100)	110.9	111.9	112.0	112.4	111.8	112.4	113.2	110.7	110.2	'109.9	109.2	108.6	108.7	108.6
2261	Finishing plants, cotton (6/76 = 100)	144.9	145.4	144.9	143.5	141.4	140.5	140.3	140.8	141.6	'141.5	141.3	140.2	139.8	138.4
2262	Finishing plants, synthetics, silk (6/76 = 100)	128.5	129.0	129.1	129.1	128.6	129.4	129.9	128.5	128.5	'128.4	127.2	126.7	128.7	128.1
2272	Tufted carpets and rugs	154.2	157.3	155.7	157.0	156.7	155.5	155.7	155.7	156.1	156.4	156.9	156.1	155.4	156.1
2281	Yarn mills, except wool (12/71 = 100)	221.7	223.8	222.4	219.9	217.2	216.3	215.7	215.4	214.4	'214.7	214.0	213.7	213.2	213.1
2282	Throwing and winding mills (6/76 = 100)	139.3	148.0	154.5	145.6	146.0	145.7	150.3	150.0	151.0	'152.7	149.3	149.0	140.4	142.5
2284	Thread mills (6/76 = 100)	151.4	154.8	157.0	157.0	156.8	156.8	156.8	156.8	156.7	156.6	156.5	156.5	158.0	158.0
2298	Cordage and twine (12/77 = 100)	134.8	139.3	139.3	139.3	140.7	141.0	141.0	141.0	141.0	141.0	141.0	141.0	141.0	142.6
2311	Men's and boys' suits and coats	224.0	226.5	227.4	228.4	230.5	233.7	233.6	233.8	234.4	234.6	235.3	237.2	238.8	240.0
2321	Men's and boys' shirts and nightwear	209.5	211.5	212.4	212.6	213.4	173.4	215.9	216.9	217.3	'217.5	215.7	216.0	216.1	219.4
2322	Men's and boys' underwear	230.6	230.8	230.8	233.0	233.0	246.9	246.9	247.4	247.4	247.4	251.2	251.2	251.2	250.7
2323	Men's and boys' neckwear (12/75 = 100)	114.6	113.9	113.9	113.9	113.9	115.3	117.3	117.3	117.3	117.3	121.3	121.3	121.3	121.3
2327	Men's and boys' separate trousers	186.2	186.4	186.8	186.8	187.1	188.4	188.4	188.4	194.1	'195.8	195.0	195.6	195.6	195.6
2328	Men's and boys' work clothing	248.6	251.2	253.1	253.2	253.3	252.5	254.2	254.9	255.2	'254.7	254.1	252.9	253.1	252.3
2331	Women's and misses' blouses and waists (6/78 = 100)	120.6	121.3	126.4	126.7	126.7	126.5	126.5	126.5	126.5	'126.5	123.7	123.6	123.8	123.8
2335	Women's and misses' dresses (12/77 = 100)	121.3	123.5	123.4	124.1	122.7	123.0	123.0	123.1	122.9	122.9	123.1	123.7	123.6	122.7
2341	Women's and children's underwear (12/72 = 100)	169.7	170.6	170.6	171.6	171.6	174.7	174.8	175.0	175.0	'176.6	179.4	179.4	179.4	178.1
2342	Brassieres and allied garments (12/75 = 100)	136.7	138.8	138.8	138.9	140.1	145.1	148.8	148.8	148.8	'148.1	148.5	148.4	148.4	150.2
2361	Children's dresses and blouses (12/77 = 100)	120.9	121.7	122.0	122.5	123.2	123.2	123.2	123.2	122.2	'122.2	121.0	119.4	120.3	118.6
2381	Fabric dress and work gloves	289.3	289.2	289.2	289.2	289.2	283.8	287.4	295.5	295.5	295.5	294.5	294.5	288.2	288.2
2394	Canvas and related products (12/77 = 100)	132.0	134.6	137.6	137.6	139.7	144.9	144.9	147.2	145.7	'145.9	143.8	143.8	143.8	145.4
2396	Automotive and apparel trimmings (12/77 = 100)	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
2421	Sawmills and planing mills (12/71 = 100)	228.2	225.2	219.5	216.5	218.6	218.0	216.9	216.9	218.8	'217.4	219.7	221.6	217.5	218.3
2436	Softwood veneer and plywood (12/75 = 100)	142.0	135.4	129.3	129.0	134.5	132.5	130.5	131.8	129.1	'125.9	133.3	129.6	128.7	128.6
2439	Structural wood members, n.e.c. (12/75 = 100)	156.6	156.6	154.8	154.2	153.2	153.9	153.5	152.6	153.4	'152.8	152.9	154.5	155.1	154.4
2448	Wood pallets and skids (12/75 = 100)	152.5	152.8	152.0	150.4	149.9	148.8	149.0	148.2	145.9	'144.7	144.2	144.1	143.8	143.8
2451	Mobile homes (12/74 = 100)	156.9	158.7	158.2	158.3	160.3	160.4	160.5	162.7	163.0	'163.3	163.4	163.4	163.4	163.7
2492	Particleboard (12/75 = 100)	173.6	170.5	168.0	168.9	170.3	172.6	170.7	177.7	178.2	'178.0	176.9	175.4	174.5	175.3
2511	Wood household furniture (12/71 = 100)	197.4	200.1	201.0	202.0	202.8	203.6	204.3	205.1	207.4	'207.7	207.6	208.1	208.0	209.0
2512	Upholstered household furniture (12/71 = 100)	174.0	175.3	175.6	179.5	182.1	184.4	179.3	179.3	181.8	'182.3	185.1	184.1	185.5	185.9
2515	Mattresses and bedsprings	192.3	195.2	195.2	197.5	198.0	204.4	205.6	205.6	205.7	'205.9	210.3	210.1	210.4	210.4
2521	Wood office furniture	254.2	257.1	257.1	257.0	257.6	261.9	270.7	270.8	270.8	'270.8	271.9	272.0	272.4	272.4
2611	Pulp mills (12/73 = 100)	252.4	251.3	256.0	262.5	262.5	258.6	258.6	260.7	253.6	'249.7	246.5	238.5	237.2	235.4
2621	Paper mills, except building (12/74 = 100)	158.2	158.8	159.8	159.7	159.6	162.0	162.0	162.0	161.3	'160.3	160.8	160.7	159.9	159.8
2631	Paperboard mills (12/74 = 100)	151.7	153.7	153.6	153.5	152.7	152.5	153.4	153.0	152.8	'151.3	150.0	149.1	149.4	146.5
2647	Sanitary paper products	343.4	344.3	344.0	344.1	344.6	344.6	344.6	344.5	344.5	'343.6	347.3	346.4	349.2	350.0
2654	Sanitary food containers	244.8	253.2	253.4	253.3	253.3	254.0	256.9	260.0	259.9	'259.9	261.4	261.4	261.4	262.2
2655	Fiber cans, drums, and similar products (12/75 = 100)	163.0	163.2	167.6	167.6	170.0	176.4	176.5	176.5	176.5	176.7	176.7	176.7	177.5	177.5
2812	Alkalies and chlorine (12/73 = 100)	305.9	316.0	317.7	317.0	324.8	329.4	335.2	335.6	322.0	'341.1	338.2	324.4	325.8	324.3
2821	Plastics materials and resins (6/76 = 100)	150.8	156.0	156.3	153.7	154.3	150.7	152.6	151.0	152.6	'150.9	150.7	150.2	150.8	151.1
2822	Synthetic rubber	293.3	299.3	301.0	301.4	302.7	303.9	306.1	306.7	306.6	307.1	303.8	301.8	299.9	298.8
2824	Organic fiber, noncellulosic	156.6	160.6	164.2	162.5	161.9	161.8	162.9	161.6	162.5	'161.6	161.3	160.5	159.5	160.1
2873	Nitrogenous fertilizers (12/75 = 100)	142.8	142.1	142.9	144.2	142.9	142.4	142.6	142.2	141.7	'140.5	139.5	136.1	136.0	135.6
2874	Phosphatic fertilizers	254.1	259.4	259.4	258.5	259.0	261.0	260.5	261.6	258.2	256.2	257.6	256.6	248.7	245.9
2875	Fertilizers, mixing only	270.7	272.0	273.8	273.7	270.5	274.3	276.8	278.4	278.7	'278.6	278.8	278.6	277.9	275.4
2892	Explosives	311.9	316.5	318.7	316.5	315.6	314.9	317.5	320.5	327.2	'326.1	319.6	318.4	324.8	337.3
2911	Petroleum refining (6/76 = 100)	294.4	295.8	294.6	293.3	293.1	293.0	290.1	281.7	267.4	259.2	267.7	281.4	283.7	280.3
2951	Paving mixtures and blocks (12/75 = 100)	194.3	196.0	196.3	196.4	196.0	197.0	198.0	198.1	197.1	'196.3	195.1	194.8	194.4	194.8
2952	Asphalt felts and coatings (12/75 = 100)	176.9	174.3	174.9	176.1	176.1	174.2	173.8	171.2	169.1	'169.4	169.8	171.3	171.1	174.5
3011	Tires and inner tubes (12/73 = 100)	215.8	220.6	221.0	220.1	221.2	222.0	222.4	220.3	216.7	'221.3	221.5	221.7	226.2	221.7

25. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981				1982								
			Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May[1]	June	July	Aug.	Sept.
3021	Rubber and plastic footwear (12/71 = 100)	184.4	185.3	185.0	185.0	185.2	186.1	188.4	189.1	189.0	r186.6	187.0	187.0	186.8	185.9
3031	Reclaimed rubber (12/73 = 100)	194.1	200.3	200.3	200.3	200.3	200.3	200.4	207.2	209.2	r209.5	208.4	207.7	207.4	207.6
3079	Miscellaneous plastic products (6/78 = 100)	128.9	130.3	130.8	130.8	131.0	131.1	131.6	132.8	133.2	r133.0	132.9	132.6	132.7	132.7
3111	Leather tanning and finishing (12/77 = 100)	150.7	148.3	148.2	146.8	147.5	150.8	149.3	147.9	146.8	r147.4	146.9	147.5	146.5	146.5
3143	Men's footwear, except athletic (12/75 = 100)	169.3	170.9	170.5	170.6	171.3	173.1	172.2	173.5	174.9	175.1	175.2	171.6	175.5	175.7
3144	Women's footwear, except athletic	217.1	218.2	212.5	212.7	212.4	208.5	209.8	210.3	217.0	r216.2	215.2	216.3	220.6	222.2
3171	Women's handbags and purses (12/75 = 100)	156.5	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.5	157.8	159.0
3211	Flat glass (12/71 = 100)	175.3	180.0	180.1	180.1	177.4	177.5	177.5	177.5	177.5	r187.9	177.5	187.7	187.7	186.3
3221	Glass containers	328.6	335.4	335.4	335.4	335.4	335.3	352.1	355.8	358.0	r358.0	357.3	357.3	357.2	357.7
3241	Cement, hydraulic	329.6	332.0	330.3	330.3	330.3	339.6	341.5	341.5	341.1	r341.9	338.7	337.8	336.0	335.1
3251	Brick and structural clay tile	298.5	299.9	299.9	300.5	300.5	298.9	299.4	299.4	303.4	r304.5	306.4	307.2	307.2	307.5
3253	Ceramic wall and floor tile (12/75 = 100)	133.4	140.4	140.4	140.4	140.4	140.4	140.4	140.4	140.6	r140.6	138.0	138.0	138.0	138.0
3255	Clay refractories	310.2	312.5	313.9	315.2	319.9	329.6	354.4	355.6	355.2	r355.5	357.1	357.2	357.7	357.9
3259	Structural clay products, n.e.c.	222.6	227.5	231.7	231.7	236.6	225.6	226.0	225.9	215.9	r215.8	216.5	216.4	216.5	219.5
3261	Vitreous plumbing fixtures	254.9	259.0	259.0	259.3	260.1	261.1	260.6	260.8	261.8	265.4	265.5	264.2	263.9	267.1
3262	Vitreous china food utensils	335.0	336.8	336.8	344.7	344.7	347.7	347.7	347.3	346.5	r355.5	349.8	349.8	349.8	349.8
3263	Fine earthenware food utensils	309.1	313.8	313.8	315.0	315.0	315.1	315.1	315.0	314.9	r316.2	314.8	314.8	314.8	314.8
3269	Pottery products, n.e.c. (12/75 = 100)	160.1	161.8	161.8	163.7	163.7	164.3	164.3	164.2	164.0	r166.3	164.8	164.7	164.7	164.8
3271	Concrete block and brick	270.4	274.2	274.3	274.2	275.1	274.9	276.4	276.4	276.5	r276.7	277.0	277.1	277.4	276.8
3273	Ready-mixed concrete	298.7	299.2	299.5	299.4	299.6	301.9	301.9	302.5	303.9	r305.5	304.7	305.4	304.8	305.4
3274	Lime (12/75 = 100)	172.5	173.7	173.7	173.5	173.8	178.8	183.7	185.7	186.3	r188.0	188.4	188.1	188.3	188.2
3275	Gypsum products	256.9	252.9	251.5	252.5	250.6	250.9	253.9	260.5	262.5	258.8	256.2	256.5	254.3	254.7
3291	Abrasive products (12/71 = 100)	232.9	237.3	237.6	241.0	241.0	241.3	248.3	249.8	250.2	r251.7	252.1	252.0	252.3	252.3
3297	Nonclay refractories (12/74 = 100)	185.3	189.7	189.7	190.2	190.3	191.2	198.3	200.4	202.3	203.2	203.9	203.8	203.8	203.8
3312	Blast furnaces and steel mills	342.8	350.3	353.1	353.0	353.3	354.7	354.4	354.4	356.1	355.9	353.6	352.9	352.8	352.3
3313	Electrometallurgical products (12/75 = 100)	121.8	121.4	125.4	125.4	125.3	125.3	123.4	120.3	120.3	120.3	120.4	120.4	121.4	121.4
3316	Cold finishing of steel shapes	316.2	326.2	326.4	326.4	326.7	327.0	327.0	327.0	327.1	r327.3	325.6	325.2	325.6	325.1
3317	Steel pipes and tubes	341.5	350.5	362.0	362.3	363.0	363.7	364.1	365.8	365.9	r365.9	365.7	364.0	361.6	361.0
3321	Gray iron foundries (12/68 = 100)	299.7	302.0	303.3	305.2	306.1	307.9	310.0	311.5	311.9	r311.1	311.6	311.3	311.3	309.7
3333	Primary zinc	326.3	355.9	337.0	337.5	315.7	308.6	311.2	292.0	273.4	r256.6	259.7	266.4	277.0	291.6
3334	Primary aluminum	333.1	333.6	333.5	332.5	332.8	324.1	320.2	320.8	312.4	r308.8	308.4	305.7	308.0	304.4
3351	Copper rolling and drawing	212.3	214.1	212.3	209.2	207.1	204.8	203.9	198.4	198.4	r197.4	189.8	189.2	190.1	190.9
3353	Aluminum sheet, plate, and foil (12/75 = 100)	175.8	178.0	179.9	180.2	180.8	181.8	181.7	181.2	179.9	r178.6	178.0	178.2	177.1	177.2
3354	Aluminum extruded products (12/75 = 100)	180.1	181.2	181.3	181.4	181.1	180.8	180.8	180.5	180.2	180.2	180.1	179.5	178.9	178.0
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	158.1	157.7	163.0	166.2	166.1	166.1	166.5	166.3	162.9	163.0	165.4	164.7	164.5	165.9
3411	Metal cans	305.1	306.8	307.0	308.0	304.9	310.8	314.0	313.6	318.6	r318.7	319.3	318.6	318.0	318.1
3425	Hand saws and saw blades (12/72 = 100)	201.4	204.6	204.8	205.0	206.0	211.6	214.8	214.9	215.3	r221.3	220.9	221.0	221.2	221.2
3431	Metal sanitary ware	265.5	270.2	270.3	271.6	271.8	271.3	272.8	275.1	275.8	r275.5	276.0	276.1	276.9	276.4
3465	Automotive stampings (12/75 = 100)	146.0	146.9	147.4	149.7	149.1	150.1	144.7	144.2	144.3	r144.5	153.0	153.0	153.3	153.5
3482	Small arms ammunition (12/75 = 100)	159.0	159.9	159.9	159.9	163.9	167.5	167.5	167.5	166.3	r166.3	175.9	175.9	175.9	175.9
3493	Steel springs, except wire	245.9	252.4	253.9	254.1	256.1	255.8	257.4	258.4	254.3	r254.5	255.2	253.1	253.5	253.5
3494	Valves and pipe fittings (12/71 = 100)	248.9	252.7	252.9	253.5	255.7	257.7	258.9	259.1	260.3	r260.9	259.0	260.1	260.1	260.0
3498	Fabricated pipe and fittings	361.3	375.1	377.7	378.6	379.3	378.6	377.7	379.8	385.5	385.4	385.4	383.8	385.6	382.4
3519	Internal combustion engines, n.e.c.	311.9	322.1	323.2	326.4	325.4	329.4	332.0	332.6	334.2	r338.4	337.7	339.6	343.8	347.1
3531	Construction machinery (12/76 = 100)	156.8	160.1	161.0	161.6	159.7	162.5	162.4	163.3	164.3	165.2	165.3	166.5	166.7	166.8
3532	Mining machinery (12/72 = 100)	282.5	286.9	288.5	290.8	292.9	295.5	297.8	300.9	302.4	r304.0	303.5	304.0	303.4	304.5
3533	Oilfield machinery and equipment	395.8	411.3	415.6	418.2	420.3	427.2	429.2	435.8	439.3	r438.4	437.8	438.4	439.6	439.1
3534	Elevators and moving stairways	253.9	254.6	257.0	260.7	265.6	264.3	269.8	271.6	271.8	r275.5	273.5	275.5	275.5	275.3
3542	Machine tools, metal forming types (12/71 = 100)	306.9	312.0	311.7	312.3	319.3	319.7	322.8	324.5	325.2	r325.5	326.5	333.6	333.6	333.3
3546	Power driven hand tools (12/76 = 100)	147.3	148.6	149.5	149.5	150.0	153.3	153.2	153.9	154.7	r156.3	156.4	157.4	157.5	157.2
3552	Textile machinery (12/69 = 100)	243.5	248.2	248.0	247.9	249.9	252.3	253.5	255.0	256.2	r257.3	258.1	258.8	258.9	259.3
3553	Woodworking machinery (12/72 = 100)	225.0	228.9	228.9	229.1	229.1	233.7	232.9	233.4	234.7	234.7	234.4	230.0	230.6	230.6
3576	Scales and balances, excluding laboratory	226.2	226.1	226.2	226.3	226.5	228.3	228.8	229.8	229.6	229.5	230.6	231.9	231.9	231.9
3592	Carburetors, pistons, rings, valves (6/76 = 100)	178.0	182.1	185.4	187.2	187.3	185.3	188.6	190.4	192.8	r195.4	195.7	196.6	197.2	197.6
3612	Transformers	209.9	214.5	217.3	222.0	222.0	220.5	222.2	222.4	223.3	224.7	224.8	224.7	226.0	224.6
3623	Welding apparatus, electric (12/72 = 100)	227.5	231.6	232.5	233.2	235.8	236.8	236.9	232.3	237.6	r237.6	233.1	236.9	237.5	237.7
3631	Household cooking equipment (12/75 = 100)	141.2	141.6	141.6	141.9	142.6	146.0	146.8	147.2	146.2	r147.1	146.9	148.2	150.4	151.0
3632	Household refrigerators, freezers (6/76 = 100)	132.8	136.4	137.8	137.9	137.9	140.1	141.1	142.3	142.5	143.2	144.3	145.5	145.9	145.9
3633	Household laundry equipment (12/73 = 100)	174.3	177.2	177.0	178.4	178.8	180.1	180.5	186.2	186.9	188.6	189.0	189.1	189.7	190.1
3635	Household vacuum cleaners	159.1	158.8	161.3	161.0	160.8	165.6	165.2	165.7	165.4	r165.5	158.4	158.4	159.4	159.5
3636	Sewing machines (12/75 = 100)	146.8	153.8	156.0	156.0	156.0	156.0	155.8	155.8	154.3	r154.3	153.7	153.7	153.0	153.0
3641	Electric lamps	277.3	283.1	285.9	284.8	281.3	282.1	286.1	283.6	286.6	294.5	293.9	291.9	291.9	296.3
3644	Noncurrent-carrying wiring devices (12/72 = 100)	249.6	258.5	258.7	262.1	262.1	257.9	259.0	258.1	260.0	r262.7	261.1	260.7	260.3	261.3
3646	Commercial lighting fixtures (12/75 = 100)	154.8	157.6	158.9	159.3	159.2	159.2	161.1	162.4	163.5	r167.7	167.2	166.5	165.9	165.4
3648	Lighting equipment, n.e.c. (12/75 = 100)	155.9	161.7	162.0	162.4	163.1	162.8	167.8	168.8	170.9	r171.2	170.9	171.1	171.2	171.2
3671	Electron tubes receiving type	309.7	327.5	327.5	327.8	342.2	374.1	374.2	374.4	374.5	r374.4	375.1	378.0	378.0	380.7
3674	Semiconductors and related devices	r90.9	91.4	91.6	92.0	91.7	90.9	90.2	90.0	89.5	r89.3	89.7	90.8	90.5	90.8
3675	Electronic capacitors (12/75 = 100)	170.3	172.4	171.5	168.1	166.6	167.4	169.7	169.4	167.6	166.6	166.8	166.7	166.2	165.5
3676	Electronic resistors (12/75 = 100)	141.4	142.7	142.7	143.0	142.8	143.7	144.0	143.4	144.4	145.2	144.9	144.4	144.6	144.8
3678	Electronic connectors (12/75 = 100)	154.9	156.5	156.8	155.8	155.8	155.9	158.2	156.7	156.4	r158.3	158.3	157.6	160.9	159.8
3692	Primary batteries, dry and wet	182.2	182.7	182.7	182.7	182.7	182.0	184.3	190.5	195.5	r195.8	195.8	196.3	196.3	196.8
3711	Motor vehicles and car bodies (12/75 = 100)	150.3	143.4	158.6	158.7	159.1	159.8	156.0	154.9	154.9	r157.0	159.6	159.7	160.3	151.4
3942	Dolls (12/75 = 100)	131.3	130.9	130.9	130.9	130.9	135.5	136.6	136.6	136.8	r136.8	136.5	136.5	136.5	136.5
3944	Games, toys, and children's vehicles	221.3	222.2	222.2	222.6	223.9	229.4	232.5	234.1	234.1	r234.3	231.7	231.8	231.8	232.1
3955	Carbon paper and inked ribbons (12/75 = 100)	138.5	140.6	140.2	140.2	140.3	140.3	140.3	140.3	140.3	140.5	140.6	140.5	140.5	139.3
3995	Burial caskets (6/76 = 100)	139.5	143.4	143.4	143.4	142.7	142.7	143.8	145.3	145.3	149.3	149.3	150.8	150.8	150.8
3996	Hard surface floor coverings (12/75 = 100)	151.8	153.7	153.7	153.7	153.7	155.1	155.2	156.1	156.1	156.3	154.3	155.0	155.7	156.9

[1] Data for May 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

r = revised.

PRODUCTIVITY DATA

PRODUCTIVITY DATA are compiled by the Bureau of Labor Statistics from establishment data and from estimates of compensation and output supplied by the U.S. Department of Commerce and the Federal Reserve Board.

Definitions

Output is the constant dollar gross domestic product produced in a given period. Indexes of **output per hour of labor input**, or labor productivity, measure the value of goods and services produced per hour of labor. **Compensation per hour** includes wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. The data also include an estimate of wages, salaries, and supplementary payments for the self-employed, except for nonfinancial corporations, in which there are no self-employed. **Real compensation per hour** is compensation per hour adjusted by the Consumer Price Index for All Urban Consumers.

Unit labor cost measures the labor compensation cost required to produce one unit of output and is derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from the current dollar gross domestic product and dividing by output. In these tables, **unit nonlabor costs** contain all the components of unit nonlabor payments except unit profits. **Unit profits** include corporate profits and inventory valuation adjustments per unit of output.

The **implicit price deflator** is derived by dividing the current dollar estimate of gross product by the constant dollar estimate, making the deflator, in effect, a price index for gross product of the sector reported.

The use of the term "man hours" to identify the labor component of productivity and costs, in tables 26 through 29, has been discontinued. **Hours of all persons** is now used to describe the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all-employee hour** is now used to describe labor productivity in nonfinancial corporations where there are no self-employed.

Notes on the data

In the business sector and the nonfarm business sector, the basis for the output measure employed in the computation of output per hour is Gross Domestic Product rather than Gross National Product. Computation of hours includes estimates of nonfarm and farm proprietor hours.

Output data are supplied by the Bureau of Economic Analysis, U.S. Department of Commerce, and the Federal Reserve Board. Quarterly manufacturing output indexes are adjusted by the Bureau of Labor Statistics to annual estimates of output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are from the Bureau of Economic Analysis and the Bureau of Labor Statistics.

Beginning with the September 1982 issue of the *Review*, all of the productivity and cost measures contained in these tables are based on revised output and compensation measures released by the Bureau of Economic Analysis in July as part of the regular revision cycle of the National Income and Product Accounts. Measures of labor input have been revised to reflect results of the 1980 census, and seasonal factors have been recomputed for use in the preparation of quarterly measures. The word "private" is no longer being used as part of the series title of one of the two business sector measures prepared by BLS; no change has been made in the definition or content of the measures as a result of this change.

26. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950–81
[1977=100]

Item	1950	1955	1960	1965	1970	1974	1975	1976	1977	1978	1979	1980	1981
Business sector:													
Output per hour of all persons	50.4	58.3	65.2	78.3	86.2	92.5	94.5	97.6	100.0	100.6	99.6	98.9	100.7
Compensation per hour	20.0	26.4	33.9	41.7	58.2	78.0	85.5	92.9	100.0	108.6	119.1	131.4	144.1
Real compensation per hour	50.5	59.6	69.5	80.1	90.8	95.9	96.3	98.9	100.0	100.9	99.4	96.7	96.0
Unit labor cost	38.7	45.2	52.0	53.3	67.5	84.4	90.5	95.1	100.0	108.0	119.5	132.9	143.1
Unit nonlabor payments	43.4	47.6	50.6	57.6	63.2	78.5	90.4	94.0	100.0	106.7	112.8	119.3	135.2
Implicit price deflator	41.0	46.0	51.6	54.7	66.0	82.4	90.5	94.7	100.0	107.5	117.2	128.3	140.4
Nonfarm business sector:													
Output per hour of all persons	56.3	62.8	68.3	80.5	86.8	92.9	94.7	97.8	100.0	100.6	99.3	98.5	99.9
Compensation per hour	21.8	28.3	35.7	42.8	58.7	78.5	86.0	93.0	100.0	108.6	118.8	130.9	143.6
Real compensation per hour	55.0	64.0	73.0	82.2	91.5	96.4	96.8	99.0	100.0	100.9	99.2	96.3	95.7
Unit labor cost	38.8	45.0	52.2	53.2	67.6	84.5	90.8	95.1	100.0	108.0	119.6	133.0	143.8
Unit nonlabor payments	42.7	47.8	50.4	58.0	63.7	75.8	88.5	93.5	100.0	105.3	110.3	119.1	134.8
Implicit price deflator	40.1	46.0	51.6	54.8	66.3	81.6	90.0	94.6	100.0	107.1	116.5	128.3	140.8
Nonfinancial corporations:													
Output per hour of all employees	(1)	(1)	66.6	80.2	85.7	91.7	94.8	97.8	100.0	101.0	101.2	100.8	102.7
Compensation per hour	(1)	(1)	36.2	43.0	58.3	77.6	85.5	92.5	100.0	108.6	119.2	131.6	144.4
Real compensation per hour	(1)	(1)	74.2	82.5	90.9	95.4	96.2	98.5	100.0	100.8	99.5	96.8	96.2
Unit labor cost	(1)	(1)	54.4	53.5	68.0	84.7	90.2	94.6	100.0	107.5	117.8	130.5	140.6
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	75.6	90.8	95.0	100.0	104.2	106.9	117.7	134.8
Implicit price deflator	(1)	(1)	54.5	56.1	66.3	81.6	90.4	94.7	100.0	106.4	114.1	126.1	138.6
Manufacturing:													
Output per hour of all persons	49.4	56.4	60.0	74.5	79.1	90.8	93.4	97.5	100.0	100.9	101.5	101.7	104.5
Compensation per hour	21.5	28.8	36.7	42.8	57.6	76.3	85.4	92.3	100.0	108.3	118.9	132.8	146.4
Real compensation per hour	54.0	65.1	75.1	82.3	89.8	93.8	96.2	98.3	100.0	100.6	99.2	97.7	97.5
Unit labor cost	43.4	51.0	61.1	57.5	72.7	84.1	91.5	94.6	100.0	107.4	117.1	130.6	140.0
Unit nonlabor payments	54.3	58.5	61.1	69.3	65.0	69.3	87.3	93.7	100.0	102.5	99.9	97.1	108.8
Implicit price deflator	46.6	53.2	61.1	61.0	70.5	79.8	90.3	94.4	100.0	106.0	112.0	120.8	130.8

[1] Not available.

27. Annual changes in productivity, hourly compensation, unit costs, and prices, 1971–81

Item	Year											Annual rate of change	
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1950-81	1960-81
Business sector:													
Output per hour of all persons	3.6	3.5	−2.6	−2.4	2.2	3.3	2.4	0.6	−0.9	−0.7	1.8	r2.4	2.1
Compensation per hour	6.6	6.5	8.0	9.4	9.6	8.6	7.7	8.6	9.7	10.4	9.6	6.2	r7.2
Real compensation per hour	2.2	3.1	1.6	−1.4	0.5	2.8	1.2	0.9	−1.4	−2.8	−0.7	r2.3	1.8
Unit labor cost	2.9	2.9	5.3	12.1	7.3	5.1	5.1	8.0	10.7	11.2	7.7	3.6	5.0
Unit nonlabor payments	7.6	4.5	5.9	4.4	15.1	4.0	6.4	6.7	5.7	5.8	13.3	r3.4	r4.6
Implicit price deflator	4.4	3.4	5.5	9.5	9.8	4.7	5.6	7.5	9.0	9.4	9.5	r3.5	4.9
Nonfarm business sector:													
Output per hour of all persons	3.3	3.7	2.4	−2.5	2.0	3.2	2.2	0.6	−1.3	−0.9	1.4	r2.1	r1.8
Compensation per hour	6.6	6.7	7.6	9.4	9.6	8.1	7.5	8.6	9.3	10.2	9.7	5.9	7.0
Real compensation per hour	2.2	3.3	1.3	−1.4	0.4	2.2	1.0	0.9	−1.7	−2.9	−0.7	r2.0	1.5
Unit labor cost	3.2	2.9	5.0	12.2	7.5	4.7	5.2	8.0	10.7	11.2	8.1	r3.7	5.0
Unit nonlabor payments	7.4	3.2	1.3	5.9	16.7	5.7	6.9	5.3	4.7	8.0	13.1	r3.3	r4.5
Implicit price deflator	4.5	3.0	3.8	10.2	10.3	5.0	5.7	7.1	8.8	10.2	9.7	3.6	4.9
Nonfinancial corporations:													
Output per hour of all employees	4.8	3.0	2.6	−3.4	3.4	3.2	2.3	1.0	0.2	−0.3	1.8	(1)	2.0
Compensation per hour	6.5	5.8	7.7	9.7	10.1	8.2	8.1	8.6	9.8	10.4	9.7	(1)	6.9
Real compensation per hour	2.1	2.5	1.4	−1.1	0.9	2.3	1.6	0.8	−1.3	−2.8	−0.6	(1)	1.4
Unit labor cost	1.6	2.8	4.9	13.6	6.5	4.9	5.7	7.5	9.6	10.7	7.8	(1)	4.8
Unit nonlabor payments	7.4	2.7	1.5	7.1	20.1	4.6	5.3	4.2	2.6	10.1	14.6	(1)	r4.1
Implicit price deflator	3.5	2.8	3.8	11.4	10.9	4.8	5.6	6.4	7.2	10.5	10.0	(1)	r4.6
Manufacturing:													
Output per hour of all persons	6.1	5.0	5.4	−2.4	2.9	4.4	2.5	0.9	0.7	0.2	2.8	2.6	2.7
Compensation per hour	6.1	5.4	7.2	10.6	11.9	8.0	8.3	8.3	9.7	11.8	10.2	5.8	6.9
Real compensation per hour	1.8	2.0	0.9	−0.3	2.5	2.1	1.8	0.6	−1.4	−1.6	−0.2	2.0	1.4
Unit labor cost	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.4	9.0	11.6	7.2	3.1	4.1
Unit nonlabor payments	11.2	0.8	−3.3	−1.8	25.9	7.4	6.7	2.5	−2.6	−2.7	12.0	2.1	2.7
Implicit price deflator	3.1	0.5	0.3	9.0	13.1	4.6	6.0	6.0	5.7	7.8	8.4	2.8	3.7

[1] Not available.

r = revised.

28. Quarterly indexes of productivity, hourly compensation, unit costs, and prices, seasonally adjusted

[1977=100]

Item	Annual average		Quarterly indexes										
			1979	1980				1981				1982	
	1980	1981	IV	I	II	III	IV	I	II	III	IV	I	II
Business sector:													
Output per hour of all persons	98.9	100.7	99.1	99.3	98.2	98.9	99.3	100.7	100.7	101.0	100.2	100.0	100.3
Compensation per hour	131.4	144.1	123.0	126.7	130.0	133.1	136.1	140.0	142.5	145.6	148.2	150.9	153.4
Real compensation per hour	96.7	96.0	97.8	97.0	96.4	96.9	96.2	96.2	96.4	95.7	95.6	96.5	97.1
Unit labor cost	132.9	143.1	124.1	127.6	132.3	134.7	137.0	139.0	141.5	144.2	147.9	150.9	153.0
Unit nonlabor payments	119.3	135.2	113.2	116.0	116.2	120.6	124.6	131.8	133.4	137.4	138.3	136.4	137.3
Implicit price deflator	128.3	140.4	120.4	123.7	126.9	129.9	132.8	136.5	138.8	141.9	144.6	146.0	147.7
Nonfarm business sector:													
Output per hour of all persons	98.5	99.9	98.8	98.7	97.6	98.4	99.2	100.4	100.0	100.0	99.1	99.2	99.3
Compensation per hour	130.9	143.6	122.7	126.2	129.3	132.6	135.7	139.5	142.0	145.1	147.7	150.4	152.6
Real compensation per hour	96.3	95.7	97.6	96.6	96.0	96.5	95.9	96.0	96.0	95.4	95.3	96.3	96.6
Unit labor cost	133.0	143.8	124.1	127.8	132.5	134.7	136.8	139.0	141.9	145.1	149.0	151.6	153.7
Unit nonlabor payments	119.1	134.8	111.3	115.2	116.7	120.3	124.4	131.5	132.8	136.7	138.4	136.7	137.4
Implicit price deflator	128.3	140.8	119.8	123.6	127.2	129.9	132.7	136.5	138.9	142.3	145.5	146.6	148.2
Nonfinancial corporations:													
Output per hour of all employees	100.8	102.7	100.6	100.8	99.8	101.1	101.7	102.8	102.7	102.8	102.2	102.3	102.9
Compensation per hour	131.6	144.4	123.1	126.8	130.0	133.4	136.3	140.4	142.7	145.7	148.6	151.7	154.1
Real compensation per hour	96.8	96.2	97.9	97.0	96.4	97.1	96.3	96.5	96.5	95.8	95.9	97.1	97.5
Total unit costs	131.0	143.4	121.4	125.0	130.4	132.9	135.8	138.3	141.7	144.7	149.1	151.8	154.0
Unit labor cost	130.5	140.6	122.4	125.8	130.2	131.9	134.1	136.5	138.9	141.7	145.4	148.3	149.7
Unit nonlabor costs	132.5	151.4	118.7	122.7	131.0	135.7	140.7	143.4	149.6	153.1	159.6	161.8	166.2
Unit profits	87.9	101.6	84.1	91.1	81.9	87.8	90.5	104.7	98.8	105.2	97.6	86.1	82.4
Implicit price deflator	126.1	138.6	117.1	121.1	124.8	127.7	130.6	134.5	136.8	140.2	143.2	144.3	145.8
Manufacturing:													
Output per hour of all persons	101.7	104.5	101.9	102.6	100.4	100.3	103.6	105.2	105.0	105.0	102.8	102.1	102.2
Compensation per hour	132.8	146.4	122.6	127.1	130.9	135.2	138.4	142.6	144.9	147.3	150.7	154.7	157.6
Real compensation per hour	97.7	97.5	97.4	97.3	97.1	98.5	97.8	98.0	97.9	96.8	97.2	99.0	99.7
Unit labor cost	130.6	140.0	120.3	123.9	130.3	134.9	133.6	135.5	138.0	140.3	146.6	151.5	154.3

29. Percent change from preceding quarter and year in productivity, hourly compensation, unit costs, and prices, seasonally adjusted at annual rate

[1977=100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	IV 1980 to I 1981	I 1981 to II 1981	II 1981 to III 1981	III 1981 to IV 1981	IV 1981 to I 1982	I 1982 to II 1982	I 1980 to I 1981	II 1980 to II 1981	III 1980 to III 1981	IV 1980 to IV 1981	I 1981 to I 1982	II 1981 to II 1982
Business sector:												
Output per hour of all persons	5.6	0.0	1.1	−2.9	−1.0	1.2	1.4	2.5	2.2	0.9	−0.7	−0.4
Compensation per hour	11.7	7.5	9.0	7.4	7.3	6.9	10.5	9.7	9.4	8.9	7.8	7.6
Real compensation per hour	0.2	0.5	−2.6	−0.4	3.9	2.2	−0.7	−0.1	−1.3	−0.6	0.3	0.7
Unit labor costs	5.7	7.5	7.8	10.6	8.4	5.6	8.9	6.9	7.1	7.9	8.6	8.1
Unit nonlabor payments	25.0	4.9	12.5	2.9	−5.4	2.7	13.7	14.8	13.9	11.0	3.5	3.0
Implicit price deflator	11.6	6.6	9.3	8.0	3.8	4.7	10.4	9.4	9.2	8.9	6.9	6.4
Nonfarm business sector:												
Output per hour of all persons	4.9	−1.3	−0.3	−3.5	0.6	0.5	1.7	2.5	1.6	−0.1	−1.1	−0.7
Compensation per hour	11.8	7.1	9.0	7.3	7.7	6.0	10.6	9.8	9.4	8.8	7.8	7.5
Real compensation per hour	0.4	0.1	−2.6	−0.5	4.3	1.4	−0.6	0.0	−1.2	−0.6	0.3	0.6
Unit labor costs	6.6	8.6	9.3	11.2	7.1	5.5	8.8	7.1	7.7	8.9	9.0	8.3
Unit nonlabor payments	24.9	4.0	12.1	5.1	−4.6	2.0	14.1	13.8	13.6	11.2	4.0	3.5
Implicit price deflator	12.1	7.1	10.2	9.2	3.3	4.4	10.4	9.2	9.6	9.6	7.4	6.7
Nonfinancial corporations:												
Output per hour of all employees	4.7	−0.4	0.3	−2.3	0.5	2.3	2.1	2.9	1.7	0.6	−0.5	2.3
Compensation per hour	12.4	6.9	8.5	8.3	8.6	6.4	10.7	9.8	9.2	9.0	8.1	6.4
Real compensation per hour	0.9	−0.1	−3.0	0.5	5.2	1.7	−0.5	0.1	−1.4	−0.5	0.6	1.7
Total unit costs	7.5	10.2	8.6	12.8	7.4	6.0	10.6	8.7	8.9	9.8	9.7	8.7
Unit labor costs	7.4	7.3	8.2	10.9	8.1	4.0	8.5	6.7	7.5	8.4	8.6	7.8
Unit nonlabor costs	8.0	18.5	9.8	17.8	5.7	11.4	16.9	14.2	12.9	13.4	12.8	11.1
Unit profits	79.5	−20.8	28.4	−25.9	−39.4	−16.0	14.9	20.7	10.7	7.9	−17.8	−16.6
Implicit price deflator	12.3	7.1	10.2	8.9	3.0	4.4	11.0	9.6	9.7	9.6	7.3	4.4
Manufacturing:												
Output per hour of all persons	6.3	−0.7	−0.1	−8.2	−2.4	0.2	2.6	4.5	4.7	−0.8	−2.9	−2.7
Compensation per hour	12.7	6.6	6.8	9.6	11.1	7.8	12.2	10.7	8.9	8.9	8.5	8.8
Real compensation per hour	1.2	−0.4	−4.6	1.6	7.6	3.1	0.8	0.9	−1.7	−0.6	1.0	1.8
Unit labor costs	6.0	7.3	6.8	19.4	13.9	7.7	9.3	5.9	4.0	9.8	11.7	11.8

WAGE AND COMPENSATION DATA

DATA FOR THE EMPLOYMENT COST INDEX are reported to the Bureau of Labor Statistics by a sample of 2,000 private nonfarm establishments and 750 State and local government units selected to represent total employment in those sectors. On average, each reporting unit provides wage and compensation information on five well-specified occupations.

Data on negotiated wage and benefit changes are obtained from contracts on file at the Bureau, direct contact with the parties, and secondary sources.

Definitions

The **Employment Cost Index** (ECI) is a quarterly measure of the average change in the cost of employing labor. The rate of total compensation, which comprises wages, salaries, and employer costs for employee benefits, is collected for workers performing specified tasks. Employment in each occupation is held constant over time for all series produced in the ECI, except those by region, bargaining status, and area. As a consequence, only changes in compensation are measured. Industry and occupational employment data from the 1970 Census of Population are used in deriving constant weights for the ECI. While holding total industry and occupational employment fixed, in the estimation of indexes by region, bargaining status, and area, the employment in those measures is allowed to vary over time in accord with changes in the sample. The rate of change (in percent) is available for wages and salaries, as well as for total compensation. Data are collected for the pay period including the 12th day of the survey months of March, June, September, and December. The statistics are neither annualized nor adjusted for seasonal influence.

Wages and salaries consist of earnings before payroll deductions, excluding premium pay for overtime, work on weekends and holidays, and shift differentials. Production bonuses, incentive earnings, commissions, and cost-of-living adjustments are included; nonproduction bonuses are included with other supplemental pay items in the benefits category; and payments-in-kind, free room and board, and tips are excluded. *Benefits* include supplemental pay, insurance, retirement and savings plans, and hours-related and legally required benefits.

Data on negotiated wage changes apply to private nonfarm industry collective bargaining agreements covering 1,000 workers or more. Data on compensation changes apply only to those agreements covering 5,000 workers or more. *First-year* wage or compensation changes refer to average negotiated changes for workers covered by settlements reached in the period and implemented within the first 12 months after the effective date of the agreement. *Changes over the life of the agreement* refer to all adjustments specified in the contract, expressed as an average annual rate. These measures exclude wage changes that may occur under cost-of-living adjustment clauses, that are triggered by movements in the Consumer Price Index. *Wage-rate changes* are expressed as a percent of straight-time hourly earnings; *compensation changes* are expressed as a percent of total wages and benefits.

Effective wage adjustments reflect all negotiated changes implemented in the reference period, regardless of the settlement date. They include changes from settlements reached during the period, changes deferred from contracts negotiated in an earlier period, and cost-of-living adjustments. The data also reflect contracts providing for no wage adjustment in the period. Effective adjustments and each of their components are prorated over all workers in bargaining units with at least 1,000 workers.

Notes on the data

The Employment Cost Index data series began in the fourth quarter of 1975, with the quarterly percent change in wages and salaries in the private nonfarm sector. Data on employer costs for employee benefits were included in 1980, to produce a measure of the percent change in employers' cost for employees' total compensation. State and local government units were added to the ECI coverage in 1981, providing a measure of total compensation change in the civilian nonfarm economy.

Data for the broad white-collar, blue-collar, and service worker groups, and the manufacturing, nonmanufacturing, and service industry groups are presented in the ECI. Additional occupation and industry detail are provided for the wages and salaries component of total compensation in the private nonfarm sector. For State and local government units, additional industry detail is shown for both total compensation and its wages and salaries component.

Historical indexes (June 1981 = 100) of the quarterly rates of changes presented in the ECI are also available.

For a more detailed discussion of the ECI, see chapter 25, "The Employment Cost Index," of the BLS *Handbook of Methods* (Bulletin 1910), and the *Monthly Labor Review* articles: "Employment Cost Index: a measure of change in the 'price of labor,'" July 1975; "How benefits will be incorporated into the Employment Cost Index," January 1978; and "The Employment Cost Index: recent trends and expansion," May 1982.

Additional data for the ECI and other measures of wage and compensation changes appear in *Current Wage Developments*, a monthly periodical of the Bureau.

30. Employment Cost Index, total compensation, by occupation and industry group

[June 1981 = 100]

Series	1980			1981				1982		Percent change	
										3 months ended	12 months ended
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	June 1982	
Civilian nonfarm workers[1]	—	—	—	—	100.0	102.6	104.5	106.3	107.5	1.1	7.5
Workers, by occupational group											
White-collar workers	—	—	—	—	100.0	102.7	104.9	106.5	107.7	1.1	7.7
Blue-collar workers	—	—	—	—	100.0	102.3	104.1	105.7	107.1	1.3	7.1
Service workers	—	—	—	—	100.0	102.8	104.2	107.2	108.3	1.0	8.3
Workers, by industry division											
Manufacturing	—	—	—	—	100.0	102.1	104.0	106.0	107.2	1.1	7.2
Nonmanufacturing	—	—	—	—	100.0	102.8	104.8	106.4	107.7	1.2	7.7
Services	—	—	—	—	100.0	104.4	107.1	108.2	109.2	.9	9.2
Public administration[2]	—	—	—	—	100.0	104.3	106.0	108.1	109.1	.9	9.1
Private nonfarm workers	90.7	92.8	94.7	98.1	100.0	102.0	104.0	105.8	107.2	1.3	7.2
Workers, by occupational group											
White-collar workers	90.8	92.6	94.5	98.3	100.0	101.8	104.0	105.8	107.2	1.3	7.2
Blue-collar workers	90.5	93.0	94.9	97.8	100.0	102.2	104.0	105.6	107.0	1.3	7.0
Service workers	90.8	92.7	94.3	99.3	100.0	101.9	103.1	106.7	107.9	1.1	7.9
Workers, by industry division											
Manufacturing	90.5	92.6	94.7	98.0	100.0	102.1	104.0	106.0	107.2	1.1	7.2
Nonmanufacturing	90.8	92.9	94.7	98.2	100.0	102.0	103.9	105.7	107.1	1.3	7.1
State and local government workers	—	—	—	—	100.0	105.3	107.4	108.8	109.3	.5	9.3
Workers, by occupational group											
White-collar workers	—	—	—	—	100.0	105.7	107.8	109.1	109.5	.4	9.5
Blue-collar workers	—	—	—	—	100.0	104.2	105.9	108.2	108.9	.6	8.9
Workers, by industry division											
Services	—	—	—	—	100.0	105.8	107.9	109.0	109.4	.4	9.4
Schools	—	—	—	—	100.0	106.0	107.9	108.9	109.1	.2	9.1
Elementary and secondary	—	—	—	—	100.0	106.3	108.3	109.3	109.5	.2	9.5
Hospitals and other services[3]	—	—	—	—	100.0	105.0	107.8	109.5	110.3	.7	10.3
Public administration[2]	—	—	—	—	100.0	104.3	106.0	108.1	109.1	.9	9.1

[1] Excludes household and Federal workers.

[2] Consists of legislative, judicial, administrative, and regulatory activities.

[3] Includes, for example, library, social, and health services.

NOTE: Dashes indicate data not available.

31. Employment Cost Index, wages and salaries, by occupation and industry group

[June 1981 = 100]

Series	1980			1981				1982		Percent change	
										3 months ended	12 months ended
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	June 1982	
Civilian nonfarm workers[1]	—	—	—	—	100.0	102.5	104.4	106.3	107.3	0.9	7.3
Workers, by occupational group											
White-collar workers	—	—	—	—	100.0	102.6	104.7	106.7	107.6	.8	7.6
Blue-collar workers	—	—	—	—	100.0	102.4	104.0	105.5	106.7	1.1	6.7
Service workers	—	—	—	—	100.0	102.5	103.6	106.8	107.9	1.0	7.9
Workers, by industry division											
Manufacturing	—	—	—	—	100.0	102.1	104.0	105.9	107.0	1.0	7.0
Nonmanufacturing	—	—	—	—	100.0	102.7	104.5	106.5	107.5	.9	7.5
Services	—	—	—	—	100.0	104.4	106.6	108.6	109.5	.8	9.5
Public administration[2]	—	—	—	—	100.0	103.8	105.5	107.5	108.4	.8	8.4
Private nonfarm workers	91.5	93.5	95.4	98.0	100.0	102.0	103.8	105.9	107.1	1.1	7.1
Workers, by occupational group											
White-collar workers	91.4	93.3	95.2	98.1	100.0	101.8	103.9	106.2	107.3	1.0	7.3
Professional and technical workers	90.8	93.2	95.3	98.2	100.0	103.3	105.5	108.0	109.4	1.3	9.4
Managers and administrators	92.0	93.5	94.7	98.6	100.0	101.6	102.8	105.8	107.2	1.3	7.2
Salesworkers	90.7	92.2	94.8	96.2	100.0	98.0	101.9	102.2	101.8	−.4	1.8
Clerical workers	91.9	93.8	95.7	98.6	100.0	102.7	104.2	107.0	108.3	1.2	8.3
Blue-collar workers	91.6	93.8	95.7	97.7	100.0	102.3	103.9	105.4	106.6	1.1	6.6
Craft and kindred workers	91.4	94.0	96.1	97.8	100.0	102.9	104.3	106.2	107.6	1.3	7.6
Operatives, except transport	91.5	93.6	95.5	97.8	100.0	102.1	104.1	105.4	106.6	1.1	6.6
Transport equipment operatives	92.2	93.5	95.3	96.8	100.0	101.0	102.7	103.2	104.1	.9	4.1
Nonfarm laborers	91.8	93.9	95.7	97.5	100.0	101.5	103.3	104.1	105.1	1.0	5.1
Service workers	91.9	93.4	94.8	99.2	100.0	101.8	102.7	106.7	107.9	1.1	7.9
Workers, by industry division											
Manufacturing	91.8	93.6	95.7	97.9	100.0	102.1	104.0	105.9	107.0	1.0	7.0
Durables	91.2	93.5	95.7	97.9	100.0	102.1	104.5	106.3	107.4	1.0	7.4
Nondurables	92.7	93.8	95.7	97.8	100.0	102.0	103.1	105.3	106.3	.9	6.3
Nonmanufacturing	91.3	93.4	95.2	98.1	100.0	102.0	103.8	105.9	107.1	1.1	7.1
Construction	91.9	94.5	95.9	97.6	100.0	103.0	104.3	105.9	107.3	1.3	7.3
Transportation and public utilities	90.2	93.1	95.6	97.7	100.0	102.0	103.6	105.7	106.9	1.1	6.9
Wholesale and retail trade	92.2	93.6	95.1	98.2	100.0	101.3	102.3	103.9	105.8	1.8	5.8
Wholesale trade	92.1	93.0	95.9	98.5	100.0	102.0	103.4	106.3	108.9	2.4	8.9
Retail trade	92.2	93.8	94.8	98.1	100.0	101.0	101.9	103.0	104.5	1.5	4.5
Finance, insurance, and real estate	89.4	91.2	93.1	95.7	100.0	98.3	102.3	103.7	102.4	−1.3	2.4
Services	91.9	94.2	95.7	99.6	100.0	103.6	105.8	108.8	110.0	1.1	10.0
State and local government workers	—	—	—	—	100.0	105.0	107.0	108.2	108.7	.5	8.7
Workers, by occupational group											
White-collar workers	—	—	—	—	100.0	105.4	107.5	108.5	108.9	.4	8.9
Blue-collar workers	—	—	—	—	100.0	103.9	105.5	107.5	107.9	.4	7.9
Workers, by industry division	—	—	—								
Services				—	100.0	105.5	107.6	108.4	108.8	.4	8.8
Schools	—	—	—	—	100.0	105.7	107.7	108.3	108.5	.2	8.5
Elementary and secondary	—	—	—	—	100.0	106.0	107.9	108.7	108.8	.1	8.8
Hospitals and other services[3]	—	—	—	—	100.0	104.6	107.3	108.8	109.5	.6	9.5
Public administration[2]	—	—	—	—	100.0	c 103.8	105.5	107.5	108.4	.8	8.4

[1] Excludes household and Federal workers.

[2] Consists of legislative, judicial, administrative, and regulatory activities.

[3] Includes, for example, library, social, and health services.

NOTE: Dashes indicate data not available.

c= corrected.

32. Employment Cost Index, private nonfarm workers, by bargaining status, region, and area size

[June 1981 = 100]

Series	1980			1981				1982		Percent change	
										3 months ended	12 months ended
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	June 1982	
COMPENSATION											
Workers, by bargaining status[1]											
Union	89.7	92.4	94.7	97.6	100.0	102.5	104.8	106.5	108.4	1.8	8.4
Manufacturing	—	—	—	—	100.0	102.3	104.6	106.3	108.0	1.6	8.0
Nonmanufacturing	—	—	—	—	100.0	102.7	105.0	106.8	108.7	1.8	8.7
Nonunion	91.1	92.8	94.6	98.4	100.0	101.7	103.5	105.3	106.5	1.1	6.5
Manufacturing	—	—	—	—	100.0	101.8	103.5	105.7	106.6	.9	6.6
Nonmanufacturing	—	—	—	—	100.0	101.7	103.5	105.2	106.4	1.1	6.4
Workers, by area size[1]											
Metropolitan areas	90.6	92.8	94.7	98.1	100.0	102.1	104.1	105.7	107.2	1.4	7.2
Other areas	90.3	91.9	94.2	98.1	100.0	101.8	c103.2	106.2	107.0	.8	7.0
WAGES AND SALARIES											
Workers, by bargaining status[1]											
Union	90.8	93.5	95.8	97.4	100.0	102.7	105.0	106.5	108.1	1.5	8.1
Manufacturing	91.3	93.8	96.1	97.7	100.0	102.6	104.7	105.9	107.3	1.3	7.3
Nonmanufacturing	90.4	93.1	95.5	97.1	100.0	102.8	105.2	107.0	108.8	1.7	8.8
Nonunion	91.8	93.4	95.1	98.2	100.0	101.6	103.2	105.6	106.5	.9	6.5
Manufacturing	92.3	93.4	95.4	97.9	100.0	101.7	103.3	105.9	106.7	.8	6.7
Nonmanufacturing	91.5	93.4	95.0	98.3	100.0	101.6	103.2	105.5	106.4	.9	6.4
Workers, by region[1]											
Northeast	92.5	94.2	96.0	98.3	100.0	101.7	104.4	106.1	106.7	.6	6.7
South	91.4	93.2	94.9	98.0	100.0	101.9	102.8	105.7	107.4	1.6	7.4
North Central	91.6	93.3	95.3	98.1	100.0	101.6	103.3	104.7	106.1	1.3	6.1
West	90.4	93.5	95.3	97.9	100.0	103.2	105.1	107.9	108.6	.6	8.6
Workers, by area size[1]											
Metropolitan areas	91.4	93.5	95.4	97.9	100.0	102.1	104.0	105.9	107.1	1.1	7.1
Other areas	91.5	92.9	95.1	98.3	100.0	101.8	103.1	106.0	106.8	.8	6.8

---

[1] The indexes are calculated differently from those for the occupation and industry groups. For a detailed description of the index calculation, see BLS *Handbook of Methods*, Bulletin 1910.

c = corrected.

33. Wage and compensation change, major collective bargaining settlements, 1977 to date

[In percent]

Measure	Annual average					Quarterly average								
						1980			1981				1982 p	
	1977	1978	1979	1980	1981	II	III	IV	I	II	III	IV	I	II
Total compensation changes covering 5,000 workers or more, all industries:														
First year of contract	9.6	8.3	9.0	10.4	10.2	10.2	11.4	8.5	7.7	11.6	10.5	11.0	1.9	2.1
Annual rate over life of contract	6.2	6.3	6.6	7.1	8.3	7.4	7.2	6.1	7.2	10.8	8.1	5.8	1.2	1.6
Wage rate changes covering at least 1,000 workers, all industries:														
First year of contract	7.8	7.6	7.4	9.5	9.8	9.1	10.5	8.3	7.1	11.8	10.8	9.0	3.0	2.9
Annual rate over life of contract	5.8	6.4	6.0	7.1	7.9	7.3	7.4	6.5	6.2	9.7	8.7	5.7	2.8	2.7
Manufacturing:														
First year of contract	8.4	8.3	6.9	7.4	7.2	6.7	8.4	7.8	6.4	8.2	9.0	6.6	2.5	1.3
Annual rate over life of contract	5.5	6.6	5.4	5.4	6.1	5.1	5.6	5.8	5.5	6.7	7.5	5.4	2.7	1.2
Nonmanufacturing (excluding construction):														
First year of contract	8.0	8.0	7.6	9.5	9.8	10.3	9.5	8.2	8.0	11.8	8.6	9.6	2.6	6.5
Annual rate over life of contract	5.9	6.5	6.2	6.6	7.3	8.5	5.9	6.8	7.3	9.1	7.2	5.6	2.1	5.7
Construction:														
First year of contract	6.3	6.5	8.8	13.6	13.5	12.2	15.4	14.3	11.4	12.9	16.4	11.4	9.1	5.8
Annual rate over life of contract	6.3	6.2	8.3	11.5	11.3	10.4	13.0	12.0	10.3	11.1	12.4	11.7	8.9	6.0

p = preliminary.

34. Effective wage adjustments in collective bargaining units covering 1,000 workers or more, 1977 to date

Measure	Year					Year and quarter								
	1977	1978	1979	1980	1981	1980			1981				1982 p	
						II	III	IV	I	II	III	IV	I	II
Average percent adjustment (including no change):														
All industries	8.0	8.2	9.1	9.9	9.5	3.3	3.5	1.3	1.7	3.2	3.3	1.5	1.0	1.9
Manufacturing	8.4	8.6	9.6	10.2	9.4	3.4	2.9	1.7	2.3	2.4	3.1	1.9	.9	.9
Nonmanufacturing	7.6	7.9	8.8	9.7	9.5	3.2	4.0	1.1	1.2	3.8	3.4	1.1	1.0	2.6
From settlements reached in period	3.0	2.0	3.0	3.6	2.5	1.0	1.7	.5	.4	1.1	.5	.4	.2	.3
Deferred from settlements reached in earlier period	3.2	3.7	3.0	3.5	3.8	1.4	1.2	.3	.5	1.4	1.5	.4	.6	1.3
From cost-of-living clauses	1.7	2.4	3.1	2.8	3.2	.8	.7	.6	.7	.7	1.2	.6	.3	.2
Total number of workers receiving wage change (in thousands) [1]	—	—	—	—	8,648	—	—	—	3,855	4,701	4,364	3,225	2,955	3,359
From settlements reached in period	—	—	—	—	2,270	—	—	—	579	909	540	604	199	407
Deferred from settlements reached in earlier period	—	—	—	—	6,267	—	—	—	888	2,055	3,023	882	1,038	1,629
From cost-of-living clauses	—	—	—	—	4,593	—	—	—	2,639	2,669	2,934	2,179	1,960	1,496
Number of workers receiving no adjustments (in thousands)	—	—	—	—	145	—	—	—	4,937	4,092	4,426	5,568	5,767	5,364

[1] The total number of workers who received adjustments does not equal the sum of workers that received each type of adjustment, because some workers received more than one type of adjustment during the period.

p = preliminary.

WORK STOPPAGE DATA

WORK STOPPAGES include all known strikes or lockouts involving 1,000 workers or more and lasting a full shift or longer. Data are based largely on newspaper accounts and cover all workers idle one shift or more in establishments directly involved in a stoppage. They do not measure the indirect or secondary effect on other establishments whose employees are idle owing to material or service shortages.

Estimates of days idle as a percent of estimated working time measures only the impact of larger strikes (1,000 workers or more). Formerly, these estimates measured the impact of strikes involving 6 workers or more; that is, the impact of virtually *all* strikes. Due to budget stringencies, collection of data on strikes involving 6 workers or more was discontinued with the December 1981 data.

35. Work stoppages involving 1,000 workers or more, 1947 to date

Month and year		Number of stoppages		Workers involved		Days idle	
		Beginning in month or year	In effect during month or year	Beginning in month or year (in thousands)	In effect during month (in thousands)	Number (in thousands)	Percent of estimated working time
1947		270	....	1,629	....	25,720	
1948		245	....	1,435	....	26,127	.22
1949		262	....	2,537	....	43,420	.38
1950		424	....	1,698	....	30,390	.26
1951		415	....	1,462	....	15,070	.12
1952		470	....	2,746	....	48,820	.38
1953		437	....	1,623	....	18,130	.14
1954		265	....	1,075	....	16,630	.13
1955		363	....	2,055	....	21,180	.16
1956		287	....	1,370	....	26,840	.20
1957		279	....	887	....	10,340	.07
1958		332	....	1,587	....	17,900	.13
1959		245	....	1,381	....	60,850	.43
1960		222	....	896	....	13,260	.09
1961		195	....	1,031	....	10,140	.07
1962		211	....	793	....	11,760	.08
1963		181	....	512	....	10,020	.07
1964		246	....	1,183	....	16,220	.11
1965		268	....	999	....	15,140	.10
1966		321	....	1,300	....	16,000	.10
1967		381	....	2,192	....	31,320	.18
1968		392	....	1,855	....	35,567	.20
1969		412	....	1,576	....	29,397	.16
1970		381	....	2,468	....	52,761	.29
1971		298	....	2,516	....	35,538	.19
1972		250	....	975	....	16,764	.09
1973		317	....	1,400	....	16,260	.08
1974		424	....	1,796	....	31,809	.16
1975		235	....	965	....	17,563	.09
1976		231	....	1,519	....	23,962	.12
1977		298	....	1,212	....	21,258	.10
1978		219	....	1,006	....	23,774	.11
1979		235	....	1,021	....	20,409	.09
1980		187	....	795	....	20,844	.09
1981		145	....	729	....	16,908	.07
1981:	January	6	12	12.0	29.6	257.9	.01
	February	7	10	10.7	20.9	118.5	.01
	March	18	20	201.6	207.8	981.8	.04
	April	17	27	48.0	223.5	4,085.2	.20
	May	18	27	85.1	259.0	4,454.0	.24
	June	30	43	200.1	415.1	2,618.3	.13
	July	23	38	80.1	125.4	1,575.5	.08
	August	9	17	36.2	86.6	1,017.9	.05
	September	5	10	26.3	65.2	898.8	.06
1982[p]:	January	2	4	6.1	11.4	199.9	.01
	February	2	6	2.5	13.9	236.9	.01
	March	3	8	8.3	21.3	352.2	.02
	April	9	16	35.7	55.3	480.3	.02
	May	14	21	43.7	60.3	636.1	.03
	June	17	25	41.4	64.5	894.0	.04
	July	11	22	[r]36.3	[r]62.2	[r]830.9	.04
	August	[r]15	[r]24	[r]41.9	[r]58.8	[r]785.9	.04
	September	15	29	381.4	425.0	2,167.2	.11

p=preliminary. r=revised.

Published by BLS in September

SALES PUBLICATIONS

BLS Bulletins

Analyzing 1981 Earnings Data From the Current Population Survey. Bulletin 2149, 27 pp., $3.75 (GPO Stock No. 029-001-02715-0). A reprint of two April 1982 Monthly Labor Review articles—Usual weekly earnings: another look at intergroup differences and basic trends; and Earnings of men and women: a look at specific occupations.

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Area Wage Survey Bulletins

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Cincinnati, Ohio-Kentucky-Indiana, Metropolitan Area, July 1982. Bulletin 3015-32, 53 pp., $4.75 (GPO Stock No. 029-001-90152-6).

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South Bend, Indiana, August 1982. Bulletin 3015-37, 40 pp., $4.50 (GPO Stock No. 029-001-90157-7).

Periodicals

CPI Detailed Report. July issue provides a comprehensive report on price movements for the month, questions and answers on upcoming changes in the measurement of homeownership costs, statistical tables, charts, and technical notes. 81 pp., $3.50 ($20 per year).

Current Wage Developments. August issue includes employee wage and benefit changes and collective bargaining settlements in July and a special report on collective bargaining settlements in the private sector during the first 6 months of 1982. 60 pp. September issue includes employee wage and benefit changes and collective bargaining settlements in August and special reports on State and local government collective bargaining settlements during the first 6 months of 1982 and on the Employment Cost Index for June of 1982. 56 pp., $2.50 ($14 per year).

Employment and Earnings. September issue covers employment and unemployment developments in August, plus regular statistical tables on national, State, and area employment, unemployment, hours, and earnings. 124 pp., $3.75 ($31 per year).

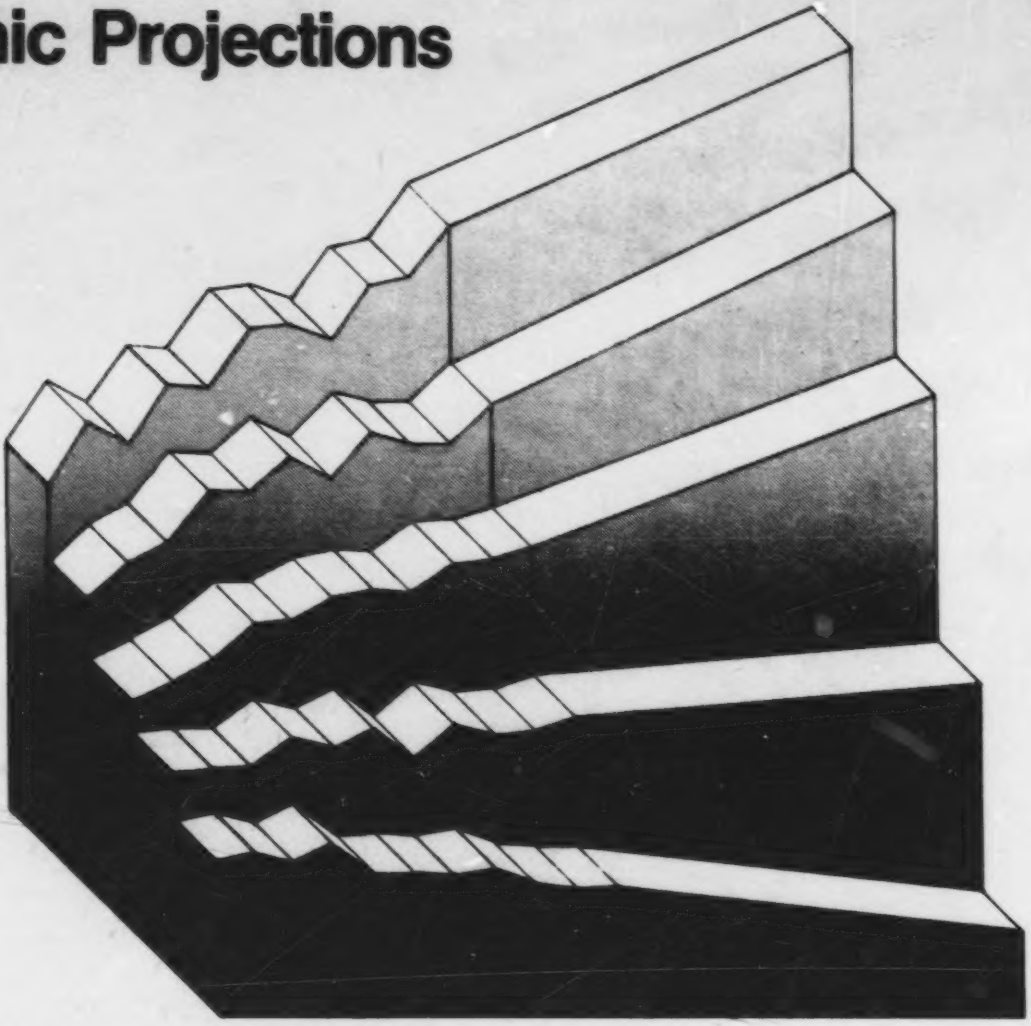
Occupational Outlook Quarterly. Fall issue features articles on industrial robots, emerging occupations, the shortage of machinists, the accuracy of BLS' 1970-80 projections, manufacturing engineering, and comparing occupations using four factors—size, projected rate of growth, average earnings, and susceptibility to unemployment. 32 pp., $2.75 ($8 per year).

Producer Prices and Price Indexes. July issue includes a comprehensive report on price movements for the month, and provides information on the addition of data from the Producer Price Index revision program, changes in presentation of detailed product price indexes, availability of computer tape for Producer Price Index revision data, and phase-out of the industry sector price indexes, plus regular charts, text, tables, and technical notes. 130 pp., $3.25 ($20 per year).

Supplement to Producer Prices and Price Indexes: Data for 1981. Presents monthly indexes and annual averages for 1981, information on relative importance of index components at the end of the year, historical annual indexes for selected stage-of-processing groupings, rebased historical indexes for bituminous coal by region, and 1981 indexes for the newly introduced postal services series. 169 pp., $3.50 (included in $20 subscription price for Producer Prices and Price Indexes).

U.S. Department of State Indexes of Living Costs Abroad, Quarters Allowances, and Hardship Differentials. Tabulations computed quarterly by the Allowances Staff of the Department of State for use in establishing allowances to compensate American civilian government employees for costs and hardships related to assignments abroad. The information is also used by many business firms and private organizations to assist in establishing private compensation systems. Report 670. 8 pp., $1.75 ($6.50 per year).

Economic Projections to 1990



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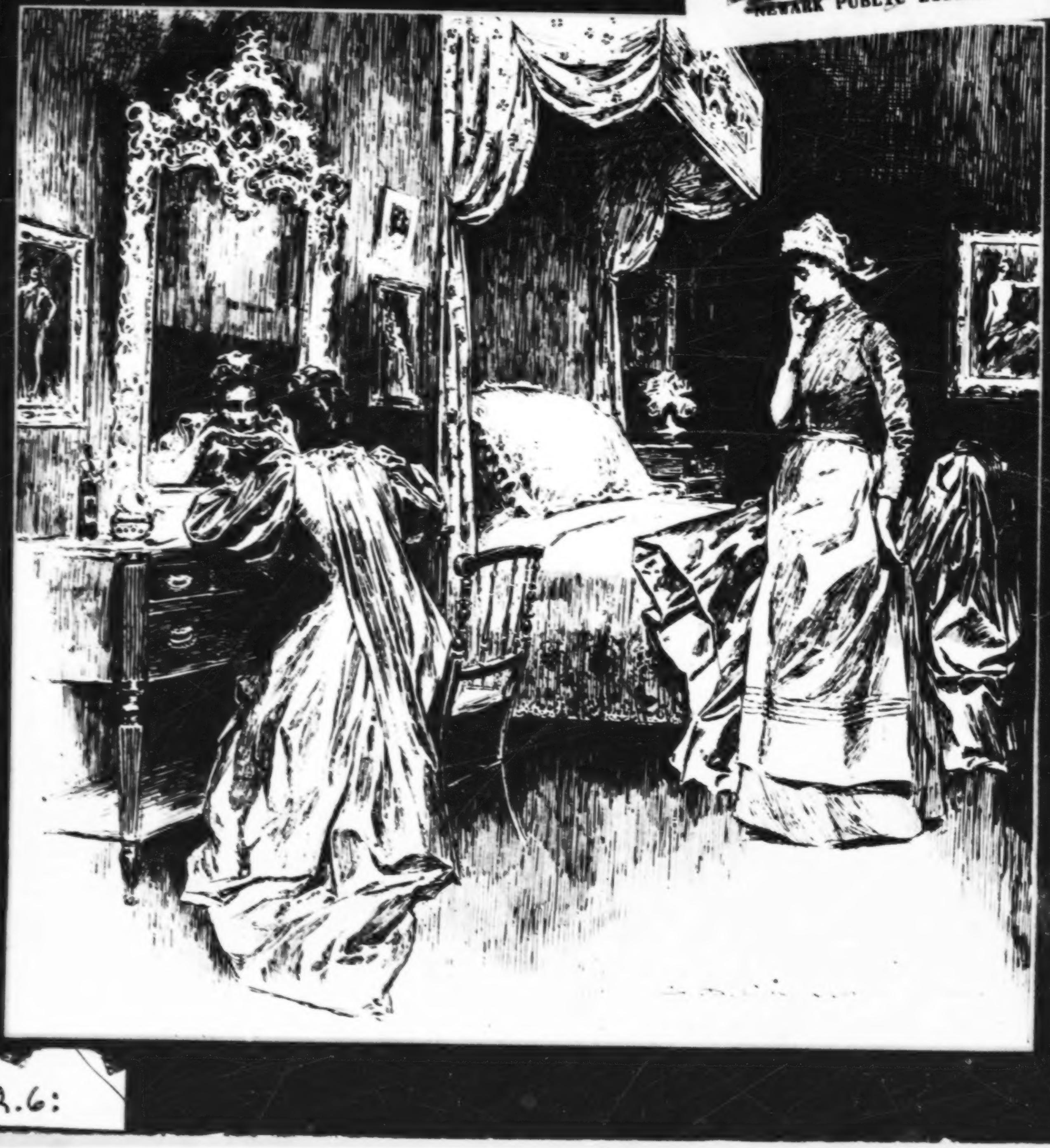

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Labor Month In Review

JOB SAFETY. The Bureau of Labor Statistics reported results of its annual survey of job-related injuries and illnesses. The data, collected during 1982, show that occupational injuries and illnesses declined in 1981. The all-industry incidence rate was 8.3 injuries and illnesses per 100 full-time workers, compared with 8.7 in 1980.

The latest survey shows that the numbers of injuries and illnesses both with and without loss of worktime declined in the private sector. Because the number of employees on the job and the hours they worked changed little between 1980 and 1981, the injuries and illnesses rate also declined.

In 1981, there were 4,370 work-related deaths in units employing 11 workers or more, compared with 4,400 in 1980. The corresponding fatality rate was essentially unchanged—7.6 per 100,000 workers in 1981 versus 7.7 in 1980.

Release of the 1981 survey results marks the 10th full year of data collection under the Occupational Safety and Health Act of 1970. Over these years, during which employment expanded by about 15 million, injuries declined from about 1 in every 10 workers in 1972 to 1 in every 13 in 1981. The rate for lost-time injuries, which rose between 1972 and 1979, declined in the last 2 years; however, the rate of injuries without loss of worktime has fallen steadily over the 10-year period.

Occupational injuries. Work-related injuries occurred at a rate of 8.1 per 100 full-time workers during 1981—down from 8.5 in 1980.

Among industry divisions, increases in the injury incidence rates occurred in the agriculture, forestry, and fishing industries and in mining. Finance, insurance, and real estate and retail trade showed no change, and the injury rate fell in construction, manufacturing, transportation and public utilities, wholesale trade, and services. The rate for establishments in construction, which is the highest of all industry divisions, declined from 15.5 in 1980 to 14.9 in 1981. In manufacturing, the rate declined from 11.8 to 11.1 The lowest rate (1.9) occurred in finance, insurance, and real estate.

The incidence rate of injuries involving lost workdays declined in 5 of the 9 industry divisions. While establishments in the agriculture, forestry, and fishing division showed a small increase, finance, insurance, and real estate, retail trade, and services showed no change in the rate.

Of the 72 major industry groups, incidence rates decreased in 50, increased in 14, and remained unchanged in 8. Incidence rates for injuries involving lost workdays decreased in 43, increased in 16, and were unchanged in 13 of the 72 industries.

The severity of injuries is reflected in the incidence rate of lost workdays. In 1981, there were 60.4 lost workdays per 100 full-time workers—down from 63.7 in 1980. The lost workdays incidence rate in mining continues to be the highest among all industry divisions and has been more than twice the national average since 1977. But because the number of lost workdays associated with each injury in mining declined, the lost workdays rate declined, from 162.8 in 1980 to 145.7 in 1981, the largest drop in any industry division.

The injury incidence rate fell from 1980 to 1981 in all employment-size groups, except for establishments with 50 to 99 employees, which showed no change. As in previous years, rates in establishments with fewer than 50 workers or with 1,000 workers or more were lower than mid-size establishment rates. Rates continued to be highest in the 100-to-249-employee size firms. Only in the manufacturing division did the incidence rate drop for each size category.

Occupational illnesses. Occupational illnesses include any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. The incidence of occupational illnesses measured by the annual survey refers to the number of new illness cases occurring during a year and does not measure continuing conditions of illness reported in previous surveys. Illnesses are recorded only for the year in which they are recognized and diagnosed as work-related.

From both statistical and procedural points of view, occupational illness estimates generated from the annual survey provide a valid measure of recognized acute cases. However, current statistics do not adequately reflect that portion of occupational illnesses which are chronic or long-latent because of problems of detection and recognition.

About 126,100 occupational illnesses were recognized in 1981; the number recognized in 1980 was 130,200. In both years, illnesses accounted for only 2.3 percent of total injuries and illnesses. Skin diseases or disorders continued to account for the majority of all illnesses—about 4 of every 10 cases. This is largely because they are easier to recognize and diagnose than other diseases.

Background of survey. The Annual Survey of Occupational Injuries and Illnesses is a Federal/State cooperative program in which State agencies participate with the Bureau of Labor Statistics of the U.S. Department of Labor. Response to the 1981 survey was mandatory. The sample consisted of approximately 280,000 units in the private sector. The occupational injury and illness data reported through the annual survey are based on the records which employers maintain under the Occupational Safety and Health Act of 1970.

TABLES SHOWING THE survey results appear in the news release, USDL 82-423, available from the Inquiries and Correspondence Section, Bureau of Labor Statistics, Washington, D.C. 20212. A BLS bulletin with full survey details is in preparation. □

International trends in productivity and labor costs

Output per employee hour in manufacturing generally improved and unit labor cost trends moderated in the U.S. and 10 other nations in 1981; relative productivity and labor cost indexes are introduced

PATRICIA CAPDEVIELLE, DONATO ALVAREZ,
AND BRIAN COOPER

Manufacturing productivity increased in 1981 in the United States, Japan, and most European countries studied, with gains ranging from about 2 to 4 percent in the United States, Japan, France, Germany,[1] Italy, and the Netherlands, to almost 6 percent in the United Kingdom and Denmark, and more than 7 percent in Belgium. In Canada and Sweden, productivity remained essentially unchanged.

These productivity changes occurred in what was for most countries the second year of recession. In most European countries, productivity rose because employment and hours declined more than output. In the United States, Canada, and Japan, productivity gains were accompanied by modest output growth—temporary recoveries from 1980 declines in the United States and Canada.

Unit labor cost increases, which reflect changes in both productivity and hourly compensation costs, ranged from 2 to 5 percent in Japan, Germany, Belgium, Denmark, and the Netherlands, up to 15 percent in France and 18 percent in Italy. When measured in U.S. dollars, however, unit labor costs declined substantially in all the European countries—5 to 20 percent—because of the sharp appreciation of the dollar, while rising 7 to 8 percent in Canada and Japan as well as in the United States.

While the 1981 appreciation of the dollar partially offset the lower long-term U.S. cost trend, unit labor costs in the United States nevertheless declined 29 percent between 1970 and 1981, relative to the average costs of our trade competitors. Unit labor costs in Canada, Belgium, Denmark, the Netherlands, and Italy also declined relative to those of their trade competitors while those of Japan, France, Germany, the United Kingdom, and Sweden increased.

This article describes developments in manufacturing productivity (as measured by output per hour), hourly compensation, and unit labor costs in 1981, and compares the 1980–81 trends with those of the 1974–75 recession, for the United States, Canada, Japan, France, Germany, Italy, the United Kingdom, and four smaller European countries—Belgium, Denmark, the Netherlands, and Sweden.[2] Percent changes in productivity, labor costs, and related measures for selected periods and for each year from 1973 are shown in tables 1 through 3;[3] percent changes are also presented for the eight European countries and for the 10 foreign countries combined.[4] (Annual indexes for the years 1950 to 1981 are available from the authors.) The data for 1981 are based on preliminary underlying statistics, while those for other recent years reflect revised underlying statistics for several countries.

Although the productivity measure relates output to the hours of persons employed in manufacturing, it does not measure the specific contributions of labor as a single factor of production. Rather, it reflects the joint effects of many influences, including new technology,

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capital investment, the level of output, capacity utilization, energy use, and managerial effectiveness, as well as the skills and efforts of the work force.

This article also introduces new measures of relative trends in productivity and labor costs. Table 5 presents indexes of relative output per hour, hourly compensation, and unit labor costs in national currency and in U.S. dollars for the 11 countries. Each relative index represents the ratio of a country's own index to a weighted geometric average of the corresponding indexes for the other 10 countries; the weights used to combine the other country indexes reflect the relative importance of each country as a manufacturing trade competitor (table 4).

Productivity trends

In 1981, manufacturing productivity increased by more than 7 percent in Belgium, almost 6 percent in the United Kingdom and Denmark, and about 2 to 4 percent in the United States, Japan, France, Germany, Italy, and the Netherlands. In Canada and Sweden, it rose less than 0.5 percent. (See table 1.)

For the United States, the 1981 productivity gain was the largest annual increase since 1976. And for Belgium and the United Kingdom, the 1981 gains were the largest in many years. For Japan and Italy, the 1981 increases represent substantial slowdowns from large 1980 gains, but for most other countries, they were improvements over small gains or productivity declines in the previous year.

Output. With the exception of a small gain in Denmark, manufacturing output fell in each of the European countries in 1981—by more than 6 percent in the United Kingdom and about 1 to 4 percent in the other countries. In the non-Scandinavian countries, productivity increased because employment and hours declined even more than output. Most of Denmark's productivity gain also resulted from decreases in employment and hours. In Sweden, hours and output fell equally.

The 1981 drop in British output followed an even larger 1980 decline of 9 percent. For France and Belgium, 1981 marked the second consecutive year of declining output, but the 1980 declines were under 1 percent. Germany, Denmark, Sweden, and the Netherlands had zero or only slight 1980 output increases—under 1 percent—while Italy had a more substantial gain. In most countries, output turned down during the first half of 1980, and showed little if any recovery by late 1981 or early 1982. Only in Italy did output recover in late 1980 and turn down again in 1981.

In the United States and Canada, 1980 manufacturing output levels declined about 3 to 4 percent from previous year levels, but 1981 annual output levels were up 2 percent. In both countries, manufacturing production dropped in the second quarter of 1980, recovered in the fourth quarter, then turned down again during the second half of 1981. In Japan, manufacturing output increased more than 9 percent in 1980, and rose another 3 percent in 1981, but then turned down during the first half of 1982.

Table 1. Annual percent changes in manufacturing productivity and output, 11 countries, 1960–81

Year	United States	Canada	Japan	France	Germany	Italy	United Kingdom	Belgium	Denmark	Netherlands	Sweden	Eight European countries	Ten foreign countries
Output per hour:													
1960-81	2.7	3.6	9.2	5.5	5.2	5.8	3.6	7.2	6.1	7.1	5.0	5.3	5.9
1960-73	3.0	4.5	10.7	6.0	5.5	6.9	4.3	7.0	6.4	7.6	6.7	5.8	6.4
1973-81	1.7	1.4	6.8	4.6	4.5	3.7	2.2	6.2	4.1	5.1	2.2	4.1	4.7
1974	-2.4	2.2	2.4	3.5	5.4	4.9	.8	5.8	3.3	8.3	3.6	4.1	3.8
1975	2.9	-2.6	3.9	3.1	5.3	-4.4	-2.0	4.4	10.4	-1.8	-.4	1.6	2.0
1976	4.4	5.3	9.4	8.2	7.1	8.6	4.0	10.4	3.8	12.8	1.0	7.2	7.5
1977	2.5	4.0	7.2	5.1	4.9	1.1	1.6	6.5	2.1	4.1	-1.5	3.3	4.3
1978	.9	1.6	7.9	5.7	3.3	3.0	3.3	5.0	2.4	6.6	4.3	4.0	4.9
1979	.7	1.7	8.9	4.9	4.9	7.3	3.3	6.5	5.8	4.9	8.4	5.3	6.1
1980	.2	-3.3	6.8	1.6	1.4	5.8	.6	3.1	1.4	1.3	1.2	2.8	3.6
1981	2.8	.3	3.2	1.6	2.7	3.4	5.9	7.3	5.6	3.1	.1	3.8	3.3
Output:													
1960-81	3.6	4.8	10.0	5.2	3.8	5.4	1.6	5.0	4.0	4.7	3.2	4.0	5.3
1960-73	4.7	6.3	13.0	6.6	5.2	6.8	3.0	6.5	5.2	6.4	5.1	5.4	6.8
1973-81	2.3	2.0	6.5	2.3	1.9	3.3	-1.7	1.1	1.8	1.7	-.3	1.5	2.9
1974	-4.2	3.6	-2.0	3.2	-.3	6.4	-1.2	4.6	1.5	4.4	4.8	1.8	-.9
1975	-7.1	-5.9	-4.0	-2.1	-4.8	-9.7	-7.0	-7.4	-2.1	-6.7	-1.5	-5.2	-5.0
1976	9.6	5.9	13.3	7.0	8.0	12.6	2.0	8.6	4.8	8.0	-.4	7.0	8.5
1977	6.9	2.0	7.3	3.7	2.4	2.1	1.9	.7	.6	.9	-5.6	2.1	3.5
1978	5.3	5.0	7.3	3.2	1.3	1.8	.6	.9	.7	2.8	-1.3	1.6	3.4
1979	2.7	4.7	9.9	2.6	4.8	6.7	.2	3.7	6.5	2.7	6.9	3.8	5.6
1980	-4.3	-3.1	9.4	-.1	.5	6.3	-9.1	-1.4	0	.9	0	-.4	2.4
1981	2.3	1.6	3.2	-2.7	-1.4	-1.0	-6.3	-2.5	.5	-.9	-3.6	-2.4	-.4

NOTE: Rates of change computed from the least squares trend of the logarithms of the index numbers.

Employment and hours. Manufacturing employment and aggregate hours both increased only in Canada in 1981; in Japan, employment rose slightly but total hours were essentially unchanged. In 1980, hours had increased slightly in Canada and by more than 2 percent in Japan. In the United States, employment and hours declined only slightly in 1981, after falling more than 3 percent in 1980. (See table 2.)

In Europe, employment declined 10 percent in the United Kingdom and 2 to 6 percent in the other countries in 1981. Those declines followed 1980 drops of 6 percent in the United Kingdom and 1 to 2 percent in most of the other countries. Employment had increased slightly in Germany in 1980 and was essentially unchanged in Italy and Sweden. Aggregate hours fell even more than employment in 1981—except in Denmark—as average hours were also reduced.

Comparisons with 1974–75. Comparisons of developments during the years 1980 and 1981 with the recession of 1974–75 cannot be precise, particularly when dealing with annual average data, because of differences among countries in the extent and timing of the 1974–75 recession and the 1980–81 downturns. Nevertheless, certain broad comparisons can be made.

Over the 1974–75 period, manufacturing output fell in one or both years in all 11 countries studied. During 1980–81, neither Japan nor Denmark experienced annual average declines in output, although Denmark had virtually no output growth over the period and Japanese output slowed sharply in 1981; most of the other countries had smaller output declines than in 1974–75. However, there were exceptions. The recent output declines in the United Kingdom were substantially greater than during 1974–75, and those in France and Sweden also appear to have been larger. Only in the United States did output regain its pre-1974 average rate of growth during the 1976–79 recovery period.

As in the case of output, manufacturing employment and hours declined less sharply during 1980–81 than during 1974–75 in most of the countries studied. For example, German employment declined about 2 percent in 1980–81, compared with 9 percent in 1974–75, and total hours declined 5 percent versus 15 percent. Again, major exceptions were France, where employment and hours declined somewhat more in 1980–81, and the United Kingdom, where the recent declines—16 percent for employment and 21 percent for total hours—were substantially greater than those in 1974–75. In Sweden, the employment effects of the 1974–75 recession were delayed; therefore, direct comparison between the two periods is not appropriate.

Although employment losses over the 2-year period of 1980–81 were less severe in most countries than in 1974–75, employment in most of Europe also declined during the intervening 1976–79 period. The rate of decline ranged from about 1 percent per year in France and Germany to almost 4 percent annually in Belgium. Only in Denmark and Italy was employment essentially stable during the recovery period. By 1981, employment in manufacturing was down 6, 11, and 14 percent from 1973 levels in Sweden, France, and Germany; 17 percent in Denmark and the Netherlands; and almost 25 percent in Belgium and the United Kingdom. In contrast, employment in the United States and Canada was higher in 1981 than in 1973.

All European countries have taken actions, through collective bargaining or government programs, to shorten average hours worked to preserve manufacturing jobs. Most countries have partial unemployment benefit programs to provide wage replacement to employees on short work schedules for economic reasons. In addition, minimum annual holiday (vacation) entitlements have been increased in Denmark, Germany, the Netherlands, Sweden, and the United Kingdom (and are scheduled to increase in France) as a job creation measure as well as a fringe benefit improvement. (In Italy, on the other hand, several national holidays were abolished in 1977 as a labor cost cutting measure, although many employees receive extra annual holidays in lieu of the national holidays.) In Belgium, the standard workweek was shortened through collective bargaining from 40 hours in 1977 to 38 hours for most employees in 1981; the shorter hours are provided as either a shorter workweek or a longer annual holiday.

Given the relative output and employee-hours changes, manufacturing productivity increased in most countries during both the 1974–75 recession and in 1980–81. The following tabulation shows average annual productivity changes over the two periods:

	1974–75	*1980–81*
United States	0.2	1.5
Canada	-.2	-1.5
Japan	3.2	5.0
France	3.3	1.6
Germany	5.4	2.1
Italy	.2	4.6
United Kingdom	-.6	3.2
Belgium	5.1	5.2
Denmark	6.8	3.5
Netherlands	3.2	2.2
Sweden	1.6	.7

In the United States, Japan, Italy, and the United Kingdom, the productivity trend was higher during 1980–81, while productivity gains were higher during 1974–75 in France, Germany, Denmark, the Netherlands, and Sweden. In Belgium, productivity rose equally in both periods. In Canada, productivity declined in both periods.

Hourly compensation

Hourly compensation increases in 1981 varied considerably among the 11 countries studied. The

Table 2. Annual percent changes in manufacturing employment and hours, 11 countries, 1960–81

Year	United States	Canada	Japan	France	Germany	Italy	United Kingdom	Belgium	Denmark	Netherlands	Sweden	Eight European countries	Ten foreign countries
Aggregate hours:													
1960–81	0.9	1.1	0.7	–0.2	–1.3	–0.4	–1.9	–2.1	–2.0	–2.3	–1.7	–1.2	–.6
1960–73	1.6	1.7	2.1	.6	–.2	–.1	–1.2	–.5	–1.1	–1.1	–1.5	–.4	.4
1973–81	.6	.5	–.3	–2.2	–2.5	–.4	–3.8	–4.8	–2.2	–3.2	–2.5	–2.4	–1.7
1974	–1.9	1.4	–4.3	–.3	–5.4	1.4	–2.0	–1.2	–1.7	–3.6	1.2	–2.2	–2.7
1975	–9.7	–3.4	–7.6	–5.0	–9.6	–5.5	–5.1	–11.3	–11.3	–5.0	–1.1	–6.7	–6.8
1976	4.9	.5	3.6	–1.1	.8	3.8	–1.9	–1.7	1.0	–4.3	–1.5	–.2	1.0
1977	4.2	–2.0	.1	–1.3	–2.4	1.0	.2	–5.4	–1.4	–3.0	–4.1	–1.2	–.8
1978	4.4	3.4	–.5	–2.3	–1.9	–1.2	–2.6	–3.9	–1.7	–3.6	–5.4	–2.3	–1.5
1979	2.0	2.9	1.0	–2.2	–.1	–.6	–3.0	–2.6	.7	–2.1	–1.3	–1.5	–.5
1980	–4.5	.2	2.5	–1.7	–.9	.5	–9.6	–4.3	–1.4	–.4	–1.2	–3.1	–1.1
1981	–.5	1.3	–.1	–4.3	–4.0	–4.3	–11.5	–9.2	–4.8	–3.8	–3.7	–6.0	–3.7
Employment:													
1960–81	.9	1.4	1.5	.5	–.4	1.1	–1.1	–.7	–.7	–1.0	–.3	–.2	.3
1960–73	1.5	1.9	3.0	1.2	.5	1.4	–.5	.6	.2	.0	–.2	.5	1.1
1973–81	.7	.8	–.4	–1.4	–1.6	.0	–2.9	–3.6	–1.8	–2.4	–1.0	–1.7	–1.2
1974	–.4	2.0	.2	1.3	–2.6	2.5	1.9	1.1	–3.6	–.4	2.4	.3	.4
1975	–8.6	–2.2	–5.1	–2.7	–6.7	–.4	–3.8	–6.1	–8.4	–3.2	.9	–3.9	–4.2
1976	3.7	.4	.4	–1.0	–2.4	.2	–2.2	–4.1	.6	–4.0	–.2	–1.7	–1.0
1977	3.6	–2.0	–.2	–.5	–.8	.1	–.4	–3.9	–.5	–2.7	–3.5	–.7	–.6
1978	4.2	3.2	–1.1	–1.6	–.6	–1.0	–2.4	–4.1	–.5	–2.5	–2.8	–1.5	–1.2
1979	2.6	3.7	–.1	–1.8	.3	.5	–2.5	–2.7	.8	–1.0	.3	–.9	–.5
1980	–3.4	.3	2.5	–1.3	.6	.2	–6.0	–1.9	–2.0	–1.2	–.1	–1.6	–.3
1981	–.5	1.8	.5	–3.6	–2.4	–1.9	–10.1	–5.5	–4.8	–3.3	–3.2	–4.5	–2.8
Average hours:													
1960–81	–.1	–.3	–.8	–.7	–.9	–1.4	–.9	–1.4	–1.3	–1.2	–1.4	–1.0	–.8
1960–73	.1	–.2	–.9	–.5	–.8	–1.5	–.7	–1.0	–1.4	–1.1	–1.3	–.9	–.8
1973–81	–.2	–.3	.1	–.8	–.9	–.3	–1.0	–1.2	–.5	–.8	–1.5	–.9	–.5
1974	–1.5	–.6	–4.5	–1.5	–2.9	–1.1	–3.8	–2.2	2.0	–3.2	–1.1	–2.5	–3.1
1975	–1.2	–1.1	–2.6	–2.3	–3.1	–5.1	–1.3	–5.6	–3.2	–1.8	–2.0	–2.9	–2.8
1976	1.2	.1	3.2	–.1	3.2	3.5	.3	2.5	.4	–.3	–1.3	1.5	2.0
1977	.6	.0	.3	–.9	–1.6	.9	.6	–1.6	–.9	–.3	–.7	–.4	–.2
1978	.2	.3	.6	–.7	–1.4	–.2	–.2	.3	–1.2	–1.1	–2.6	–.8	–.3
1979	–.6	–.7	1.1	–.4	–.4	–1.0	–.5	.1	–.1	–1.1	–1.6	–.6	.0
1980	–1.0	–.1	–.1	–.3	–1.5	.3	–3.9	–2.5	.7	.8	–1.1	–1.5	–.8
1981	.0	–.5	–.6	–.7	–1.6	–2.4	–1.6	–3.8	.0	–.6	–.6	–1.6	–.9

NOTE: Rates of change computed from the least squares trend of the logarithms of the index numbers.

smallest gain was 5 percent in the Netherlands and the largest, 22 percent in Italy. In the United Kingdom and France, the increases were also large—over 16 percent. In Japan and Germany, the gains were relatively small—under 8 percent—while in the United States, Canada, Belgium, Denmark, and Sweden, they were 9 to 12 percent. (See table 3.)

Four countries—the United States, Germany, Denmark, and the United Kingdom—showed some degree of moderation in hourly compensation gains for 1981. In the United Kingdom, there was a substantial slowdown from the 24 percent recorded in 1980. (In the Netherlands, a significant slowdown occurred in 1980.) In Canada, Japan, Italy, and Sweden, however, the 1981 increases were higher than those of the previous year, and in France, Belgium, and the Netherlands, the increases in both years were virtually the same.

Compared with the hourly compensation trend during the 1974–75 recession, annual rates of increase during the 1980–81 period were considerably lower in every country except the United States and France. In the United States, however, the 1974–75 increases were relatively small. The moderation in wage gains and other labor costs occurred even though consumer price trends were generally about as high in 1980–81 as in 1974–75—with Japan and Belgium as principal exceptions. However, growing concern with moderating labor costs and containing inflation, as well as preserving manufacturing jobs, had a significant impact on recent compensation trends.

Concerted action was taken in several countries to moderate wage settlements during 1980–81. Temporary pay freezes were imposed in Belgium and the Netherlands and a temporary price freeze was undertaken in Sweden. The Dutch government subsequently imposed statutory pay controls. In several countries with wage indexation systems, the price indexes used were adjusted to exclude fuel and energy prices, or the cost-of-living allowances (COLA's) normally payable were reduced or rescinded.

In Japan and Germany, annual wage agreements in 1980 and 1981 continued the moderate pattern of recent years. In Japan, the average manufacturing settlement was 6.7 percent in 1980 and 7.6 percent in 1981, and in Germany, the average settlements were 6.7 percent in 1980 and 4.6 percent in 1981. In the United States and the United Kingdom, wage-and-salary concessions were made in some impacted companies or industries.

In the Netherlands, a pay freeze was imposed from January through April 1980, followed by statutory controls which were later extended through 1981. No basic wage increases were allowed. Furthermore, the June 1980 cost-of-living adjustment was restricted to a flat-rate amount, and the January 1981 adjustment was reduced by 2 percent. In 1981, holiday bonuses were lowered slightly, and extra annual holidays delayed.

The Belgian Government imposed a pay freeze in January 1981. The national wage agreement signed in February, under threat of statutory pay controls, provided either a 1-percent wage rate increase or an extra hour off the standard workweek by 1983. Wages are indexed for consumer price increases in Belgium, however, and the indexation system was not changed. The emphases of recent wage settlements in Belgium have not been basic wage increases but reductions of standard hours. Standard weekly hours were reduced from 40 hours per week in 1977 to 38 hours for most workers by 1980, and the 1981 national agreement allowed additional reductions. Because wage rates are adjusted to compensate for the shorter workweek, the hours reductions are measured as hourly compensation gains.

Wage rates are also indexed for consumer price increases in Italy, and cost-of-living allowances are paid under collective agreements in Denmark, Sweden, and the United Kingdom. In Italy as in Belgium, the indexation system continued unchanged during 1980–81. In Denmark and Sweden, COLA payments were restricted. In Denmark, the index used to compute the COLA's was changed in December 1979 to exclude fuel and energy prices, and was also rebased. As a result, one of the COLA's was eliminated in 1980. In Sweden, the 1981 pay agreements specified exclusion of energy prices from the consumer price index used in COLA computation. The government imposed a price freeze in September 1981 and cut value-added taxes in November, and thereby kept the price rise below the COLA threshold (trigger) specified in the pay agreement.

In Denmark, early 1981 wage settlements at the industry level provided moderate wage increases and restricted additional company-level wage negotiations. In

Table 3. Annual percent changes in hourly compensation and unit labor costs in manufacturing, 11 countries, 1960–81

Year	United States	Canada	Japan	France	Germany	Italy	United Kingdom	Belgium	Denmark	Netherlands	Sweden	Eight European countries	Ten foreign countries
Hourly compensation:													
1960-81	6.9	8.7	14.8	11.9	10.1	16.2	13.1	12.6	13.2	12.9	12.0	12.0	11.9
1960-73	5.0	6.4	14.6	9.2	9.3	12.3	8.6	10.7	11.8	12.8	10.4	9.8	10.1
1973-81	9.6	11.1	9.7	15.1	9.4	19.8	19.1	12.1	12.5	9.7	13.0	13.7	12.4
1974	10.6	15.8	31.2	19.6	15.0	24.6	25.0	22.5	21.0	19.2	17.6	18.3	21.4
1975	11.9	14.2	17.0	19.0	12.4	28.9	29.9	21.4	19.3	14.3	21.2	19.4	18.0
1976	8.0	14.2	6.7	14.1	7.8	19.8	17.2	13.2	11.7	12.5	18.5	13.0	11.2
1977	8.3	11.0	9.7	13.7	10.5	18.8	12.6	12.0	10.6	8.6	9.2	12.0	11.3
1978	8.3	6.7	5.9	12.7	8.5	14.5	16.5	8.0	10.2	8.7	11.3	11.6	9.8
1979	9.7	10.1	6.5	13.8	7.3	17.6	18.9	7.7	11.8	7.8	7.8	12.4	10.7
1980	11.8	9.1	6.5	18.6	8.8	18.5	23.6	9.6	10.9	5.0	10.9	14.9	12.0
1981	10.2	11.1	7.4	16.5	7.5	22.3	16.2	9.6	9.3	5.3	12.4	13.8	11.5
Unit labor costs:													
1960-81	4.1	4.8	5.1	6.1	4.6	9.8	9.2	5.1	6.8	5.5	6.7	6.3	5.8
1960-73	1.9	1.8	3.5	3.1	3.7	5.1	4.1	3.5	5.1	4.8	3.5	3.8	3.5
1973-81	7.7	9.5	2.7	10.0	4.7	15.5	16.6	5.6	8.0	4.4	10.6	9.2	7.4
1974	13.3	13.3	28.1	15.6	9.1	18.7	24.1	15.7	17.1	10.0	13.5	13.7	17.0
1975	8.8	17.2	12.6	15.4	6.8	34.9	32.5	16.3	8.0	16.4	21.7	16.6	15.6
1976	3.4	8.4	-2.5	5.5	.6	10.4	12.7	2.5	7.6	-.3	17.3	5.5	3.5
1977	5.7	6.7	2.4	8.2	5.3	17.5	10.8	5.2	8.4	4.3	11.0	8.4	6.7
1978	7.4	5.0	-1.8	6.6	5.0	11.2	12.8	2.9	7.6	1.9	6.7	7.2	4.7
1979	9.0	8.3	-2.2	8.5	2.4	9.6	15.0	1.1	5.7	2.8	-.5	6.7	4.3
1980	11.6	12.8	-.2	14.8	7.0	12.1	22.9	6.4	9.4	3.7	9.6	11.8	8.1
1981	7.2	10.7	4.0	14.6	4.7	18.3	9.7	2.1	3.5	2.1	12.3	9.7	7.9
Unit labor costs in U.S. dollars:													
1960-81	4.1	4.4	7.9	6.5	9.1	7.6	7.1	7.8	7.9	8.7	7.7	7.6	7.2
1960-73	1.9	1.9	4.9	2.8	6.1	5.4	2.6	4.6	5.0	6.1	4.2	4.2	3.9
1973-81	7.7	6.5	7.2	9.4	9.1	8.1	15.0	8.6	7.7	8.0	9.6	9.9	8.8
1974	13.3	15.8	19.0	6.7	11.9	6.2	18.5	15.5	16.0	13.9	11.5	11.4	13.5
1975	8.8	12.7	10.7	29.6	12.3	34.5	25.8	23.2	14.6	23.8	30.2	22.6	19.3
1976	3.4	11.9	-2.4	-5.4	-1.8	-13.3	-8.5	-2.5	2.1	-4.8	11.5	-5.0	-3.8
1977	5.7	-1.0	13.3	5.1	14.2	10.5	7.1	13.3	9.1	12.3	8.2	10.0	9.9
1978	7.4	-2.1	26.2	16.5	21.6	15.6	24.0	17.3	17.3	15.8	5.6	18.8	19.3
1979	9.0	5.4	-6.5	14.7	12.0	12.0	27.3	8.4	10.6	10.7	4.8	14.5	8.2
1980	11.6	13.0	-3.5	15.7	8.1	8.9	34.6	6.9	2.2	4.8	11.1	13.6	8.6
1981	7.2	8.0	6.7	-10.5	-15.7	-10.6	-4.5	-19.5	-18.0	-18.5	-5.7	-12.0	-7.4

NOTE: Rates of change computed from the least squares trend of the logarithms of the index numbers.

France, there were no government restrictions on wage increases during 1980–81, and wage rate increases followed the consumer price index although there is no formal indexation system. Minimum-wage increases above the price index rate raised average wages further in some lower wage industries. In Italy, the major wage agreements were concluded in 1979 and expired in late 1981. Their wage rate provisions and the indexation system were not limited, although there were discussions of labor cost reductions and indexation changes for 1982. In Italy and several other European countries, actions were taken to cut employers' social security tax rates, although in other cases tax rates were raised to finance system deficits.

Unit labor costs

Unit labor costs, which reflect the interplay between hourly compensation and output per hour, increased about 7 percent in the United States and 10 to 12 percent in Canada, Sweden, and the United Kingdom in 1981, compared with more than 14 percent in France and 18 percent in Italy, but only 2 to 5 percent in Denmark, Japan, Germany, Belgium, and the Netherlands. (See table 3.)

In every country except Japan, France, Italy, and Sweden, unit labor costs increased less in 1981 than in the previous year. In the United Kingdom, the slowdown from the 23 percent recorded in 1980 was substantial, and reflected both a smaller compensation increase and a larger productivity gain. In most other countries also, the moderation in unit labor costs reflects a slowdown in hourly compensation and improvements in productivity. In France, the 1981 increase in unit labor costs, as well as in productivity and hourly compensation, was essentially the same as the previous year's. In Japan and Italy, the acceleration in unit labor costs primarily reflects their productivity slowdowns.

The 1980–81 increases in unit labor costs were generally much smaller than those of 1974–75 because hourly compensation gains were relatively moderate, in contrast to the substantial wage gains during the 1974–75 recession. The average annual unit labor cost increases for the two periods are shown in the following tabulation:

	1974–75	*1980–81*
United States	11.0	9.4
Canada	15.2	11.8
Japan	20.3	1.9
France	15.5	14.7
Germany	7.9	5.9
Italy	26.8	15.2
United Kingdom	28.3	16.3
Belgium	16.0	4.2
Denmark	12.5	6.4
Netherlands	13.2	2.9
Sweden	17.6	10.9

For some countries—Japan, Belgium, Denmark, and the Netherlands—the differences are substantial. Even for the countries with the largest unit labor cost increases in 1980–81—Italy and the United Kingdom—the recent increases are down considerably from 1974–75 peaks. The differences are less marked for the United States and Germany, which had the smallest 1974–75 unit labor cost increases.

In U.S. dollars. In comparing trends in unit labor costs among countries, an important analytical element is the shift in relative currency values through international exchange rate adjustments. In recent years, the number and extent of such adjustments have been so great as to constitute a major variable in competitive assessment.

The relationship between exchange rate shifts and unit labor cost trends is partial and indirect but nonetheless important. The two are linked by the price mechanism, a main determinant of trade directions and competitive relationships. Because labor cost is the principal cost factor in the production of manufactured goods, it exerts a strong influence on the price at which goods can be offered in international markets. Relative changes in exchange rates alter the effect of relative changes in costs in national currency. Consequently, in assessing relative changes in unit labor costs in competitive terms, changes in exchange rates need to be taken into account.

Changes in currency exchange rates in 1981 had a significant effect on relative changes in unit labor costs measured in U.S. dollars. The dollar appreciated substantially—from about 15 percent to more than 30 percent—relative to the European currencies. (By September 1982, the dollar had further appreciated—compared with the annual average for 1981—10 percent versus the German mark and Dutch guilder, and 8 to 30 percent versus the other European currencies.) The dollar also appreciated somewhat relative to the Canadian dollar, but declined slightly versus the Japanese yen. (By September 1982, however, the dollar had appreciated 19 percent versus the yen, as well as another 3 percent versus the Canadian dollar.)

Therefore, when measured in U.S. dollars, unit labor costs in the European countries fell about 5 percent in Sweden and the United Kingdom; 11 percent in France and Italy; 16 percent in Germany; and 18 to 20 percent in Belgium, the Netherlands, and Denmark. In U.S. dollars, unit labor costs increased 8 percent in Canada and 7 percent in Japan—about the same rate as for U.S. costs. (See table 3.)

The largest contrast was between Japan and Germany. On a national currency basis, they had increases of 4 and 5 percent, respectively. On a U.S. dollar basis, Japanese unit labor costs rose 7 percent while German unit labor costs fell 16 percent.

While the 5-percent decline in the United Kingdom was not as large as in the other European countries, it was the sharpest trend reversal among all the countries, for British unit labor costs had increased 35 percent in 1980. Unit labor costs in Japan had posted a small decline in 1980; among the other countries, they had risen 2 to 16 percent.

The trend in unit labor costs in U.S. dollars for the 1980–81 period differs significantly from that for the years 1974–75 in most countries covered. First, unit labor costs in national currency increased much less during 1980–1981 in most countries. Secondly, the U.S. dollar appreciated versus all European currencies and the Canadian dollar in 1981, while in 1974–75, the dollar appreciated versus the Japanese yen, Italian lira, and British pound but depreciated versus all the other currencies. Therefore, unit labor costs in U.S. dollars increased substantially more in most other countries than in the United States during the 1974–75 recession, while in the 1980–81 period, unit labor costs in U.S. dollars declined in all European countries covered.

Relative productivity and cost trends

Indexes of manufacturing productivity and labor costs are often used in analyses of changes in the relative competitive position of countries in the international trade of manufactures. Unit labor costs are an important element in determining the underlying price competitiveness of manufactured products, with relative productivity and hourly compensation trends determining unit labor cost performance. The International Monetary Fund (IMF) and Organization for Economic Cooperation and Development (OECD) publish indexes for key cost and price measures—including unit labor costs in U.S. dollars—which show the trend of each country's own indicators relative to those of other industrial (competitor) countries.[5] The BLS unit labor cost measures are used in the computation of the IMF and OECD indicators for most countries they cover. The following section introduces indexes of trade-weighted relative trends in manufacturing productivity, hourly compensation, and unit labor costs in national currency, as well as unit labor costs in U.S. dollars.

Because trade involves individual products, the use of aggregate manufacturing measures as indicators of trade competitiveness has certain limitations. In general, labor productivity growth rates in export sectors probably exceed those for manufacturing as a whole. On the other hand, hourly compensation tends to grow at similar rates in all manufacturing sectors within a country. Overall, therefore, trend measures for the total manufacturing sector would be expected to overstate, to some extent, the growth of unit labor costs for the export sector. However, this would probably be true for every country, and, in any case, the measures are intended to represent relative changes only. In addition, exchange rate changes have a significant effect on relative unit labor cost developments, and these affect unit labor costs in all manufacturing industries equally.

Index calculation methods. The indexes of relative trends in manufacturing productivity and labor costs represent ratios of each country's own indexes to weighted geometric averages of the corresponding indexes for the other 10 "competitor" countries.

The weights used to combine the other 10 countries' indexes into an average "competitors" index reflect the relative importance of each country as a manufacturing trade competitor. The weights are those developed by the IMF for computation of their own relative cost and price indicators—except that they have been adjusted from the 14-country coverage of the IMF series to the 11-country coverage of the BLS series.[6] The weights are based on disaggregated trade data for manufacturers in 1975. They take into account the relative importance of each country's trading partners in its direct bilateral trade with them and the relative importance of those partners in competition in "third country" markets, ad-

Table 4. Trade weights used to compute competitor indexes

[In percent]

Reference country	Competitor country										
	United States	Canada	Japan	Belgium	Denmark	France	Germany	Italy	Netherlands	Sweden	United Kingdom
United States	—	19.3	17.3	3.3	1.1	13.1	18.8	7.4	4.9	3.2	11.6
Canada	76.9	—	5.1	.9	.2	2.5	5.3	1.7	.9	2.0	4.5
Japan	36.2	2.9	—	3.8	1.4	11.3	18.2	7.4	4.4	3.7	10.6
Belgium	5.7	.5	6.2	—	.9	22.9	34.1	7.7	9.5	2.4	10.1
Denmark	12.7	.9	10.3	2.9	—	9.6	23.4	6.4	4.7	13.2	15.9
France	16.7	1.1	11.9	4.0	1.3	—	31.1	13.3	5.0	3.0	12.5
Germany	17.5	1.5	12.1	7.8	1.2	21.0	—	12.8	8.1	5.3	12.8
Italy	16.3	1.4	12.2	4.5	1.4	10.8	34.3	—	4.9	2.8	11.5
Netherlands	11.9	.7	9.1	8.7	1.5	16.5	33.9	4.2	—	2.7	10.7
Sweden	18.0	3.5	11.6	3.3	4.8	10.3	23.4	6.5	3.8	—	14.8
United Kingdom	25.0	2.0	11.6	5.4	2.1	13.7	22.5	7.8	5.3	4.7	—

NOTE: Because of rounding, sums of individual items may not equal 100.0.

justed for the importance of foreign trade to the manufacturing sector as a whole in each country.[7] Table 4 shows the weights used for each of the 11 countries.

The relative indexes of output per hour, hourly compensation, and unit labor costs in national currency and in U.S. dollars are shown in table 5. The underlying "own country" and "competitor countries" indexes used to compute the relative indexes, and indexes of trade-weighted exchange rates, not shown in table 5, are available from the authors.

Chart 1 shows the trends from 1970 to 1981 in U.S. manufacturing output per hour, hourly compensation, and unit labor costs compared with those for its trade-weighted competitors, as well as relative U.S. versus competitors trends. Charts 2 and 3 show the relative unit labor cost trends in national currency and in U.S. dollars for four countries—the United States, Japan, Germany, and the United Kingdom; the three foreign countries shown are important U.S. trade partners, and each also represents different relative cost trends.

Relative productivity trends. The countries in which manufacturing productivity grew more rapidly than that of trade competitors since 1970 were Japan, Belgium,

Table 5. Relative indexes of output per hour, hourly compensation, and unit labor costs in manufacturing, 11 countries, 1970–81

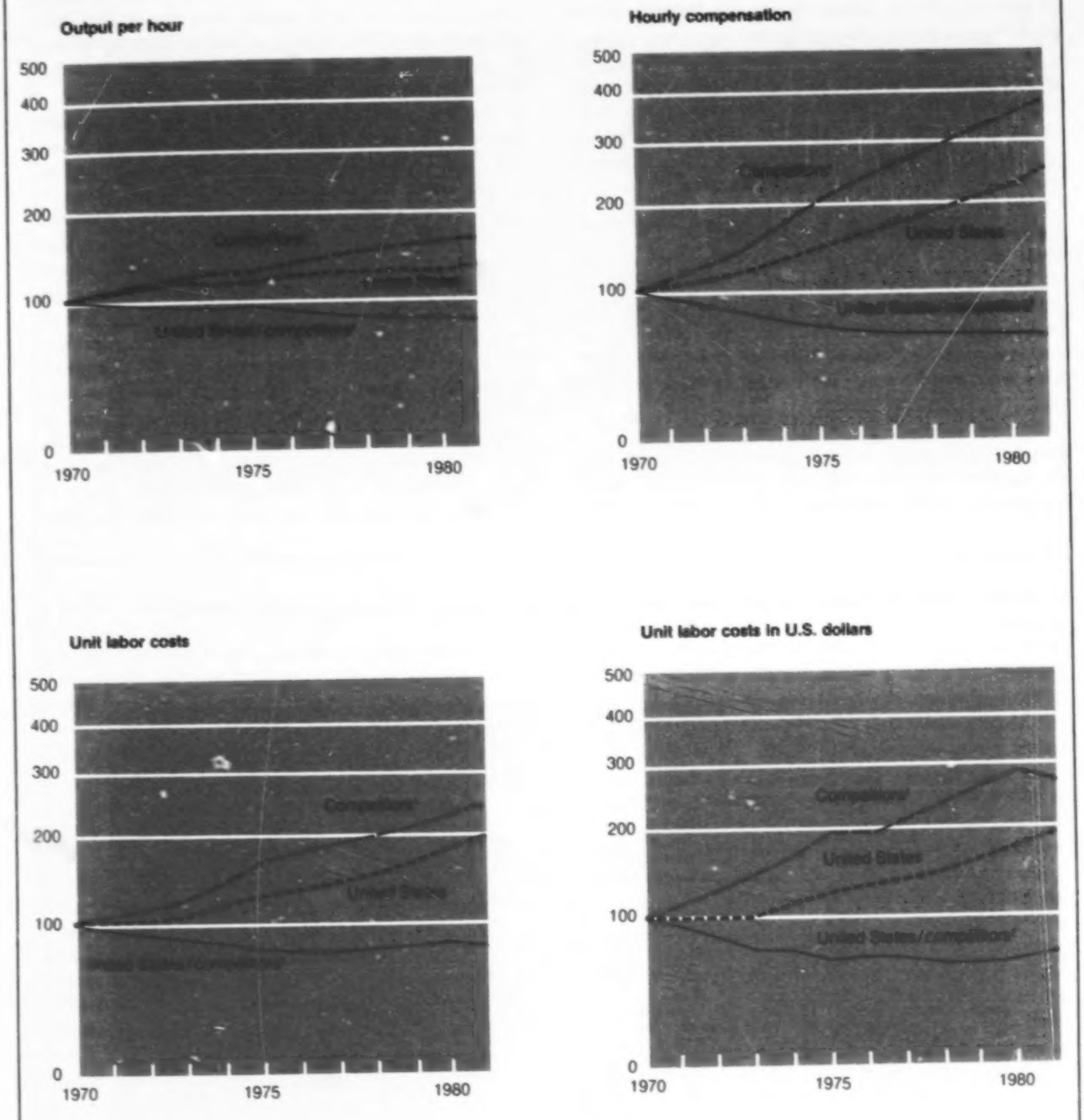
[1970=100]

Year	United States	Canada	Japan	France	Germany	Italy	United Kingdom	Belgium	Denmark	Netherlands	Sweden
Output per hour:											
1970	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1971	100.7	101.2	101.0	100.4	98.9	98.1	98.7	101.4	101.2	101.7	100.0
1972	98.5	100.0	105.9	98.9	98.0	99.0	99.4	105.6	102.2	102.4	98.2
1973	96.5	100.3	109.5	98.9	96.2	103.8	98.4	109.2	105.2	105.5	98.3
1974	91.0	103.6	110.2	97.2	98.7	105.8	98.5	111.1	105.5	110.6	99.2
1975	92.6	98.4	112.3	98.4	102.9	98.1	92.1	113.4	114.6	105.4	96.5
1976	90.3	98.7	115.9	98.6	102.8	99.6	98.5	116.5	112.0	111.2	91.4
1977	88.8	99.8	120.4	101.0	104.2	98.6	87.5	119.2	110.7	111.0	86.6
1978	85.9	99.6	126.3	103.0	103.2	95.8	87.1	120.0	109.1	113.9	87.2
1979	82.3	99.4	132.9	103.0	103.1	98.3	86.0	121.7	109.8	113.9	90.4
1980	81.0	95.4	140.3	102.3	102.1	102.1	84.8	123.1	109.2	113.1	88.8
1981	81.1	93.0	140.5	100.6	101.6	102.3	87.4	128.5	111.9	112.9	87.0
Hourly compensation:											
1970	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1971	94.2	99.8	104.8	99.3	98.8	103.0	102.9	101.8	102.2	101.8	100.2
1972	88.7	99.9	110.5	99.2	98.7	106.1	105.1	105.6	101.3	104.6	100.7
1973	82.4	100.7	120.8	98.4	96.3	118.3	102.5	107.4	107.8	109.4	98.8
1974	75.4	103.0	136.3	98.7	91.8	124.4	108.7	110.5	106.3	109.7	97.4
1975	71.4	103.5	136.5	99.7	86.1	137.9	121.7	114.2	108.9	106.7	100.3
1976	68.6	108.4	130.6	102.3	82.0	149.7	128.8	115.6	109.2	108.1	106.8
1977	66.6	110.4	129.4	104.4	80.9	161.0	130.8	115.9	108.7	105.4	105.0
1978	65.8	108.2	124.3	107.0	79.2	168.3	138.5	113.2	108.4	104.1	106.1
1979	65.2	108.3	119.2	110.2	75.9	180.4	151.2	109.9	109.4	101.7	103.1
1980	65.3	105.5	112.5	114.8	72.6	182.1	168.4	107.2	107.8	95.2	101.6
1981	64.5	106.1	108.1	120.5	68.0	213.5	176.6	105.3	105.6	90.2	102.7
Unit labor costs in national currency:											
1970	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1971	93.6	98.6	103.7	98.9	101.0	105.0	104.3	100.4	101.0	100.1	100.2
1972	90.0	99.9	104.4	100.3	100.7	107.2	105.8	100.0	99.1	102.1	102.4
1973	85.4	100.4	110.3	101.6	100.1	113.9	104.2	98.4	102.5	103.7	100.5
1974	82.9	99.4	123.6	101.6	93.0	117.7	112.7	99.5	103.6	99.1	98.2
1975	77.1	105.2	121.5	101.3	83.6	140.6	132.1	100.7	95.9	101.3	103.9
1976	76.0	109.9	112.8	102.7	79.7	150.3	143.9	99.2	97.5	87.2	116.9
1977	75.0	110.6	107.5	103.4	77.7	166.5	149.6	97.2	98.2	94.9	121.2
1978	76.6	108.6	98.4	103.9	76.7	175.6	160.1	94.3	99.3	91.4	121.7
1979	79.3	108.9	89.7	107.0	73.7	183.5	175.7	90.3	99.7	89.3	114.1
1980	80.5	110.6	80.2	112.2	71.1	188.1	198.5	87.1	98.7	84.2	113.2
1981	79.6	114.0	76.9	119.8	68.0	208.6	202.2	82.0	94.3	79.9	118.1
Unit labor costs in U.S. dollars:											
1970	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1971	91.1	101.3	105.2	98.6	104.3	103.7	104.2	100.0	100.0	101.1	99.5
1972	81.5	102.6	116.1	100.3	106.4	104.6	101.2	102.9	97.7	104.4	102.6
1973	71.1	99.9	129.0	106.0	119.2	100.3	88.9	101.4	107.0	109.9	101.1
1974	70.9	102.1	136.6	99.9	118.6	93.8	93.8	104.9	109.8	111.2	99.4
1975	64.9	103.3	128.8	110.2	109.1	108.5	100.8	107.5	105.0	116.4	110.3
1976	68.1	110.5	127.4	107.6	111.0	95.9	93.5	109.1	109.2	113.9	126.4
1977	66.4	105.2	133.5	102.2	116.9	96.1	91.5	112.2	106.6	118.1	125.0
1978	61.7	93.5	148.2	101.0	122.7	94.2	98.4	111.1	109.0	113.7	112.4
1979	61.8	90.2	123.6	105.1	124.3	95.5	115.4	107.2	108.8	113.2	106.1
1980	62.4	91.5	105.7	110.3	120.2	94.1	143.2	102.8	99.2	106.7	105.9
1981	70.8	95.4	118.7	106.6	107.8	91.1	146.0	92.5	87.6	95.6	106.8

NOTE: Relative indexes are calculated from the ratio of the reference country index to a trade-weighted average index for the other 10 countries.

Chart 1. U.S. productivity and labor costs relative to 10 competitor countries, 1970-81

[1970=100]



Output per hour

Hourly compensation

Unit labor costs

Unit labor costs in U.S. dollars

[1] Weighted geometric average of the indexes for 10 competitor countries.

[2] Relative index calculated from the ratio of the U.S. index to the competitors' index.

the Netherlands, and Denmark. Productivity had risen 11 to 12 percent more in Denmark and the Netherlands and 16 percent more in Japan and Belgium by 1976. By 1981, their relative trends had diverged: For Japan, productivity gains were 41 percent higher and for Belgium, 29 percent, while in Denmark and the Netherlands the gains were 12 and 13 percent higher.

In France, Germany, and Italy, productivity increased at about the same rate as that of trade competitors from 1970 to 1981. Their relative rates of change varied during the period, however. In the early 1970's, productivity in France and Germany rose somewhat less rapidly, and in Italy it rose more rapidly, but during the late 1970's, the relative rates were reversed.

Productivity rose less rapidly than in competitor countries for the United States, Canada, Sweden, and the United Kingdom. From 1970 to 1981, U.S. relative productivity had increased 19 percent less, while in Sweden and the United Kingdom, gains were 13 percent lower, and in Canada, 7 percent lower. The slower gains were quite consistent throughout the entire period.

Relative compensation trends. Hourly compensation rose less than in competitor countries in the United States, Germany, and the Netherlands. From 1970 to 1981, compensation increased about 35 percent less in the United States, 30 percent less in Germany, and 10 percent less in the Netherlands. For the United States and Germany, the slower relative trend was fairly consistent over the whole period. For the Netherlands, however, compensation rose more rapidly than competitors' during the early 1970's, then less rapidly after 1976, with the greatest relative declines occurring in 1980–81, following the imposition of wage controls.

Hourly compensation rose more rapidly than in competitor countries in Italy, the United Kingdom, Japan, and France. From 1970 to 1981, compensation had increased about 100 percent more in Italy and about 75 percent more in the United Kingdom. Almost without exception, both had consistently larger gains than their competitors throughout the 1970–81 period. Hourly compensation in Japan rose more rapidly during the early 1970's—by 1975, Japanese compensation had increased about 35 percent more than that of competitors —but grew less rapidly after 1975. By 1981, Japanese compensation gains were only 8 percent higher than competitors'. In France, hourly compensation rose at about the same rate as in competitor countries until the mid-1970's, then rose more rapidly to end in 1981 with about a 20-percent larger cumulative increase.

Canada, Belgium, and Denmark also ended the 1970–

Chart 2. Relative indexes of unit labor costs in national currency, selected countries, 1970-81

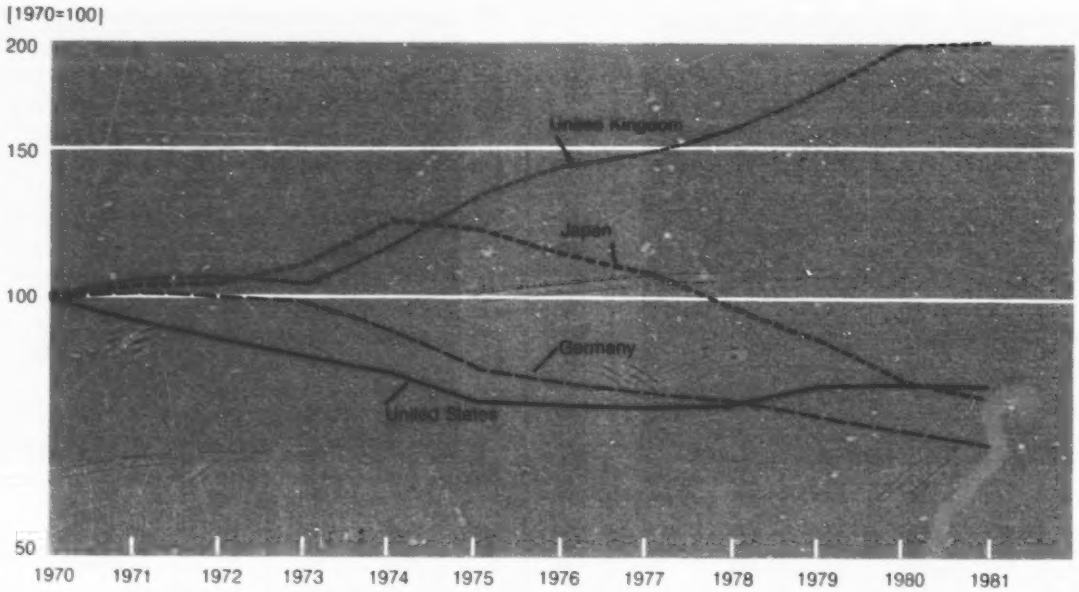
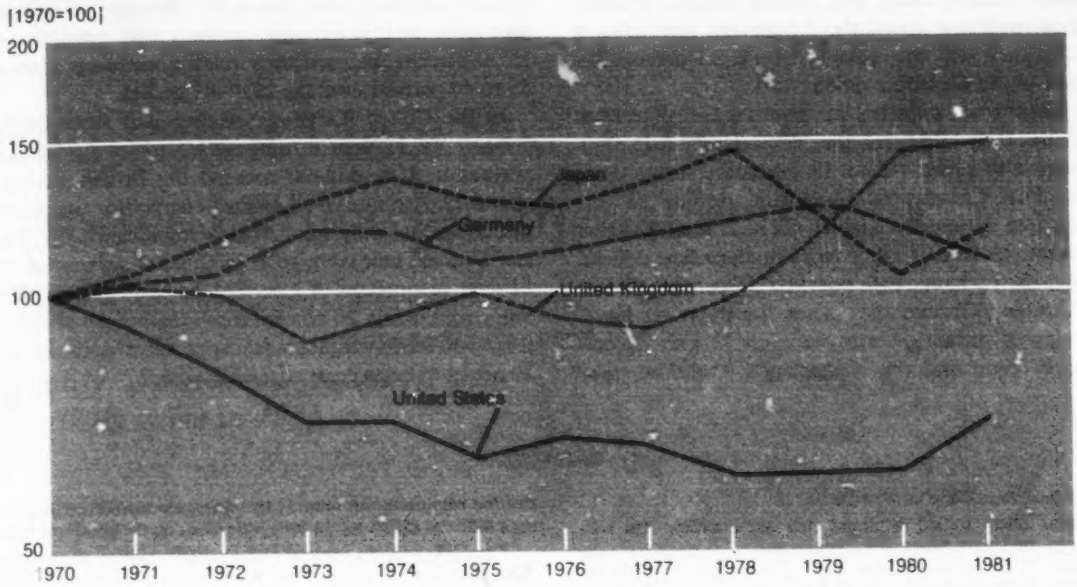


Chart 3. Relative indexes of unit labor costs in U.S. dollars, selected countries, 1970-81



81 period with somewhat larger compensation increases. But in each country, the 1981 relative gains were down from previous peaks—in Canada, 6 percent down from 10 percent in 1977; in Belgium, 5 percent down from 16 percent in 1976–77; and in Denmark, 6 percent down from 9 percent in 1974–79. In Sweden, hourly compensation generally rose at about the same rate as competitor countries' over the 1970–81 period.

Relative unit labor cost trends. Unit labor costs in national currency increased less from 1970 to 1981 in six countries—the United States, Japan, Germany, Belgium, Denmark, and the Netherlands—than in their competitor countries. The relative trend was 6 percent lower in Denmark by 1981, and about 20 to 30 percent lower in the other countries.

The relative change for the United States was down because hourly compensation had fallen more than output per hour. In Japan, Belgium, and Denmark, relative productivity gains more than offset relative compensation increases; in Germany, the relative productivity trend was about level, but relative compensation was sharply down; and the Netherlands had both productivity and hourly compensation advantages.

The relative trend for the United States was steadily downward from 1970 to 1977, up moderately from 1977 to 1980, and down again slightly in 1981. Relative unit labor costs in Japan rose over 20 percent more than those of competitors by 1974–75, then declined steadily to 23 percent less than competitors' by 1981. Relative unit labor costs declined steadily in Germany from 1973, in Belgium and the Netherlands from 1975, and in Denmark from 1979. For the Netherlands, the most significant relative cost declines occurred during 1980 and 1981.

Unit labor costs in national currency increased by at least 100 percent more than competitors' in Italy and the United Kingdom and by about 15 to 20 percent more in Canada, France, and Sweden. The large relative increases in Italy and the United Kingdom are attributable to hourly compensation gains as the relative productivity trend was down in the United Kingdom and essentially level in Italy. In Canada and France, hourly compensation was up slightly, and the productivity trend was down in Canada and even in France. In Sweden, hourly compensation trends were equal to those of competitors, but productivity fell from 1970 relative levels.

In U.S. dollars. After adjustment for the relative change in the foreign exchange rate of the dollar, U.S. unit labor costs showed a decline of nearly 30 percent versus those of competitors from 1970 to 1981, compared with about 20 percent in national currency. In 1980, relative unit labor costs adjusted for the dollar exchange rate were down almost 40 percent. However, the U.S. dollar appreciated 10 percent against trade-weighted U.S. competitor currencies from 1980 to 1981. This primarily reflected the dollar's appreciation relative to the German mark, French franc, and British pound, because, on a trade-weighted basis, the 2.5-percent appreciation of the Japanese yen was balanced by a 2.5-percent depreciation of the Canadian dollar.

Unit labor costs adjusted for relative exchange rates for Canada, Italy, Belgium, the Netherlands, and Denmark were also down—5 to 12 percent—versus competitors. For Canada, a 16-percent decline in the exchange rate, primarily against the U.S. dollar, offset higher increases in unit labor costs in Canadian dollars. For Italy, the exchange rate posted a 55-percent decline versus U.S. and German currencies. On the other hand, trade-weighted exchange rates were up 13 and 20 percent for Belgium and the Netherlands; therefore, relative unit labor costs in dollars declined less than in national currency terms.

For Germany and Japan, unit labor costs in U.S. dollars increased 8 and 19 percent more than those of trade competitors (principally the United States for Japan, and France and the United States for Germany) even though unit labor costs in national currency were down about 25 to 30 percent, because their relative exchange rates rose 55 to 60 percent over the 1970–81 period.

In the United Kingdom, relative unit labor costs increased 100 percent in national currency terms, but 46 percent in U.S. dollars, because the British pound declined 28 percent overall against competitor currencies—primarily the dollar and the German mark. In France and Sweden, unit labor costs in U.S. dollars posted 1970–81 relative increases of 7 percent, as costs in national currency rose nearly 20 percent more than those of competitors, but trade-weighted exchange rates declined about 10 percent versus competitor currencies. □

——*FOOTNOTES*——

[1] The Federal Republic plus West Berlin.

[2] The data relate to all employed persons, including the self-employed, in the United States and Canada, and to all wage and salary employees in the other countries. Hours refer to hours paid in the United States, hours worked in the other countries.

Compensation includes all payments made by employers directly to their employees (before deductions), plus employer contributions to legally required insurance programs and to contractual and private welfare plans for the benefit of employees. Labor costs include, in addition to compensation, employer expenditures for recruitment and training; the cost of cafeterias, medical facilities, and other plant facilities and services; and taxes (other than social security taxes, which are part of compensation) levied on payrolls or employment rolls. Annual data are not available for total labor costs. As used in this article, labor costs approximate more closely the concept of compensation. However, compensation has been adjusted to include all significant changes in taxes that are regarded as labor costs. For the United States and Canada, compensation of self-employed workers is measured by assuming that their hourly compensation is equal to the average for wage and salary employees.

[3] Percent changes for 1960–81, 1960–73, and 1973–81 shown in the tables are computed using the least squares method—that is, from the least squares trend of the logarithms of index numbers—in order to remove much of the effect of cyclical changes on the average rates of change, and thereby estimate the underlying trends.

[4] To compute the series for the eight European countries and 10 foreign countries, the data have been combined by aggregating the output, compensation, and hours figures for each year, adjusting where necessary for compatibility of coverage and concept. Average exchange rates for 1974–81 were used to aggregate the output and compensation data. The use of 1974–81 exchange rates, however, does not imply that these rates reflect the comparative real value of currencies for manufacturing output. Moreover, the use of exchange rates for a different period would have little effect on the combined series.

[5] The IMF publishes annual and quarterly indexes of relative unit labor costs and relative normalized unit labor costs in manufacturing—as well as relative value-added deflators, relative wholesale prices, and relative export unit values in manufacturing—for 14 industrial countries, in their monthly statistical publication *International Financial Statistics*. The OECD publishes quarterly indexes in chart form of relative unit labor costs in manufacturing, relative export unit values (prices) for manufactures, and relative consumer prices for 15 industrial countries in their monthly statistical publication *Main Economic Indicators*.

Series descriptions, data sources, and compilation methods for the IMF measures are described in "Intercountry Cost and Price Comparisons," a paper by Michael C. Deppler, Research Department, International Monetary Fund (November 1979); the OECD measures are described in *The International Competitiveness of Selected OECD Countries*, OECD Economic Outlook Occasional Studies, July 1978.

[6] The IMF weights were derived from disaggregated 5-digit Standard International Trade Classification data (up to 1,400 individual commodity classes) for each of the 14 countries covered by their series. The IMF weights have been simply adjusted to the 11-country BLS comparative series by eliminating the weights for the three uncovered countries—Austria, Norway, and Switzerland—and proportionately increasing the weights for the remaining 11 countries so that they equal 100 percent. The result should be little different from a comprehensive reweighting based on trade data for the 11 countries alone, because the omitted countries account for no more than 8.1 percent of the total 14-country weight for any of the 11 countries, and for a total of only 4 percent in the case of the United States.

[7] The weighting system is described in detail in Deppler, "Intercountry Cost and Price Comparisons."

Productivity increased in 1981 in most industries measured

Although productivity growth slowed during 1976–81 for most measured industries, a majority of significant industries show productivity gains in 1981

ARTHUR S. HERMAN

Productivity, as measured by output per employee hour, increased in 1981 in more than half of the industries for which the Bureau of Labor Statistics regularly publishes data. The growth in industry productivity was consistent with the gain in the nonfarm business sector of the economy, which grew 1.4 percent. In 1980, however, productivity declined in a majority of the measured industries.

Table 1 shows productivity trends in industries measured by the Bureau and includes measures for additional industries: millwork, office furniture (including separate measures for wood office furniture and metal office furniture), cosmetics, hand and edge tools, farm and garden machinery (including separate measures for farm machinery and equipment, and lawn and garden equipment), pumps and compressors (including separate measures for pumps and pumping equipment and air and gas compressors), and commercial banking.[1]

Changes by industry

Manufacturing. The steel industry, one of the more economically significant industries covered, gained 9.0 percent in productivity after two consecutive annual declines. This industry had a very good first half in 1981, buoyed by strong sales to the oil and gas industry. Despite a falloff in demand from many steel markets in the second half, output was up 9.8 percent while hours grew only 0.7 percent, leading to the significant productivity advance. Motor vehicle manufacturing, another key industry, had a notable gain in productivity of 4.7 percent in 1981 after three consecutive declines. Output was up 5.9 percent and hours grew 1.2 percent, as compared to a very poor previous year, when output fell 27.2 percent.

In tire manufacturing, productivity was up 13.3 percent. Output had a large gain of 8.6 percent, sustained by demand from the replacement market, while hours continued declining (−4.2 percent) in 1981. Many old and inefficient tire plants were closed in 1980, aiding the sharp productivity gain in 1981. Other large manufacturing industries with productivity increases included synthetic fibers (6.3 percent), gray iron foundries (5.9 percent), machine tools (4.6 percent), soft drinks (2.9 percent), corrugated and solid fiber boxes (2.7 percent), and pulp and paper (2.0 percent). All of these industries, except machine tools, experienced output growth in 1981.

Productivity declines were also recorded in a number of manufacturing industries in 1981. Many of these were construction related, such as construction machinery, brick and structural clay tile, and hydraulic cement. Output was down in these industries as overall construction activity continued to fall off during the year. Among other manufacturing industries with declining productivity, large drops were recorded by steel foundries (−5.5 percent), sugar (−5.2 percent), aluminum rolling and drawing (−4.0 percent), footwear (−3.6 percent), and folding paperboard boxes (−3.3 percent).

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Table 1. Indexes of output per employee hour in selected industries, 1976–81, and percent changes, 1980–81 and 1976–81

[1977 = 100]

SIC code[1]	Industry	1976	1977	1978	1979	1980	1981[2]	Percent change, 1980–81	Average annual percent change, 1976–81
	Mining								
1011	Iron mining, crude ore	113.5	100.0	116.8	125.5	129.0	138.3	7.2	5.3
1011	Iron mining, usable ore	115.9	100.0	119.2	125.6	127.5	136.1	6.7	4.6
1021	Copper mining, crude ore	99.2	100.0	109.6	103.8	100.3	100.6	0.3	0.1
1021	Copper mining, recoverable metal	94.7	100.0	107.6	97.8	91.3	96.3	5.5	–0.8
111,121	Coal mining	103.1	100.0	106.4	99.4	112.5	122.9	9.2	3.4
121	Bituminous coal and lignite mining	103.0	100.0	106.7	99.6	112.6	123.3	9.5	3.4
14	Nonmetallic minerals, except fuels	96.2	100.0	104.6	102.4	96.3	97.9	1.7	–0.1
142	Crushed and broken stone	03.7	100.0	109.0	108.4	103.3	104.1	0.8	1.8
	Manufacturing								
2026	Fluid milk	99.5	100.0	108.1	116.2	124.8	130.7	4.7	6.2
203	Preserved fruits and vegetables	100.1	100.0	104.4	99.3	101.2	(3)	(3)	[4]0.1
2033	Canned fruits and vegetables	102.3	100.0	103.7	101.4	100.6	(3)	(3)	[4]–0.2
204	Grain mill products	91.1	100.0	100.4	102.2	107.5	(3)	(3)	[4]3.6
2041	Flour and other grain mill products	85.1	100.0	101.5	98.5	99.8	103.9	4.1	2.8
2043	Cereal breakfast foods	100.0	100.0	101.7	107.6	106.5	(3)	(3)	[4]2.0
2044	Rice milling	88.7	100.0	92.7	96.3	111.8	(3)	(3)	[4]4.3
2045	Blended and prepared flour	110.9	100.0	92.5	91.0	104.8	(3)	(3)	[4]–2.1
2046	Wet corn milling	83.2	100.0	102.0	110.8	129.2	(3)	(3)	[4]10.3
2047,48	Prepared feeds for animals and fowls	90.1	100.0	100.8	102.0	106.2	(3)	(3)	[4]3.5
205	Bakery products	93.9	100.0	97.2	94.1	92.3	98.0	6.2	–0.2
2061,62,63	Sugar	95.8	100.0	101.0	108.6	109.1	103.4	–5.2	2.1
2061,62	Raw and refined cane sugar	92.5	100.0	100.8	107.3	107.8	(3)	(3)	[4]3.8
2063	Beet sugar	101.7	100.0	101.2	110.9	111.7	(3)	(3)	[4]3.0
2082	Malt beverages	95.5	100.0	100.0	107.4	112.1	117.0	4.4	4.2
2086	Bottled and canned soft drinks	94.2	100.0	104.5	105.6	109.8	113.0	2.9	3.5
2111,21,31	All tobacco products	97.8	100.0	102.8	102.2	102.2	101.4	–0.8	0.7
2111,31	Cigarettes, chewing and smoking tobacco	96.7	100.0	103.8	102.1	101.1	99.5	–1.6	0.5
2121	Cigars	99.9	100.0	98.2	103.7	110.3	114.5	3.8	3.0
2251,52	Hosiery	106.4	100.0	101.8	106.5	105.3	113.4	7.7	1.5
2281	Nonwool yarn mills	93.5	100.0	104.2	103.9	99.8	100.1	0.3	1.0
2421	Sawmills and planing mills, general	103.2	100.0	101.4	104.8	102.0	99.3	–2.6	–0.3
2431	Millwork	99.1	100.0	91.5	93.9	93.7	(3)	(3)	[4]–1.7
2435,36	Veneer and plywood	97.9	100.0	101.7	95.7	98.5	(3)	(3)	[4]–0.3
2435	Hardwood veneer and plywood	89.1	100.0	100.7	101.2	100.5	(3)	(3)	[4]2.6
2436	Softwood veneer and plywood	102.1	100.0	102.1	93.4	98.2	(3)	(3)	[4]–1.5
251	Household furniture	99.7	100.0	104.6	101.3	99.7	(3)	(3)	[4]0.1
2511,17	Wood household furniture	101.3	100.0	104.9	101.6	97.1	(3)	(3)	[4]–0.7
2512	Upholstered household furniture	98.1	100.0	108.8	104.9	101.9	(3)	(3)	[4]1.2
2514	Metal household furniture	96.3	100.0	97.4	89.9	93.1	(3)	(3)	[4]–1.7
2515	Mattresses and bedsprings	99.2	100.0	101.5	102.7	111.9	(3)	(3)	[4]2.7
252	Office furniture	89.7	100.0	100.1	107.3	108.9	(3)	(3)	[4]4.7
2521	Wood office furniture	81.9	100.0	100.7	110.7	109.2	(3)	(3)	[4]7.0
2522	Metal office furniture	94.8	100.0	99.9	104.8	108.6	(3)	(3)	[4]3.2
2611,21,31,61	Paper, paperboard, and pulp mills	95.0	100.0	103.2	105.4	105.4	107.5	2.0	2.3
2643	Paper and plastic bags	100.5	100.0	99.9	97.6	94.0	(3)	(3)	[4]–1.6
2651	Folding paperboard boxes	102.8	100.0	102.8	101.4	97.1	93.9	–3.3	–1.6
2653	Corrugated and solid fiberboard boxes	101.5	100.0	103.5	107.1	111.3	114.3	2.7	2.7
2823,24	Synthetic fibers	89.5	100.0	105.2	115.0	115.7	123.0	6.3	6.2
2834	Pharmaceutical preparations	98.4	100.0	99.0	106.4	108.2	(3)	(3)	[4]2.6
2841	Soaps and detergents	100.1	100.0	105.2	104.0	106.4	(3)	(3)	[4]2.0
2844	Cosmetics and other toiletries	94.4	100.0	99.3	93.1	82.5	(3)	(3)	[4]–3.4
2851	Paints and allied products	97.3	100.0	104.7	105.7	101.8	102.6	0.8	0.9
2911	Petroleum refining	93.0	100.0	101.3	94.9	94.2	(3)	(3)	[4]–0.3
3011	Tires and inner tubes	99.8	100.0	108.8	109.5	105.6	119.6	13.3	3.1
314	Footwear	102.1	100.0	102.5	100.2	101.2	97.6	–3.6	–0.6
3221	Glass containers	98.2	100.0	101.4	106.7	112.0	113.9	1.7	3.3
3241	Hydraulic cement	92.4	100.0	101.3	96.0	87.0	84.9	–2.4	–2.5
325	Structural clay products	94.9	100.0	102.6	96.1	97.6	93.6	–4.1	–0.6
3251,3,9	Clay construction products	94.2	100.0	102.6	92.1	94.6	85.1	–10.0	–2.2
3251	Brick and structural clay tile	102.2	100.0	96.5	85.8	85.6	76.1	–11.1	–5.7
3253	Ceramic wall and floor tile	89.0	100.0	115.3	111.8	120.3	(3)	(3)	[4]7.4
3255	Clay refractories	97.1	100.0	102.9	109.1	108.0	123.3	14.2	4.3
3271,72	Concrete products	95.0	100.0	98.6	94.6	93.2	(3)	(3)	[4]–0.9
3273	Ready-mixed concrete	98.8	100.0	103.1	99.9	93.1	(3)	(3)	[4]–1.2
331	Steel	99.0	100.0	108.3	106.9	102.9	112.2	9.0	2.0
3321	Gray iron foundries	96.4	100.0	102.1	96.8	90.8	96.2	5.9	–1.0
3324,25	Steel foundries	105.7	100.0	98.1	99.4	99.1	93.6	–5.5	–1.8
3331,32,33	Primary copper, lead, and zinc	96.0	100.0	96.5	106.5	103.5	118.3	14.1	3.6
3331	Primary copper	95.2	100.0	99.4	113.4	105.0	127.4	21.0	5.1
3334	Primary aluminum	101.4	100.0	99.6	99.7	100.0	100.9	0.9	–0.1
3351	Copper rolling and drawing	86.1	100.0	99.5	98.8	94.3	101.1	7.2	1.8
3353,54,55	Aluminum rolling and drawing	101.7	100.0	104.6	101.5	101.3	97.2	–4.0	–0.6

See footnotes at end of table.

Table 1. Continued—Indexes of output per employee hour in selected industries, 1976–81, and percent changes, 1980–81 and 1976–81

[1977 = 100]

SIC code[1]	Industry	1976	1977	1978	1979	1980	1981[2]	Percent change, 1980–81	Average annual percent change, 1976–81
	Manufacturing—Continued								
3411	Metals cans	93.4	100.0	102.3	103.6	102.6	110.9	7.2	2.6
3423	Hand and edge tools	97.6	100.0	100.6	104.3	99.0	(3)	(3)	[4]0.7
3441	Fabricated structural metal	98.9	100.0	100.4	102.0	101.9	106.7	4.7	1.3
352	Farm and garden machinery	101.1	100.0	100.8	103.2	96.3	(3)	(3)	[4]–0.7
3523	Farm machinery	102.2	100.0	98.4	100.2	94.0	(3)	(3)	[4]–1.6
3524	Lawn and garden machinery	94.3	100.0	108.6	113.9	107.4	(3)	(3)	[4]4.0
3531	Construction machinery and equipment	96.3	100.0	105.8	100.3	97.4	92.1	–5.4	–1.0
3541,42	Machine tools	98.4	100.0	102.5	101.9	98.7	103.2	4.6	0.6
3541	Metal cutting machine tools	97.3	100.0	103.6	103.1	100.9	106.7	5.7	1.4
3542	Metal forming machine tools	101.7	100.0	99.9	98.4	92.4	92.8	0.4	–2.0
3561,63	Pumps and compressors	96.8	100.0	102.6	102.5	99.8	(3)	(3)	[4]0.9
3561	Pumps and pumping equipment	92.7	100.0	101.1	100.7	97.2	(3)	(3)	[4]1.0
3562	Ball and roller bearings	106.4	100.0	105.5	106.0	105.7	(3)	(3)	–1.5
3563	Air and gas compressors	99.0	100.0	105.6	105.3	94.7	92.0	–2.9	[4]0.5
3612	Transformers	90.1	100.0	103.4	108.5	110.7	(3)	(3)	[4]5.1
3621	Motors and generators	95.9	100.0	98.6	97.9	94.9	96.1	1.3	–0.4
3631,2,3,9	Major household appliances	96.6	100.0	100.5	108.7	106.0	108.7	2.5	2.4
3631	Household cooking equipment	100.7	100.0	100.3	108.5	103.7	116.4	12.2	2.6
3632	Household refrigerators and freezers	94.0	100.0	98.4	112.2	114.6	113.2	–1.2	4.3
3633	Household laundry equipment	99.0	100.0	102.3	108.2	102.2	97.8	–4.3	0.2
3639	Household appliances, N.E.C.	93.0	100.0	104.0	104.3	101.6	100.8	–0.8	1.3
3641	Electric lamps	102.9	100.0	103.0	106.2	104.7	107.5	2.7	1.1
3645,46,47,48	Lighting fixtures	95.1	100.0	100.6	94.9	94.1	(3)	(3)	–0.7
3651	Radio and television receiving sets	100.8	100.0	113.1	118.1	115.0	(3)	(3)	[4]4.4
371	Motor vehicles and equipment	93.9	100.0	99.7	98.5	92.2	96.5	4.7	0.3
	Other								
401	Railroad transportation—revenue traffic	95.4	100.0	104.5	104.7	107.3	112.9	5.2	3.1
401	Railroad transportation—car miles	100.1	100.0	102.8	102.9	106.4	(3)	(3)	[4]1.5
4111,31,414 pt	Class I bus carriers	93.8	100.0	99.7	101.5	104.8	(3)	(3)	[4]2.4
4213 pt	Intercity trucking[5]	100.3	100.0	99.8	98.6	94.3	98.7	4.7	0.8
4213 pt	Intercity trucking—general freight[5]	96.1	100.0	98.6	96.6	87.9	92.5	5.2	–1.7
4511,4521 pt	Air transportation[5]	95.5	100.0	109.3	113.1	106.2	105.9	–0.3	2.1
4612,13	Petroleum pipelines	95.2	100.0	101.7	101.7	93.0	85.3	–8.3	–2.2
4811	Telephone communications	93.3	100.0	105.8	110.8	118.1	124.5	5.4	5.8
491,492,493	Gas and electric utilities	98.2	100.0	98.2	97.6	96.2	94.8	–1.5	–0.8
491,493 pt	Electric utilities	95.6	100.0	96.8	95.4	94.0	93.3	–0.7	–0.9
492,493 pt	Gas utilities	103.5	100.0	101.4	103.4	102.0	98.1	–3.8	–0.5
54	Retail food stores[6]	102.0	100.0	95.4	97.3	99.7	101.2	1.5	–0.1
5511	Franchised new-car dealers	98.6	100.0	98.6	94.6	99.5	100.3	0.8	0.2
5541	Gasoline service stations[6]	94.3	100.0	102.8	106.8	104.1	105.4	1.2	2.1
58	Eating and drinking places[6]	101.4	100.0	97.7	96.0	94.6	92.8	–1.9	–1.8
5912	Drug and proprietary stores[6]	97.1	100.0	102.1	102.7	105.3	102.5	–2.7	1.2
602	Commercial banking	95.0	100.0	100.7	98.5	92.7	(3)	(3)	[4]–0.6
7011	Hotels, motels, and tourist courts[6]	95.7	100.0	103.1	102.4	96.1	94.3	–1.9	–0.6
721	Laundry and cleaning services[6]	97.4	100.0	100.6	94.0	87.7	84.9	–3.2	–3.2

[1] As defined in the *1972 Standard Industrial Classification Manual* published by the Office of Management and Budget.

[2] Preliminary.

[3] Not available.

[4] Percent change 1976–80.

[5] Output per employee.

[6] Output per hour of all persons.

NOTE: Although the output per employee hour measures relate output to the hours of all employees engaged in each industry, they do not measure the specific contribution of labor, capital, or any other single factor of production. Rather, they reflect the joint effects of many influences, including new technology, capital investment, the level of output, capacity utilization, energy use, and managerial skills, as well as the skills and efforts of the work force. Some of these measures use a labor input series that is based on hours paid and some use a labor input series that is based on plant hours.

N.E.C. = Not elsewhere classified.

Mining. All the mining industries measured experienced productivity gains in 1981. Coal mining posted its second consecutive large gain, growing 9.2 percent. Although coal output was down slightly (–1.3 percent) from the previous year, hours continued to decline sharply, resulting in the productivity gain. Productivity advances in the other mining industries were not as great as for coal. Iron mining (usable ore) rose 6.7 percent, copper mining (recoverable metal) increased 5.5 percent, and nonmetallic minerals gained 1.7 percent. Both copper and iron mining had large output increases in contrast to sharp declines in 1980. The productivity gain in nonmetallic minerals, however, was based on a drop in output, because of poor demand from the construction industry, and an even larger decline in hours.

Transportation and utilities. Productivity changes varied among transportation and utility industries. In railroads (revenue traffic), productivity gained 5.2 percent. Output in the railroad industry declined for the second straight year, dropping 0.7 percent, while hours continued to fall by 5.6 percent. Although output in the trucking industry fell 4.9 percent, employment dropped even more, resulting in a 4.7-percent productivity gain.

By contrast, productivity fell 0.3 percent in air transportation, as output continued to decline, by 2.8 percent, while employment dropped 2.5 percent.

In telephone communications, productivity was up 5.4 percent as output grew 5.6 percent. However, productivity fell in both gas (−3.8 percent) and electric utilities (−0.7 percent). Output was down in gas utilities, as many consumers curtailed usage because of rising prices, while hours increased owing to the growing number of customers. Output was up only 0.8 percent in electric utilities, well below the long-term rate of 6.6 percent, while hours grew 1.6 percent, resulting in the productivity falloff. Productivity dropped sharply (−8.3 percent) in petroleum pipelines as output fell for the second consecutive year because of declining demand for petroleum products, while hours increased.

Trade and services. Productivity changes also were varied among trade and service industries. Productivity grew 1.5 percent in retail food stores, as output was up 1.9 percent and hours grew 0.4 percent. New-car dealer productivity was up 1.4 percent. Gasoline service station productivity rose 1.2 percent. Output was down 2.1 percent in this industry, as demand was off because of increased gasoline prices and higher mileage cars, while hours fell even more, as marginal stations were closed and self-service stations became more prevalent. Productivity declined 1.9 percent in both eating and drinking places and hotels and motels, as small gains in output were compensated for by larger gains in hours. In drug stores, productivity fell 2.7 percent as output declined 1.9 percent and hours were up slightly. In the laundry and cleaning industry, productivity fell 3.2 percent because of a continued decline in demand for the industry's services which resulted in a 7.2-percent decrease in output, while hours fell 4.2 percent.

Trends, 1976–81

With the exception of the metal forming machine tools industry, all of the measured industries recorded gains over the long term (generally 1947–81 or 1958–81). Over the more recent period, 1976–81, a large number of the industries had declining productivity rates. In addition, about three-quarters of the industries had lower productivity during 1976–81 than over the preceding long-term period (1947–76 or 1958–76). This slowdown in productivity is consistent with the trends in the nonfarm business sector of the economy, where productivity increased at a rate of only 0.1 percent during 1976–81, compared with 2.3-percent growth from 1947–76.

Gains. In recent years the wet corn milling industry had the highest rate of productivity increase, growing 10.3 percent per year from 1976 to 1980 (1981 data are not yet available). Output in this industry grew at the high rate of 8.6 percent, as demand for high-fructose syrup, one of the industry's major products, continued to expand. At the same time, the industry continued to build new plants utilizing highly automatic equipment and hours declined at a rate of 1.6 percent.

The second highest rate of gain was recorded by the ceramic wall and floor tile industry, in which productivity grew at a rate of 7.4 percent from 1976 to 1980. Output increased 9.2 percent, while hours grew 1.7 percent. A new technique for firing tile became widespread, which, coupled with changes in materials handling, resulted in significant labor savings. The wood office furniture industry recorded a productivity gain averaging 7.0 percent during 1976–80. Output grew at the very high rate of 19.3 percent, as demand shifted from metal to wood office furniture, while hours grew at a rate of 11.5 percent.

Other industries with high rates of gain included synthetic fibers and fluid milk, both 6.2 percent from 1976 to 1981, and telephone communications, with 5.8-percent growth over the same period.

Declines. Among the many industries posting declining productivity from 1976 to 1981, the brick and structural clay tile industry had the largest average falloff, down 5.7 percent. Output dropped at a rate of 7.1 percent, because of declining demand from the construction industry, while hours fell 1.5 percent. Other industries with significant declines over this period included cosmetics (−3.4 percent during 1976–80), laundries (−3.2 percent), hydraulic cement (−2.5 percent), and clay construction products and petroleum pipelines (both −2.2 percent).

A full report, *Productivity Measures for Selected Industries, 1954–81*, BLS Bulletin 2155, is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402. ☐

FOOTNOTES

[1] For a detailed report on these industries, see the following *Monthly Labor Review* articles: Jack Veigle and Horst Brand, "Millwork industry shows slow growth in productivity," September 1982, pp. 21–26; Arthur S. Herman and John W. Ferris, "Productivity growth average in farm machinery manufacturing," October 1982, pp. 6–10; and, Mary K. Farris and James D. York, "Hand and edge tools industry experiences slow rise in productivity," October 1982, pp. 11–14. Articles on the cosmetics, office furniture, pumps and compressors, and commercial banking industries appear elsewhere in this issue.

Productivity in commercial banking: computers spur the advance

Nevertheless, output per employee hour paralleled the trend of the economy during 1967–80, with the annual rate of growth decelerating after 1973

HORST BRAND AND JOHN DUKE

The computer was among the major forces that spurred labor productivity advance in commercial banking in 1967–80. The computer also facilitated great increases in banking output. Labor requirements per unit of output, however, declined rather slowly during the period.

Output per employee hour in commercial banking rose at an average annual rate of 1.3 percent between 1967 and 1980—nearly the same as for the nonfarm business sector as whole (1.4 percent).[1] Data for a productivity measure for years prior to 1967 are inadequate, and none was calculated. Output over the period examined rose at a rate of 6.0 percent per year, employee hours, at a rate of 4.6 percent. The rise in banking productivity was associated with strongly expanding customer services and with advances in computer technology and their rapid diffusion throughout the industry. However, the spread of branch banking, while enhancing access to banking services, somewhat retarded productivity improvement, partly because scale economies became less favorable.[2]

The labor productivity trend in banking paralleled not only the long-term rate for nonfarm business but also the significant differences in rates of change between the 1967–73 and 1973–80 periods. Over the earlier span, productivity in banking rose at an average annual rate of 2.1 percent, compared with 1.9 percent for all of nonfarm business. Subsequently, the rate decelerated to 0.7 percent a year; for nonfarm business, to 0.9 percent.

Year-to-year swings in the productivity trend were pronounced, ranging from a drop of 6.9 percent in 1974 to a spurt of 6.1 percent in 1976. During the 12-year period, years of decline occurred 4 times, characterized by employment increases in the face of slowed advances (1969 and 1979) or declines in output (1974 and 1980). In such years, restrictive monetary policy (as in 1969 and 1979) or recession (as in 1974 and 1980) constrained the demand for funds. In years when productivity gains ran substantially ahead of the long-term trend average, strong cyclical recoveries or peaks in the demand for banking services occurred (as in 1971, 1973, 1976, and 1977).[3]

Measuring productivity

The labor productivity measure for commercial banking has been developed in accordance with the usual procedures of the Bureau of Labor Statistics for measuring changes in the relation between the output of an industry and the employee hours expended in producing that output. Commercial banking produces a variety of outputs, that is, services to the public. These services have been summed on the basis of weights which reflect —or are close substitutes for—labor requirements per unit of service. The output index was then divided by

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an index of employee hours for commercial banking, so as to obtain an index of output per employee hour, or labor productivity. The labor productivity measure for banking, then, measures the change over time in the ratio of the weighted output of the composite of services to the public to employee hours.

Output has been defined in terms of the three major banking activities: (1) demand deposit transactions, involving the crediting and debiting of checks written by the public, and time and savings deposits transactions, involving deposits upon and withdrawals from accounts held by the public; (2) lending for commercial, consumer, and real estate purposes; and (3) fiduciary, involving the administration of trusts and estates, and the purchase and sale of securities on their account.

The output measure for constructing the indexes of labor productivity in banking has been obtained from data on the quantity of these various services rendered by the banks to the public. As noted, in aggregating these services, the labor requirement per unit of each of the major categories of service in a base period was used as the basis for combining the dissimilar activities. Where labor requirement data were not available, proxies were employed.

The labor inputs used in constructing the productivity measure for commercial banking have been derived from BLS data for employment and employee hours, as reported by banking establishments on the basis of their payroll records. The labor input series, therefore, is an hours paid, rather than an hours worked, measure. No adjustment has been made for differences in skill, experience, or other factors of labor quality, data for such adjustments not being available.[4]

Output of banking services

Output of commercial banks as measured by BLS rose at an average annual rate of 6.0 percent between 1967 and 1980—twice as fast as output of the total private business sector. Sources of the strong growth were the boom conditions of the early seventies and the financial needs they generated; rapid increases in check transactions; relatively greater reliance by business on external funds; and continuously heavy demand for consumer and real estate credit. Also, commercial banks expanded their share of major types of such credit, as well as of time deposits. Moreover, they emphasized the retailing aspects of their services and consequently accelerated branching. Trust department functions also grew apace as pension and other employee benefit funds proliferated.

Banking output rose at a higher rate during the 1967–73 period (7.8 percent a year) than during the 1973–80 span (4.6 percent annually). Output was dampened considerably more in the recession that bottomed in 1975 than in 1970. Loan demand rose more rapidly prior to the 1975 recession than after. The rate of deposit transactions, especially demand deposits, also lost some momentum during the second half of the seventies.

Deposits. Periods of speedup and slowdown aside, demand and time deposits rose rapidly over the long term. The number of demand deposit transactions more than doubled. The velocity of transactions (measured by the number of times a dollar of debits is charged against deposits in a given period) nearly tripled.[5] Furthermore, the importance of demand deposits, a major source of lendable funds, declined in relation to the banks' total liabilities, from 43 percent in 1967 to 27 percent in 1979.[6] Intensifying demand deposit activity, especially during 1967–73, contributed to pressures to introduce such labor-saving procedures and equipment as electronic funds transfers (EFT).[7] Thus, according to a study conducted by the Federal Reserve Bank of Atlanta, the number of checks written by the public rose at an average annual rate of 7.2 percent during the first half of the 1970's and declined to a rate of 5.6 percent during the second half.[8]

In addition to the cash-economizing efforts by the public, evident from the tendency to hold relatively low check balances after the mid-sixties,[9] certain kinds of financial transactions have generated large amounts of account activity. For example, the number of shares traded on the New York Stock Exchange in the seventies averaged nearly 3 times the volume of the sixties. Such trading usually involves multiple funds transfers through the banking system. The number of commodity futures contracts traded on commodity exchanges nearly tripled between the first and the second half of the 1967–79 period.[10] Such trading also entails numerous funds transfers through the banks. The underwriting of stock and bond issues, usually by syndicates, which also rose in the mid- and late seventies, spells the pooling of lender funds and ultimate transfer to the borrower; "(Debits) totaling several times the amount of the financing involved may be recorded in this process. . . ."[11]

There were some developments that tended to retard the growth of transactions and check volume—for example, mergers, which cause book credit and debits to replace bank transactions; bank credit cards, which tend to consolidate individual payments; and the long-term trend towards the output of services relative to goods, making for fewer intermediate transactions. These tendencies were largely offset, however, by the upswings in manufacturing and construction, which result in numerous intermediate transactions.

Time deposits generally expanded rapidly following the progressive liberalization of permissible rates under the Federal Reserve's Regulation Q. Liberalization strengthened the banks' position in retaining and attracting funds which would otherwise have been invested elsewhere. Savings and other time deposits held at the commercial banks by individuals, partnerships, and corporations climbed 106 percent between 1968 and 1980, while demand deposits rose 52 percent. Time deposits accounted for 60 percent of total commercial banking deposits in 1980, as against 54 percent in 1968 (and 35 percent in 1960). Some observers have noted that, in view of such technological advances as electronic funds transfers, the distinction between time and demand deposit accounts has become less significant.[12]

Loans. Expansion of loan output was another source of output growth. The rate of increase of loan output had begun to accelerate prior to 1967, and some of the underlying factors—for example, the emphasis on retail banking—have, of course, a long history. Loan volume being highly susceptible to the impact of the business cycle and of monetary policy on the demand for funds, year-to-year movements proved to be much more erratic for lending than for the volume of deposit transactions. The long-term trend was influenced by the increasing propensity of business to contract for term loans (that is, loans with maturities of more than 1 year); the continued accent upon retail banking; and banks' growing share of mortgage and consumer credit.

Nonfinancial business became more dependent upon funds raised in credit markets than it had been earlier (when corporations had relied more heavily upon internally generated funds). Between 1967 and 1980, the ratio of credit market borrowing by nonfinancial business to its capital expenditures averaged 44 percent, compared with 29 percent for the earlier sixties. The composition of commercial and industrial loans shifted toward term loans, indicating that banks were financing a growing proportion of the plant and equipment outlays as well as of inventories of nonfinancial business.[13]

Banks also stepped up their consumer credit operations. Here, too, growth, of course, originated in earlier years. The share of disposable income devoted to installment borrowing began to rise in the early sixties; at 16 percent in 1967, it continued to rise gradually to 20 percent in 1979. (In 1980, a recession year, the ratio dropped.) Furthermore, the commercial banks expanded their share of holdings of total consumer credit outstanding from 42 percent in 1967 to 49 percent in 1973, remaining at about that level from then on. This gain was linked in part to a shift away from retail store credit, together with growing consumer acceptance of bank credit cards and check credit.[14]

Growth in banks' real estate loans was in large part tied to the expansion in residential and commercial construction of the early seventies and to the strong recovery of both after their slump in the mid-seventies. Banks also captured a larger share of total mortgage holdings, rising from 19 percent in 1967 to 25 percent in 1979 (as the share of insurance companies, in particular, declined). Growth in this area of lending was in recent years also strongly influenced by household borrowing against equity in existing homes.[15]

Table 1. Productivity and related indexes for commercial banking, 1967–80

[1977 = 100]

Year	Output per employee hour	Output	Employee hours	Employees
1967	83.8	52.2	62.3	63.0
1968	85.3	56.3	66.0	66.7
1969	84.0	60.0	71.4	72.0
1970	85.5	64.5	75.4	76.6
1971	88.6	69.1	78.0	79.0
1972	90.3	74.3	82.3	82.9
1973	95.9	83.2	86.8	87.5
1974	89.8	82.9	92.3	92.6
1975	90.0	84.6	94.0	94.2
1976	95.0	91.8	96.6	96.8
1977	100.0	100.0	100.0	100.0
1978	100.7	105.4	104.7	104.9
1979	98.5	108.1	109.7	110.5
1980	92.7	106.1	114.5	115.7
1967–80 average annual rate of change (in percent)	1.3	6.0	4.6	4.5

Trust services. Long-term gains in the trust department output of commercial banks have been associated with the growth in the number of fiduciary accounts and the activity these accounts generate.

Between 1968 (when pertinent data first became available) and 1980, the number of such accounts rose 54 percent.[16] The increase was linked to a more than threefold rise in employee benefit accounts, reflecting the spread of corporate retirement and other employee benefit plans, as well as of pension plans initiated by self-employed persons (Keogh plans).[17] The number of personal trust accounts rose by two-thirds; they still constitute the single most important trust department service, representing more than three-fifths of bank-administered trust accounts. Their rise has in part been related to the desire to shelter current income from taxation, notably as inflation has tended to push incomes into more heavily taxed brackets.[18]

Employment and changing skills

Employment in commercial banking, currently numbering 1.5 million persons, rose 84 percent between 1967 and 1980, or at an average annual rate of 4.5 percent. Average weekly hours tended to decline somewhat, from 37.1 in the first 5 years of the period to 36.5 since then—owing chiefly to the employment of more part-time workers.[19] In no year did aggregate employee hours decline, but their most vigorous rise occurred over the first half of the review period (5.6 percent annually). That high rate was not equaled even during the cyclical recovery following the 1975 slump. From 1974 to 1980, gains averaged 3.8 percent annually.

Nonsupervisory jobs accounted for nearly four-fifths of commercial banking employment in 1980. Of these jobs, office and clerical positions again accounted for four-fifths of employment in the top 100 banks, or 37 percent of total banking employment in 1980. Women staffed 85 percent of these jobs and about one-third of all officer positions. They accounted for two-thirds of banking personnel in 1980, compared with 41 percent of all payroll employment.[20] The prevalence of relatively low-skilled jobs in banking is reflected by the ratio of average hourly earnings in the industry to average hourly earnings in the private economy. Despite the growth of positions in computer programming and systems analysis, that ratio has tended to decline, from 0.87 in the sixties to 0.73 in 1980.

Supervisory jobs in commercial banking have increased in both absolute and relative terms. Such jobs accounted for 23 percent of employment in 1980, as against 17 percent in 1967, an increase of 144 percent. Nonsupervisory jobs rose 65 percent. The ratio of nonsupervisory to supervisory employees thus dropped from 5:1 in 1967 to slightly more than 3:1 in 1980. The increase in supervisory workers was in large part linked with the expansion of branching and the attendant needs for managerial personnel. It was also related to a rise in the number of loan officers, especially for installment loans, and of credit analysts, who are frequently charged with supervisory responsibilities in addition to their regular work.

Skills needed by commercial banking employees have changed considerably, even during the relatively short period examined here. For example, the number of bookkeeping operators has dropped by more than one half since 1969 (and by more than 90 percent since 1960)—owing to the spread of electronic bookkeeping machines and computers, which require substantially fewer operators.[21] Also, tellers have tended to become less specialized as branch banking has spread. The six usual teller classifications—note, commercial-savings, commercial, savings, vault, and all-round—have in many banks been reduced to one all-round teller classification. The practice of classifying tellers by commercial or saving transactions has been declining.[22]

Most bank employees perform tasks related mainly to the banks' depository functions and loan administration. A high school education is generally considered adequate preparation for entry level jobs. Bank officers, on the other hand, usually supervise the various financial and customer services. Loan officers, in particular, are expected to be knowledgeable about the industries from which the individual bank draws its customers and to be sensitive to the often unique problems customers present—problems which frequently require handling on a personal basis. Officers usually have a college degree or an MBA.[23]

The labor inputs of commercial banks thus vary widely in terms of education, training, and skill complexity. Also, wide differences exist between the tasks that can be automated and tasks that cannot be, with the work of loan officers being least susceptible to standardization and automation. However, even in this area, a growing number of supplementary tasks have been computerized.[24]

Fixed investment and technology

Between 1967 and 1979, banks' fixed capital, including structures, furniture, and equipment, rose by a factor of three, while the stock of fixed nonresidential capital in the private business economy as a whole rose by a factor of nearly four.[25] Price indexes to deflate the banks' physical capital stock are not available, so no firm estimate of movements in constant-dollar value can be offered. When the deflators for the total capital stock of business are applied to that of the banks, a rise of about one-third in real terms would result.

About 40 percent of the banks' spending on fixed capital went for equipment and furniture during the review period. In 1980, roughly half of the banks' expenditures for fixed capital other than structures was spent on computers and computer equipment.[26] Fixed capital per employee in commercial banking, at about $16,000 in 1979, ran at three-fifths of the comparable figure for the business economy.[27]

Computer breakthrough. At the root of equipment spending has been the transformation of technology by electronic data processing (EDP). While banks progressively mechanized their routine operations throughout the forties and fifties, the resulting efficiencies improved but gradually. Some students of the field, in fact, attributed these efficiencies more to the specialization of labor and economies of scale in the industry than to mechanization.[28] A 1960 study by the Federal Reserve Bank of Philadelphia stated, "Since World War II, banks apparently have expanded operations more by hiring extra people than by using better equipment."[29] According to the study, the technology used in banks had scarcely changed during most of the first half of the 20th century. The same basic types of cash registers, punched card tabulators, billing and duplicating machines, and check signing equipment found in banks in 1914 were still the mainstay of banking technology at the end of World War II.

Although computer developments during the fifties embodied the principle of machine readability, it was the introduction of magnetic ink character recognition (MICR) in 1958 that made the breakthrough of electronic data processing in banking possible. The computer became an indispensable and major factor in improving banking productivity. Moreover, computer technology has rapidly spread throughout the industry. The first bank automation survey conducted by the American Bankers Association in 1963 showed only 7 percent of all commercial banks to be users of on-premise or off-premise computers. By 1968, 49 percent were users, and in 1980, when the latest available survey was conducted, 97 percent were. The pressures of cost efficiencies, organizational changes, and competition had reduced the proportion of surveyed banks without plans to automate from 84 percent in 1963, to 42 percent in 1968, to virtually nil in 1980.[30] While the larger banks—those with $100 million-plus in deposits—generally maintain their own computer operations, smaller banks have increasingly used their correspondent relations with the larger banks to gain access to computers. As of 1980, 26 percent of all banks operated on-premise computers, while 71 percent used off-premise computers, mostly at correspondent banks.[31] Thus, size of bank, as measured by the dollar value of deposits, does not appear to have seriously inhibited the diffusion of EDP technology in the industry.

The computer has had its greatest impact upon the deposit function, particularly upon check handling. Its full potential, however, is only beginning to be realized, inasmuch as optimally most payments transfers could be processed electronically, that is, without checks. But only a small proportion of payments is so processed at present. Each check is, in effect, "a special piece of currency, created for one transaction only, that has to pass through complex and repeated identification, verification, accounting, and sorting operations before it is retired."[32] Until the mid-seventies, the enormous and steadily growing volume of checks (estimated at 32 billion in 1979) was expected to become too expensive to handle, even by computer. But evolving technology has expanded the check-processing capacity of computers, such that they are thought to be able to "handle any conceivable number" of checks.[33]

The currently most advanced (or "third-generation") computer has a built-in reader-sorter processing capacity of 120,000 checks per hour. Manual reading and sorting of checks, which for many years has involved some machine processing such as high-speed readers, averages 1,200 to 1,400 checks, so that computer use for this phase of the check-handling process represents "order of magnitude" reductions in labor requirements.[34] For other phases of check-handling, comparable productivity advances have not been attained, although so-called rejects or exception items, which in earlier years required laborious interbank correspondence, have come to be processed with great efficiency thanks to cooperative agreements. According to surveys by the Bank Administration Institute, the average labor requirements for all phases of handling checks were reduced by well over one-half between 1970 and 1979 among surveyed banks, mainly because of computerized reading and sorting of checks and more efficient handling of exception items.[35]

In loan operations, EDP has been used for information retrieval, as well as in the administration and bookkeeping operations of such loan categories as installment loans. Credit information, mortgage servicing, bank credit card billing, and accounting have also been among major computer applications. The proportion of personnel in installment loan operations has tended to decline, but the available data do not clearly point to improved productivity in this area of banking. Staff employed in handling bank credit cards—also a type of consumer credit—has expanded in recent years.[36] Business loan operations, which require a comparatively small proportion of bank personnel, have remained relatively labor-intensive—largely owing to their specialized nature and the need for maintaining close customer contact. Even here, however, the computer is playing an increasing role. It is used to provide up-to-date credit analyses and to serve as a bankruptcy predictor. For the larger banks, it makes credit information on a worldwide basis rapidly available. It also facilitates the collection and arraying of data to meet the requirements of regulatory authorities, a task that is otherwise highly labor-intensive.[37]

Computer technology has also contributed to improved productivity in trust departments. It has been primarily applied to information retrieval for purposes of controlling individual accounts.[38] But it has been increasingly used as well in stock trading by trust departments for customer accounts. With trust departments holding the largest share of assets in stocks (49 percent in 1980 by value), such trading accounts for the major part of their activity. The basis of automated stock trading has been a numbering system first devised by the American Bankers Association's Committee for Security Identification Procedures in 1968. The use of committee numbers on stock certificates was mandated by the Securities and Exchange Commission in 1971. This and similar systems have tended to standardize stock identification and have contributed to the transfer of stock without the physical handling of stock certificates. These certificates are "immobilized," that is, they remain in central depositories. Costly errors and redundant bookkeeping entries have been nearly eliminated when trust departments have adopted the technology on which the bankers' stock transfer system is based.[39] Payments and credits involving stock transfers likewise use the system. Relative to output, trust department personnel requirements have been evidently reduced as a result of these and other computer applications.[40]

Electronic Funds Transfer. Potentially the most important use of the computer in banking remains electronic funds transfer (EFT). Although the technology for EFT has existed for nearly two decades, its acceptance by the public has been comparatively slow. Also, a large part of the costs of the check collection system and of demand deposit transactions was absorbed by the Federal Reserve and the banks, rather than passed on to users. Nevertheless, EFT has been increasingly adopted by the banks since the mid-seventies. Competition among financial institutions, as well as the developing cost advantages of EDP over conventional transfer activities, are likely further to speed adoption of EFT technology.[41]

EFT has been increasingly applied in interbank settlements through automated clearinghouses and in basic kinds of teller operations involving customer services, such as deposits and withdrawals, direct deposit of payrolls or other recurring payments, direct bill payment, and transfer of funds from savings accounts to demand deposit accounts and *vice versa*. Point-of-sale terminals, linking merchants with a network of local banks, have also been spreading, although their acceptance and use have remained limited.[42]

Automated clearinghouses have spread rather gradually, although they have not replaced the conventional clearinghouse process as they handle only paperless credit and debit entries between banks. Originating in San Francisco in 1972, automated clearinghouses currently link an estimated 14,000 financial institutions and their offices; they process an estimated 300 million items annually.[43] This number represents but a small fraction of the total number of checks drawn on banks other than the payor's own bank, but it is expected that automated clearinghouses will account for a rising proportion of all items in the clearing process. Among reasons for this expectation have been the success of the direct deposit of social security payments and of a growing number of public and private payrolls; the associated savings in mailing costs; less work incident to replacing lost checks, and the cost pressures linked to the handling of paper items (which despite the increasing efficiency of the process has been more and more complemented or replaced by EFT).[44]

Teller machines. Automated teller machines spread rapidly in the late seventies. Providing customer access by means of a magnetic-stripe bank card and unique identification entered upon a keyboard, the machines receive deposits and payments and dispense cash. Twenty-four hour access is a frequent feature, enhancing customer convenience and reducing waiting lines. Thus, automated teller machines in effect extend banking hours, although banks also view them as "peaking" equipment, helping to reduce lobby traffic during peak hours of business. The machines substitute capital for labor, but for many medium- and smaller size banks, the relatively high fixed costs of the equipment are not offset by savings in labor costs at current volumes of business—a factor that tends somewhat to retard the diffusion of the devices.[45] According to one authority, 19,000 automated teller machines were in use at the end of 1980, each averaging about 4,600 transactions per month, more than 2.5 times the volume 4 years earlier—signifying rapid consumer acceptance of this technology.[46]

The banks have also installed much technologically advanced equipment other than computers and teller machines. For example, word-processing equipment is now being operated in four-fifths of the larger and two-fifths of the smaller banks. Optical character recognition equipment—used, for example, in the processing of credit card charge slips, checks, and direct bill payments—has likewise been installed in most larger banks.[47]

The growth of branch banking

The number of commercial banking firms barely rose 5 percent between 1967 and 1979. But the total of banking offices increased 62 percent, mostly reflecting a doubling in the number of bank branches, and a continuing shift of offices towards the suburban population centers of metropolitan areas. The average population served per bank office declined from nearly 6,000 persons in 1970 to 4,400 in 1980.[48] The decline suggests that banking services became more widely and conveniently available to the public. Current-dollar disposable income per capita nearly tripled during 1967–80 (as did personal consumption expenditures), and households generated an expanding volume of banking business, supporting the spread of branch banking.

Most banks are comparatively small. Those holding total deposits of up to $50 million represent 79 percent of all commercial banks, but in 1979 accounted for only 15 percent of total deposits. Smaller banks usually maintain correspondent relations with the larger banks, and this relation amounts to a "form of multi-office banking."[49] Some of the efficiencies or customer utilities associated with large-scale banking are likely, therefore, to be shared throughout most of the industry.

The larger banks, however, are dominant. The share of deposits held by the Nation's largest banks—those with deposits of $500 million or more—was 62 percent in 1979. These banks constitute little more than 2 percent of total banks. Moreover, in metropolitan areas, the two largest banking organizations usually hold between 55 percent and 67 percent of deposits (the ratio tends to be lower in unit banking States, higher in statewide branching States).[50] Adoption of computer technology has been shown to be closely associated with bank size, as well as with holding company affiliation.[51]

As might be expected, banking employment is also concentrated in the bigger banks. Banks holding $500 million or more in deposits employed 56 percent of all banking personnel in 1979. Banks with less than $100 million in total deposits—89 percent of all banks—employed 27 percent of all personnel.[52]

Among changes in the competitive pattern of financial institutions that have affected banks has been the spread of NOW (negotiable order of withdrawal) accounts at thrift institutions; their effect on the share of time deposit accounts at commercial banks, however, cannot be assayed yet. In some other areas, the role of commercial banks has been eroded. More efficient corporate cash management, spurred by high interest rates and advanced information technology, has diminished the relative importance of demand deposits. Also, commercial banks have evidently been unable to expand their share of credit cards (15 percent of 600 million outstanding cards in recent years). Also, business and consumer credit extended by very large department store chains, automotive companies, farm equipment makers, and EDP manufacturers grew in importance until the early seventies, although their share of financial assets has apparently stabilized since.[53]

Outlook for the industry

The diffusion of EFT is likely to help improve labor productivity in commercial banks in the years ahead. During the late seventies, doubts about its widespread acceptance were expressed in some quarters.[54] Resistance by consumers to abandoning payment by check and their fear of loss of control over balances were cited as two reasons. Regulatory questions concerning the off-premises installation of automated teller machines were another. Also, smaller banks were believed to have opposed EFT because of possible competition from big money-center banks. These obstacles to the diffusion of EFT have so far been only partly overcome. However, cost considerations seem likely to compel its more rapid adoption. To illustrate, in a study of the benefits of electronic government payments done in 1977, the Federal Reserve found the costs of EFT to run nearly two-thirds below the costs of processing checks.[55] The ratio has lessened since then, for the scale economies of EFT have continued to improve, and processing and mailing costs of checks to rise.

Direct deposit of payrolls and of other recurring payments, and direct bill payment will likely also expand, partly owing to the costs of float, which banks must assess as an explicit cost under recent legislation, as well as because banks must offset the cost of handling checks against interest on demand deposits (where such interest is offered). Thus, resistance to EFT is likely to lessen as costs of processing paper items rise—speeding its diffusion.

Continued technological advances and the labor savings expected from them will probably also arise from intensified competition by nonbank financial institutions. Thus, money market funds have come to compete with time and saving deposits for both the small and large investor's dollar, and this, too, may contribute to restricting commercial banks' output growth.[56] Also, more than 80 percent of all household and virtually all business firms had checking accounts in 1977, so that the expansion of banking services from including additional households is quite limited. A partially offsetting factor may be a continued rise in cash withdrawals from automated teller machines, which are believed to be smaller and more frequent than withdrawals by cashing checks.[57] The convenience in the use of banking services made possible by the machines may encourage the banks to adopt product lines similarly appealing to customer convenience.[58]

With the spread of EFT, and other computerized and automated transactions, banks' labor requirements per unit of output are bound to continue to decline. Moreover, new branch staffing needs should be decreasing, partly because of the technological developments discussed, partly because of the already low level of population served per branch, and the consequent abatement in the number of new branches opened. Hence, commercial banks will probably become less important as a source of added employment in the years ahead—also indicated by BLS projections to 1990, which imply a slower rate of banking employment growth than over the past decade. ☐

FOOTNOTES

[1] Commercial banks are establishments primarily engaged in accepting deposits from the public and making loans and investments. They are designated as No. 602 in the Standard Industrial Classification (SIC) Manual of the Office of Management and Budget. The industry is part of SIC 60—banking, which also includes Federal Reserve Banks, mutual savings banks, trust companies not engaged in deposit banking, and establishments performing functions closely related to banking. Nonbanking subsidiaries of bank holding companies are not included; they are separately classified by primary activity. See *Federal Reserve Bulletin*, December 1972. Commercial banks account for approximately 90 percent of the employment of the total SIC 60 group.

A detailed description of banking output and of the procedures followed in measuring banking productivity, output, and employee-hours, as well as the weighting scheme underlying the output measure, is available upon request.

[2] There is wide agreement among industry observers that scale economies in banking have declined with the spread of branching—that is, more resources, including labor inputs, are required per unit of output. Among definitive studies are *Costs in Commercial Banking*, by Frederick W. Bell and Neil B. Murphy (Federal Reserve Bank of Boston Research Report No. 41, April 1968), and "Economies of Scale and Marginal Costs in Banking Operations," by George J. Benston (*The National Banking Review*, June 1965), reprinted in that report. Industry observers confirm that the tendencies analyzed in these works have persisted.

[3] Professor Charles F. Haywood of the College of Business and Economics, University of Kentucky, interprets the swings in commercial banks' labor productivity as follows: ". . . (At) the beginning of an upswing, banks have some slack in manpower and can increase output somewhat without increasing the rate of new hires. At some point in the upswing, the rate of new hires has to be increased. By the time these new hires are in place, the upswing in the economy is near its end and recession soon follows. There may also be some variation in labor turnover rates related to cyclical variation in the economy that affects input-output relationships in banks . . . (As) turnover rates are high in banking, cyclical variation in such rates could have significant effects on productivity." Communication to the BLS Office of Productivity and Technology.

[4] Among authorities upon whose conception of the banks' functions and output the BLS definition is partially based is Professor Donald Hodgman of the University of Illinois. Hodgman has viewed banking activity as consisting of a bundle of services, grouped into three categories: management of the national payments mechanism; intermediation between borrowers and lenders; and specialized financial services (of which trust activities are by far the most important ones). See Donald Hodgman, *Commercial Bank Loan and Investment Policy* (Urbana, University of Illinois, 1963), p. 165 ff; and John Gorman, *Comment,* "Real Output and Productivity of Banks," in Victor R. Fuchs, ed., *Production and Productivity in the Service Industries* (New York, National Bureau of Economic Research, 1969), p. 189 ff.

[5] See *Banking and Monetary Statistics, 1941–1970,* Board of Governors, Federal Reserve System, p. 321 ff., for a detailed explanation of the turnover rate of demand deposits.

[6] These and other data on commercial banks' shares in financial assets or liabilities were calculated from data from *Flow of Funds Accounts* (Board of Governors, Federal Reserve System), various recent issues.

[7] "Earliest concern with the payment system was rooted in the fear that growing check volumes posed a threat to the continued satisfactory performance of the system. Studies sponsored by the Federal Reserve System and by several national associations of commercial banks in the 1960's placed virtually their entire emphasis on two areas: measuring the national check volume, the pattern of the flows of checks into and through the banking system, and check processing costs; and offering technical and economic feasibility assessments of electronic alternatives of the time to check clearing and collection system. The emphasis throughout was on the use of electronic means to replace checks, or to reduce check handling, through systems created and cooperatively operated by groups of commercial banks, with a key role implied or advocated for the Federal Reserve System." Edwin B. Cox, "Developing an Electronic Funds Transfer System: Incentives and Obstacles," *The Economics of a National Electronic Funds Transfer System,* proceedings of a conference held in October 1974 (Federal Reserve Bank of Boston), p. 16.

[8] *A Quantitative Description of the Check Collection System:* Vol. 1, a report of research findings on the check collection system, cosponsored by the American Bankers Association, Bank Administration Institute, and Federal Reserve System (Atlanta, Ga., Federal Reserve Bank, 1981), p. 1.

[9] See also Bryan Higgins, "Velocity—Money's Second Dimension," *Monthly Review,* Federal Reserve Bank of Kansas City, June 1978, and George Garvy and Martin R. Blyn, *The Velocity of Money* (New York, Federal Bank of New York, 1970), p. 69.

[10] New York Stock Exchange, *Fact Book 1980,* and U.S. Commodity Futures Trading Commission, *Annual Report* (1980).

[11] Garvy and Blyn, *The Velocity of Money,* p. 43.

[12] "Increasing Competition between Financial Institutions," *Economic Perspectives* (Federal Reserve Bank of Chicago), May/June 1977, p. 23 ff.

[13] Term loans rose from 40 percent of total commercial bank loans in 1967 to 44 percent in 1973 and 48 percent in 1978.

[14] For some reasons why banks attempt to expand their credit card systems, see "EFT in the United States, Policy Recommendations and the Public Interest," The Final Report of the National Commission on Electronic Fund Transfers (Washington, October 1977), p. 134. See also *Bank Credit-Card and Check-Credit Plans* (Board of Governors, Federal Reserve System, July 1968). Banks' adoption and operation of credit plans of their own has had significant implications for their output: although credit cards result in consolidation of payments and, therefore, reduce the number of check transactions, they generate sales drafts which must be cleared through merchant's deposit accounts. Thus, they augment "the paperwork burden to the extent that (they replace) cash in a retail transaction" (p. 63.)

[15] David F. Seiders, *Mortgage Borrowing Against Equity in Existing Homes: Measurement, Generation, and Implications for Economic Activity* (Board of Governors, Federal Reserve System, 1978), Staff Economic Studies 96.

[16] See *Trust Assets of Banks and Trust Companies* (Board of Governors, Federal Reserve System; Federal Deposit Insurance Corporation; and Office of the Comptroller of the Currency), 1980 and earlier years.

[17] Indicative of the increase in corporate pension and welfare plans is the rise in the number of such plans reported by the U.S. Department of Labor. As of January 1, 1970, 157,400 such plans were reported, the number rising to 554,000 by 1977. The bulk of the assets in which the plan administrators invest consists of stocks and bonds. See *Welfare and Pension Plan Statistics, 1967, 1969, and 1971* (U.S. Department of Labor, Labor-Management Services Administration), and information from LMSA.

[18] Interview with a banking representative.

[19] Part-time workers accounted for almost one-sixth of all nonsupervisory office workers in surveyed commercial banks in 1980, up from one-eighth in 1976, according to *Industry Wage Survey: Banking, February 1980,* Bulletin 2099 (Bureau of Labor Statistics), p. 3.

[20] Equal Employment Opportunity Commission Summary Statistics, Top 100 Full Service Banks.

[21] *Technological Change and Manpower Trends in Six Industries,* p. 51, and *Industry Wage Survey: Banking,* p. 4.

[22] *Industry Wage Survey: Banking,* p. 4.

[23] See *Banking and Insurance Occupations,* Bulletin 2075–7 (Bureau of Labor Statistics).

[24] David M. Coit, "Automated Financial Analysis: A New Tool for Commercial Lending," *The Journal of Commercial Bank Lending,* March 1977.

[25] *Assets and Liabilities of all Commercial Banks in the United States, Annual Report for 1980 and Earlier Years* (Washington, Federal Deposit Insurance Corp.).

[26] Information on the average annual expenditures per bank for computer equipment, 1980–82, is provided in table 224 of *National Operations/Automation Survey, 1981* (Washington, American Bankers Association).

[27] The prices for computer hardware, as well as for calculating and accounting machinery, widely used by the banks, rose much more slowly than producer durables prices generally or tended to decline over part or all of the review period. See Robert B. Archibald and William S. Reece, "Partial Subindexes of Input Prices: The Case of Computer Services," *Southern Economic Journal,* October 1979, pp. 528–40. The authors show that second generation computers, manufactured for large business uses by IBM, dropped in price by 85 percent between 1970 and 1975. Reasons for the drop are discussed by them. At present, the BLS imputes movements in the value of computer hardware to the office and store machines and equipment group.

[28] See Bell and Murphy, *Costs in Commercial Banking,* discussion in chapter VII, p. 105 ff.

[29] "How Banking Tames its Paper Tiger," *Business Review* (Federal Reserve Bank of Philadelphia), June 1960.

[30] See *National Operations/Automation Survey 1981* (Washington, American Bankers Association), p. 7.

[31] *Ibid.*

[32] John E. Sheehan, "Higher Productivity Demand Deposits," in *The 1972 National Operations and Automation Conference Proceedings* (Washington, American Bankers Association), p. 363.

[33] John S. Reed, executive vice president of Citibank, quoted in "Electronic Banking: A Retreat from the Cashless Society," *Business Week,* Apr. 18, 1977. See also Sanford Rose, "Checkless Banking is

Bound to Come," *Fortune*, June 1977, p. 118 ff.

[34] Information from Bank Administration Institute and Federal Reserve.

[35] See *1979 Survey of the Check Collection System* (Park Ridge, Ill., Bank Administration Institute, 1980).

[36] *Functional Cost Analysis, 1979 Average Banks.* Based on data furnished by 751 participating banks in 12 Federal Reserve districts. Computer processing of bank credit card transactions has remained similar to that of checks and therefore is technologically not as advanced as computer processing of transactions under credit cards issued by the big oil companies, where optical character recognition has been part of the computer operation. (Conversation with ABA representatives.)

[37] "Automated Financial Analysis."

[38] *Third Trust Operations and Automation Workshop. 1972 Proceedings* (Washington, American Bankers Association). See also *The Bottom Line: Proceedings, 1976 National Trust Operations and Automation Workshop, New York, March 21–24, 1976*, remarks by William Schladebeck, p. 216 ff.

[39] *Third Trust Operations—Proceedings*, p. 58.

[40] H. Russell Morrison, "CUSIP Report—Beyond Apr. 1, 1972," *Third Trust Operations & Proceedings*, p. 58.

[41] See N. Sue Ford, "Electronic Funds Transfer: Revolution Postponed," *Economic Perspectives* (Federal Reserve Bank of Chicago), November–December 1980, p. 16 ff. Competition between different types of financial institutions has been fostered by high interest rates together with NOW (negotiable order of withdrawal) accounts at thrift institutions, and of share drafts at credit unions. Such instruments have been authorized on a national basis by the Deregulation and Monetary Control Act of 1980. A detailed analysis of this law may be found in *Economic Perspectives*, September–October 1980, p. 3 ff.

[42] Ford, "Electronic Funds Transfer," p. 18.

[43] Haywood, communication to the BLS. See Philip E. Coldwell, "The ACH in Perspective" (*Remarks at the 4th Annual NACHA Surepay Conference, Houston, Tex., Mar. 13, 1979*), p. 3.

[44] Ford, "Electronic Funds Transfer," p. 16. See also Carl M. Gambs, "Automated Clearinghouses—Current Status and Prospects," *Economic Review* (Federal Reserve Bank of Kansas City, May 1978), p. 3 ff.

[45] ATM's often "substitute . . . for a more costly full-service brick-and-mortar branch." Haywood, communication to BLS. Another observer has stated that, "The ATM also reduced the need for tellers, lowering not only the salary cost to the bank, but also of employee benefits and pension plans." Ford, "Electronic Funds Transfer", p. 17. See also David A. Walker, *An Analysis of Changes in EFTS Activity Levels, Costs and Structure in the U.S.: 1975 to 1977* (Washington, Federal Deposit Insurance Corp.), Working Paper No. 77–3, especially p. 7.

[46] Linda Fenner Zimmer, "ATM Acceptance Grows, Builds Customer Base for Other EFT Services," *The Magazine of Bank Administration*, May 1981, p. 31. Cited in *Statistical Information on the Financial Services Industry* (Washington, American Bankers Association, 1981), p. 107.

[47] American Bankers Association, 1978 Survey, *op. cit.* On the productivity effects of such equipment, see also David Cockroft, "New Office Technology and Employment," *International Labour Review*, November–December 1980, p. 689 ff.

[48] *Statistical Information on the Financial Services Industry*, p. 89.

[49] Carter H. Golembe, "Growth of Bank Holding Companies," in Herbert V. Prochnow, ed., *The Changing World of Banking* (New York, Harper & Row, 1974), p. 23.

[50] "Recent Changes in the Structure of Commercial Banking," *Federal Reserve Bulletin*, March 1970, p. 207.

[51] See Charles F. Haywood, "Regulation, Technological Change and Productivity in Commercial Banking," in *Productivity Measurement in Regulated Industries* (New York, Academic Press, 1981), p. 300–01.

[52] Based on unpublished data of the Federal Deposit Insurance Corporation.

[53] Will R. Sparks, *Financial Competition and the Public Interest* (New York, Citicorp., 1978), p. 23, also pp. 16, 17.

[54] Reed, "Electronic Banking." See also William Ford, *The Payments System of the 1980's*, presented at the Second Annual Shared EFT Systems Conference, Atlanta, Ga., Feb. 5, 1981 (Federal Reserve Bank of Atlanta).

[55] *Costs, Savings and Benefits of Electronic Government Payments* (Unpublished study by the Division of Federal Reserve Bank Operations, Board of Governors, Federal Reserve system, June 1977).

[56] See "The Changing Environment for Banking," an address by J. Charles Partee, before the American Institute of Certified Public Accountants Annual National Conference on Banking, Capitol Hilton, Washington, D.C., Dec. 4, 1980. Also, "America's New Financial Structures," *Business Week*, Nov. 17, 1980, p. 138 ff.; and Constance Dunham, "The Growth of Money Market Funds," *New England Economic Review* (Federal Reserve Bank of Boston), September–October 1980, p. 20 ff.

[57] On the factors influencing the evolution of EFT and the check payments system, see *The Payments System of the 1980's*, op. cit.

[58] Some nonbank services built into ATM's are noted in "Diebold's Shift to Automated Tellers Works," by Margaret Yao, *The Wall Street Journal*, July 15, 1982, p. 45.

Cosmetics industry achieves long-term productivity gains

But recent declines have beset an industry in which productivity has grown rapidly since 1958; gains have been associated with more efficient plants, improved technology, and an expanding line of products which serve changing markets

PATRICIA S. WILDER

As measured by output per employee hour, productivity in the cosmetics and other toiletries industry rose at an average annual rate of 4.0 percent from 1958 to 1980. The rate of growth was substantially higher than the 2.8-percent gain for all manufacturing.[1]

The rise in productivity resulted from a rapid expansion in output, which increased at an average annual rate of 7.3 percent, and a more moderate increase in employee hours, 3.1 percent. Productivity gains have resulted primarily from a trend toward fewer and larger plants producing a greater level of output, and continued improvements in production and packaging operations, such as those of lipstick and toothpaste.

The movements in output per employee hour have not been steady. From 1958, annual increases in productivity ranged from 14.9 percent to 0.4 percent. Declines in productivity occurred in 6 years, the most recent and largest in 1980, when it dropped 11.4 percent. (See table 1.)

Productivity growth can be divided into three distinct subperiods, 1958–65, 1965–70, and 1970–80. The first period was marked by substantial growth in the industry. Larger capacity plants came on line and productivity grew at a rate of 7.5 percent annually. The growth was associated with a rapid rate of increase in output of 10.9 percent. However, employee hours increased at a slower pace—averaging 3.1 percent.

From 1965 to 1970, productivity growth slowed significantly, averaging only 0.2 percent a year. Although output continued to expand at a high rate of 7.0 percent per year, employee hours increased at almost the same rate, 6.8 percent. The industry at this time was undergoing a more pronounced period of expansion. Data available for 1963 and 1972 show a 91-percent increase in employment in establishments with 500 persons or more. The increase in the number of these large establishments (from 15 to 27) with the normal staffing and startup problems no doubt retarded productivity growth temporarily.

After 1970, productivity growth resumed at a rapid pace, averaging 5.7 percent annually through 1977. Beginning in 1978, three successive declines in productivity occurred. The decrease recorded in 1978 was less than 1 percent. However, a decline of 6.2 percent in 1979, followed by a drop of 11.4 percent in 1980, reduced the average annual gain in productivity to 2.7 percent during 1970–80. The decreases in 1979 and in 1980, a recession year, were related to similar large declines in output. However, employee hours did not follow output, but instead increased 2.3 percent in 1979 and 1.3 percent in 1980.

Output increases fourfold

Productivity growth in the cosmetics and other toiletries industry is closely linked to output growth, which has increased fourfold since 1958. Factors affcting this growth have been a larger population, the growing

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number of working women, and extensive advertising and sales promotions.[2]

The industry is highly competitive, and this competition has spurred manufacturers' efforts to expand the range of their products. Many new products and lines have been introduced to meet changing consumer needs and preferences. For example, because of the increased number of women entering the work force, more products have been developed to meet their needs. Also, greater acceptance of the industry's products by men has been a factor in output growth. They are purchasing more fragrances and skin care products such as colognes, after-shave lotions, and moisturizers. Output growth has also been spurred by new products specifically designed for ethnic populations and for older consumers. Growth has also occurred in skin treatment and sun care products because of an increased concern about aging skin and the rise in the incidence of skin cancer and its relationship to ultraviolet sunrays.[3]

Another factor that has contributed to output expansion has been the greater use of synthetic substances in cosmetic and toiletry preparations. Increased use of synthetics, which are often less expensive, to supplement or replace some of the scarce natural products derived from plants and animals and to serve as the bases for new products has enabled the industry to meet demand and to expand its market.

Because demand for cosmetics and toiletries has been high, some analysts had considered the industry to be nearly recession-proof.[4] Indeed, until 1979, only two decreases in output were noted in this study and both were less than 1 percent. However, in 1979, output declined 4.1 percent and in 1980 a further drop of 10.3 percent occurred. These two decreases in output had the effect of reducing the long-term average annual rate of growth in output from 8.0 percent (through 1978) to 7.3 percent.

Plant size and employment

An important factor affecting productivity growth in the industry has been the trend toward larger, more efficient establishments. This is reflected in the steady increase in the number of establishments with 500 employees or more. During 1958–80, the number of these establishments tripled (from 11 to 33), as did employment in these plants. An insight into their efficiency is gained from information on value added per employee. In 1977, the most recent year for which data are available, value added per employee in the large establishments was more than $100,000. This was about 37 percent greater than the level in plants having fewer than 500 employees. The trend toward larger plants with their greater production volume has resulted in significant economies of scale, which in turn has aided the industry's productivity growth.[5] Large establishments now account for about 65 percent of the industry's

Table 1. Productivity and related indexes for the cosmetics and other toiletries industry, 1958–80

[1977=100]

Year	Output per hour			Output	Employee hours		
	All employees	Production workers	Nonproduction workers		All employees	Production workers	Nonproduction workers
1958	40.0	39.0	41.7	22.7	56.8	58.2	54.5
1959	43.9	41.9	47.7	26.5	60.3	63.3	55.5
1960	45.1	44.1	46.7	26.9	59.7	61.0	57.6
1961	46.9	47.0	46.6	29.1	62.1	61.9	62.4
1962	49.6	49.7	49.6	32.0	64.5	64.4	64.5
1963	57.0	58.1	55.4	38.2	67.0	65.7	68.9
1964	63.8	65.3	61.4	42.6	66.8	65.2	69.4
1965	65.7	66.6	64.5	47.6	72.4	71.5	73.8
1966	65.2	65.1	65.4	52.1	79.9	80.0	79.7
1967	62.5	63.1	61.6	51.8	82.9	82.1	84.1
1968	67.5	67.4	67.7	59.8	88.6	88.7	88.3
1969	64.8	64.7	65.1	62.0	95.7	95.9	95.3
1970	65.9	68.9	61.6	66.8	101.4	97.0	108.5
1971	73.3	80.4	64.2	68.0	92.8	84.6	106.0
1972	82.5	89.1	73.9	77.8	94.3	87.3	105.3
1973	87.2	97.4	74.9	84.7	97.1	87.0	113.1
1974	91.6	95.2	86.4	88.1	96.2	92.5	102.0
1975	94.0	95.6	91.6	87.5	93.1	91.5	95.5
1976	94.4	94.3	94.6	95.5	101.2	101.3	101.0
1977	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1978	99.3	98.6	100.6	104.5	105.2	106.0	103.9
1979	93.1	93.8	92.0	100.2	107.6	106.8	108.9
1980	82.5	80.2	86.5	89.9	109.0	112.1	103.9
	Average annual rates of change (in percent)						
1958–80	4.0	4.2	3.8	7.3	3.1	2.9	3.3
1976–80	–3.4	–3.8	–2.6	–1.2	2.2	2.7	1.4

value of shipments, compared with 35 percent in 1958.

Overall employment in the industry expanded by more than 90 percent between 1958 and 1980, rising at an average annual rate of 3.1 percent. Employment, at 29,900 in 1958, had risen to 57,200 by 1980. Total employee hours grew at the same rate as employment.

The largest increase in employment occurred during 1965–70, when the industry was expanding more rapidly. Although employment rose 28 percent from 1958 to 1965, it grew 39 percent during 1965–70. Employment growth from 1970–80 moderated substantially, declining in 5 years. The overall increase in employment during the last period was only 7.9 percent.

Compared with all manufacturing, the number of female employees in the industry is high. They accounted for 57 percent of total employment in 1958, increasing to 60 percent in 1980. By contrast, women made up 26 percent of manufacturing employment in 1958 and 31 percent in 1980.

The proportion of nonproduction workers in the industry is higher than in most other manufacturing industries—37 percent of total employment in 1980, compared with 30 percent for all manufacturing. The higher proportion reflects the larger number of professional, technical, clerical, and sales personnel employed.

Although data on the occupational composition of employees in the industry are not available, some insights can be obtained from the broader aggregation, soaps and cosmetics.[6] In 1978, an estimated 5 percent of all workers employed in the manufacture of soaps and cosmetics were chemical and industrial engineers, chemists, and chemical technicians. Sales and clerical personnel accounted for 26 percent of total employment. The industry also employs many semiskilled workers, such as packers, wrappers, examiners, assemblers, and mixers, who made up 33 percent of the work force in 1978.

Technological advances

The industry produces a vast array of products, including shaving preparations, perfumes, colognes, hair preparations, dentifrices, mouthwashes, lipsticks, deodorants, nail products, creams, and lotions. Standards for the materials used in these products have been upgraded and many are now equal to the material specifications for the pharmaceutical industry.[7]

Although the basic processes involved in the production of cosmetics and toiletries have changed little over the period, there have been improvements in the equipment and methods used. Many of these changes have occurred on an in-house basis, with individual plants developing some of their own equipment and modifying or integrating production lines to improve efficiency. An improvement that is widespread throughout the industry is the increased speed of filling and packaging lines.

One of the major processes involved in the production of cosmetics and toiletries is batch preparation of the products prior to packaging. Some improvements have occurred that have increased efficiency in preparing the batches. As volume warrants, the more frequently used raw materials are stored in large tanks and then transferred directly to the mixing tanks via a pipeline system. Previously, the raw materials were received in drums and were manually dumped into the mixing tanks. Semiautomatic controls allow the operator to easily select the necessary raw materials. The final product is moved via pipes to stainless steel storage tanks, where air-controlled pumping systems transfer the batches to the filling lines.

Manufacturers have developed and adopted high-speed filling and packaging equipment for use with large-volume production runs. Small-volume runs or products requiring complex or delicate operations are generally less automated. Much of the equipment used in high-speed production can automatically perform such operations as bottle feeding, product coding, and packing of bottles and boxes into cartons for shipment. One recent innovation in this area is the automatic unscrambler and bottle feeder. Bottles, jars, or caps are automatically sorted and fed directly to the filling lines.

Products in the form of sticks. For lipsticks and other items such as eye shadow, deodorant, and perfume, the basic processing method first involves melting and mixing the base products. Next, the forms, castings, or molds are filled and cooled. Most products are then removed from the forms and are placed into holders. In a few cases, particularly deodorant sticks, filling directly into the holders for molding is possible.[8]

One of the more complicated operations is the production of lipsticks. Preparation of bulk material for lipstick production is done using batch processing. The most complex step is molding the sticks. Their production was formerly performed as a manual operation; however, many manufacturers have adopted automatic or semiautomatic equipment. The equipment consists of a storage container with an attached dosing device and a circular molding table with interchangeable molds that can handle different shapes and sizes of lipsticks. The equipment also includes a feeding table for lipstick bases, and pressurized-air equipment for pushing solidified sticks into the bases. Lipstick covers and bottom labels are automatically put onto the bases. Automatic equipment places the completed sticks into cartons.[9]

Toothpaste production. In the manufacture of toothpaste, automated equipment is now being used that makes the batch process almost one continuous operation—reducing labor requirements. The filling process is done using high-speed equipment and an automated tube feeder. With the high-speed equipment, a dental cream line can now be operated with two persons; previously four or five were needed.

There has also been a change in the material used for toothpaste tubes. The trend has been to switch from metal to laminated plastic tubes, which are generally easier to handle and can be processed about 10 percent faster. Heat sealing the laminated tubes is quicker than crimping metal, thus increasing production speed.[10]

Tubes leaving the filling line are packaged using automatic case packers and palletizers. It now requires two or three fewer people to strap cases, and this equipment has increased the number of pallets that can be packed. The entire pallet load is now automatically wrapped with shrink film (a form of clear plastic wrap).

Fragrances. The production process for perfumes and colognes has changed little because of the unique storage requirements for aging. The batch process is not a continuous operation because, prior to filling and completion, these products must be pumped into storage tanks and left for 3 to 7 days to age. However, some improvements have occurred in the equipment used in filtration and in filling. After aging, perfumes and colognes are chilled to a temperature near freezing. To obtain a crystal-clear product, they are processed through a filter press to remove sediments. The liquids are then pumped to the filling lines through pipelines. Advanced equipment is being more widely used to assure proper filtration and filling. The filling and packaging equipment that is used for other cosmetic products is also used for perfumes and colognes. Considerable labor reductions have occurred because of the availability of more sophisticated high-speed equipment.[11]

Aerosol products. A technological innovation which became widespread in the industry in the 1960's was the aerosol dispenser. Substantial improvements to the aerosol unit, which have reduced labor requirements, have occurred during the last several years. Valves and stems are automatically placed into the aerosol units on the filling line. Previously, this operation was done manually. The valves are then mechanically crimped to allow pressurization. After filling, the aerosol units pass through an explosion-proof area for pressurization and safety checking. The units are also inspected for leakage and are automatically scanned for liquid content.

Scientific instrumentation. For new product development and quality control, the industry now utilizes sophisticated instrumentation such as gas and high-pressure liquid chromatography, mass spectroscopy, and nuclear magnetic resonance.[12] This equipment has reduced labor requirements and increased the speed of the chemical analytical process.

Computer technology has aided productivity growth in several ways. Computers are increasingly being used for jobs such as flow and measurement of raw materials, formula calculations, mixing operations, and are already widely used in the batch operations for verification of the individual batches. Also, computers have assisted in reducing the turnaround time for products and in decreasing the amount of paperwork.[13] They are being used more often in warehouses to perform such tasks as product location, inventory control, and shipping documentation. In the important area of sales, marketing analysis is more easily accomplished with computer-based information systems.

PRODUCTIVITY GROWTH should continue because of improvements in the production processes and in the equipment used. Increased utilization of computer technology may also contribute to productivity gains.

Demand for the industry's products is expected to rise. According to industry analysts, some of the fastest growing categories are facial treatments, hair straighteners, manicuring products, after-shampoo products, sun care products, and men's fragrances. Factors which are believed to be important for future industry growth include increased use of cosmetics and fragrances by men, growth in products promoted for the ethnic populations, more products to meet the needs of older consumers, and the growing awareness of skin care. ☐

FOOTNOTES

[1] The cosmetics and other toiletries industry comprises establishments primarily engaged in manufacturing perfumes (natural and synthetic), cosmetics, and other toilet preparations. This industry also includes establishments primarily engaged in blending and compounding perfume bases; and those manufacturing shampoos and shaving products, whether from soap or synthetic detergents. The industry is designated as SIC 2844 in the Office of Management and Budget's *Standard Industrial Classification Manual, 1972.* Data prior to 1958 are not comparable. All average annual rates of change are based on the linear least squares trends of the logarithms of the index numbers. Extensions of the indexes will appear in the annual BLS Bulletin, *Productivity Measures for Selected Industries.*

[2] *U. S. Industrial Outlook,* various issues. See also, "Beauty Chemicals '80," *Chemical Marketing Reporter,* June 23, 1980, p. 29.

[3] *Industrial Outlook,* 1980, p. 155.

[4] "Chemical Finance," *Chemical Business,* Aug. 24, 1981, pp. 39–45. See also, "Beauty Chemicals '80," *Chemical Marketing Reporter,* June 23, 1980, pp. 29–47.

[5] Based on conversations with officials of the Noxell Corporation and Helene Curtis Industries, Inc.

[6] *The National Industry-Occupation Employment Matrix,* 1970, 1978, and Projected 1990, Vol. 1, Bulletin 2086, Bureau of Labor Statistics, April 1981, pp. 155–58. The data cited relate to soaps and cosmetics (SIC 2841 and 2844). However, because cosmetics employs 63 percent of the total work force in both industries, these data should be representative for cosmetics.

[7] *Industrial Outlook,* 1970, p. 184.

[8] Peter Weckerle, "Molding Process for the Production of Lipsticks," *Cosmetics and Toiletries*, Vol. 95, May 1980, p. 81.

[9] Wendel Dinkel, "Processing of Lipsticks," *Cosmetics and Toiletries*, Vol. 92, February 1977, pp. 30–34.

[10] The discussion on toothpaste production is based on conversations with representatives of Colgate-Palmolive Co. and Lever Brothers Co.

[11] The discussion on perfumes and colognes is based on conversations with Heinz J. Eiermann, director, Division of Cosmetics Technology, Food and Drug Administration, Washington, D. C.

[12] *Industrial Outlook*, 1977, p. 152. Also conversations with Heinz J. Eiermann, Food and Drug Administration.

[13] Information contained in a statement by Kenneth R. Cerra, quality control director, Noxell Corporation, before the Society of Cosmetic Chemists Annual Scientific Seminar, reprinted in *FDC Reports, Toiletries, Fragrances and Skin Care*, May 25, 1981, p. 6.

APPENDIX: Measurement techniques and limitations

Indexes of output per employee hour measure changes in the relation between the output of an industry and employee hours expended on that output. An index of output per employee hour is derived by dividing an index of output by an index of industry employee hours.

The preferred output index for manufacturing industries would be obtained from data on quantities of the various goods produced by the industry, each weighted (multiplied) by the employee hours required to produce one unit of each good in some specified base period. Thus, those goods which require more labor time to produce are given more importance in the index.

In the absence of physical quantity data, the output index for the cosmetics and other toiletries industry was constructed using a deflated value technique. The value of shipments of the various product classes were adjusted for price changes by appropriate Producer Price Indexes to derive real output measures. These, in turn, were combined with employee hour weights to derive the overall output measure. These procedures result in a final output index that is conceptually close to the preferred output measure.

The indexes of output per employee hour relate total output to one input—labor time. The indexes do not measure the specific contribution of labor, capital, or any other single factor. Rather, they reflect the joint effect of factors such as changes in technology, capital investment, capacity utilization, plant design and layout, skill and effort of the work force, managerial ability, and labor-management relations.

The office furniture industry: patterns in productivity

Product proliferation and short production runs limited the use of laborsaving equipment in office furniture establishments; as a result, productivity grew only moderately during 1958–80

J. Edwin Henneberger

Productivity growth (as measured by output per employee hour) in the office furniture industry[1] has been low, in large part because of relatively short production runs engendered by product proliferation. Between 1958 and 1980, the industry posted an average annual productivity gain of 1.8 percent, substantially below the 2.8-percent rate for all manufacturing industries. The gain resulted from growth in output of 5.5 percent, annually, and employee hours of 3.6 percent.

In many industries, declines or small gains in output are associated with reduced or even negative growth in productivity. This seems to be true of the office furniture industry as a whole. (See table 1.) Thus, in the 9 years in which output either declined or grew at a less than average rate, productivity either fell or grew at a less than average rate in 5 of these years.

The trend in productivity for the overall office furniture industry must be viewed in light of the underlying trend movements of the two component industries—wood office furniture and metal office furniture. Metal furniture is the dominant industry in the office furniture group, employing about two-thirds of the 53,000 workers and accounting for roughly the same percent of shipments. Although both industries exhibited nearly the same growth in productivity between 1958 and 1980 (1.7 percent for wood furniture and 1.8 percent for metal furniture), the growth in output and employee hours was more diverse, with both output and hours growing at much higher rates in the wood component (7.2 percent and 5.5 percent) than in metal (4.6 percent and 2.8 percent).

The metal office furniture industry, which experienced five output downturns between 1958 and 1980, was, nevertheless, able to maintain productivity growth in all but 2 of these years. This suggests that the industry's work force is flexible and can be rapidly reduced if industry sales are declining. However, the wood office furniture industry was never able to maintain positive productivity during the six declines in output from 1958 to 1980. The more highly skilled work force, utilizing craftworkers, in the wood segment may be more difficult to periodically layoff and rehire.

Productivity trends have varied

The industry's long-term productivity growth can be divided into three periods (table 1). From 1958 to 1966, productivity grew at a rate of 3.6 percent annually. Slowing dramatically, productivity growth advanced by only 0.1 percent per year during the middle time span —1966 to 1975. However, from 1975 to 1980, the rate of advance increased to 5.1 percent per year.

Recession-induced falloffs were particularly acute from 1966 to 1975. During the 1970 recession, industry output dropped 17 percent while employee hours were reduced by 6.6 percent. Consequently, productivity in 1970 fell by more than 11 percent. During the 1974–75 recession, output declined 5.3 percent in 1974 and 17.7 percent in 1975 while productivity posted its largest falloff in 1974 (−8.3 percent). More recently, productivity exhibited positive growth during the short reces-

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Table 1. Productivity and related indexes for the office furniture industry, 1958–80

[1977 = 100]

Year	Output per employee hour	Output	All employee hours	Employees
1958	64.0	33.1	51.7	51.8
1959	69.8	37.5	53.7	52.9
1960	70.4	39.4	56.0	54.7
1961	72.5	38.4	53.0	51.8
1962	74.4	42.1	56.6	55.8
1963	75.9	45.6	60.1	58.7
1964	82.1	50.8	61.9	60.0
1965	84.2	57.5	68.3	64.9
1966	86.7	67.9	78.3	74.7
1967	86.5	69.7	80.6	78.2
1968	85.2	70.9	83.2	78.7
1969	88.0	81.4	92.5	88.9
1970	78.2	67.6	86.4	82.7
1971	83.9	64.8	77.2	74.9
1972	91.8	82.7	90.1	87.3
1973	90.6	87.5	96.6	94.4
1974	83.1	82.9	99.8	98.9
1975	85.5	68.2	79.8	81.8
1976	89.7	75.8	84.5	85.6
1977	100.0	100.0	100.0	100.0
1978	100.1	108.1	108.0	107.8
1979	107.3	121.1	112.9	110.9
1980	108.9	125.9	115.6	118.4
	Average annual rates of change			
1958–80	1.8	5.5	3.6	3.8
1958–66	3.6	8.4	4.6	4.1
1966–75	0.1	1.4	1.4	2.0
1975–80	5.1	13.9	8.3	8.0

sion in 1980. However, this gain in productivity (1.5 percent) was somewhat less than the industry's long-term growth (1.8 percent per year).

Among the component industries, the same midterm pattern of productivity slowdown is evident. (See table 2.) From 1958 to 1966, productivity advanced in both industries at about 3.6 percent per year. But from 1966 to 1975, productivity fell at an annual rate of 1.1 percent in the wood component while advancing by only 0.5 percent per year in the metal furniture industry. Rebounding from the recession-marked middle period, productivity advanced sharply from 1975 to 1980 in the wood and metal industries—7.2 and 3.8 percent, respectively. Output in this recovery period was up sharply in both industries, paced by the nearly 22-percent average annual growth in wood furniture. Lagging somewhat behind wood furniture, the output of metal furniture increased by about 10 percent per year during this later period, as market share was lost to the more natural look and feel of wood.

Office furniture demand growing

Between 1958 and 1980, output of the office furniture industry grew at an average annual rate of 5.5 percent per year, substantially above the 3.8-percent average rate for all manufacturing industries. A number of factors have shaped the demand for office furniture and the industry's output growth. Some of these factors have included the amount of available office space, growth of the white-collar work force, replacement demand, and the introduction of new products.

The most important factor influencing the long-term growth of office furniture undoubtedly has been the growth of the white-collar or office work force. Between 1958 and 1980, white-collar workers have grown from about 27 to nearly 53 million. Currently, officeworkers account for slightly more than one-half of the total employed work force.[2] This translates into a 2.9-percent average annual increase. Available office space also is a determinant of office furniture demand. The amount of public and private detached office space doubled between 1958 and 1980.[3]

As the stock of existing office furniture grows, the demand for replacement of wornout or obsolete equipment grows also. The data suggest that in recent years roughly one-third of office furniture production has been consumed by the replacement market.[4]

The introduction of new products also stimulates increased demand for office furniture. In the past, office furniture usually consisted of desks, chairs, tables, and storage equipment, sold as individual pieces. Now, modular or systems furniture is sold as complete integrated packages that include movable partitions, storage components, and service modules. Advantages claimed

Table 2. Productivity indexes for the office furniture and two component, 1958–80

[1977 = 100]

Year	All office furniture	Wood furniture	Metal furniture
1958	64.0	67.1	64.5
1959	69.8	69.5	71.6
1960	70.4	68.0	72.7
1961	72.5	70.5	74.7
1962	74.4	69.9	77.9
1963	75.9	80.4	75.9
1964	82.1	84.5	82.9
1965	84.2	82.8	86.3
1966	86.7	85.9	88.3
1967	86.5	88.1	87.6
1968	85.2	87.7	86.2
1969	88.0	91.9	88.5
1970	78.2	83.9	78.0
1971	83.9	81.2	86.4
1972	91.8	84.5	96.7
1973	90.6	78.5	97.9
1974	83.1	83.0	84.5
1975	85.5	80.5	88.9
1976	89.7	81.9	94.8
1977	100.0	100.0	100.0
1978	100.1	100.7	99.9
1979	107.3	110.7	104.8
1980	108.9	109.2	108.6
	Average annual rates of change		
1958–80	1.8	1.7	1.8
1958–66	3.6	3.5	3.6
1966–75	0.1	−1.1	0.5
1975–80	5.1	7.2	3.8

for systems furniture include design flexibility, more efficient use of floor space, low rearrangement costs, and built-in electrical outlets. In recent years, systems furniture has outpaced the growth of conventional office furniture. Currently, systems furniture accounts for about 20 percent of the total office furniture market. Computers and word processors, which require support furnishings, have also resulted in increased demand for office furniture.

Industry employment more than doubles

The number of employees in the office furniture industry increased from 23,000 in 1958 to about 53,000 in 1980. Sustained expansion of the work force during the 1960's accounted for much of this growth.

While the overall employment growth for the industry was 3.8 percent per year from 1958 to 1980, employment trends varied among the subindustries. The work force in the wood office furniture industry expanded at an average of 6.0 percent per year. The metal furniture industry grew at less than half of that—2.8 percent per year.

Compared with other manufacturing industries, office furniture production is relatively labor intensive. About 10 percent more production worker hours are needed to generate $1 of added value in office furniture than in all manufacturing. Among the component industries, wood office furniture is the most labor intensive.

Production workers accounted for 79 percent of total industry employment in 1980, down slightly from the 81 percent reported in 1958. About 25 percent of the industry's workers in 1980 were women, slightly less than the 31 percent level for all manufacturing. Average hourly earnings of production workers—$5.92 in 1980—were somewhat below that of the all manufacturing rate of $7.27. Over the long term, employee turnover has been slightly below that of the all manufacturing rate.

Industry establishment size increasing

Although office furniture production is geographically dispersed throughout the United States, there is a large concentration of firms in Ohio, Indiana, Illinois, Michigan, and Wisconsin, with many plants clustered in and around Grand Rapids, Mich. Until World War II, the Grand Rapids area had been a major center for household furniture. After the war, the household furniture industry dispersed, and commercial and office furniture manufacturers moved in to fill the void.

From 1958 to 1977, the number of establishments in the industry has been growing. In the wood segment, the number of establishments more than doubled, while in metal furniture, the number increased by only 25 percent. For the industry as a whole, average employment size per establishment increased by about 12 percent. During the same period, companies primarily manufacturing office furniture increased from 289 in 1958 to 486 in 1977—most of this growth occurring in the wood furniture segment. At the same time, the proportion of industry shipments accounted for by the four largest companies in each industry increased modestly.

Between 1975 and 1980, the average annual growth in capital expenditures per employee was lower for the office furniture industry than for all manufacturing. For example, from 1958 to 1975, capital expenditures per employee grew at an annual rate of 6.3 percent in office furniture, while the all manufacturing rate over the same time period was 7.5 percent. Productivity growth over this period was also lower in the office furniture industry than in all manufacturing. From 1975 to 1980, however, capital expenditures per employee accelerated to 29.6 percent per year, compared with a rate of 11.1 percent for all manufacturing. Productivity from 1975 to 1980 increased sharply also, growing at a rate of 5.1 percent. The level of expenditures per employee, however, has been substantially less than all manufacturing. In 1980, the office furniture industry expended roughly $2,900 per employee for new capital equipment while the all manufacturing average was almost $3,700.

Manufacturing innovations limited

Typically, production in the office furniture industry takes place at mechanized work stations with workpiece transfer accomplished by conveyor line, forklift truck, or handcart. The wood furniture industry employs general purpose woodworking machinery such as saws, planers, glue presses, and sanders. Basic operations in the metal furniture industry include metal cutting, stamping, welding, and tubeforming. With minor differences, both industries have common operations such as painting and upholstering. Obviously, many of the processes used for manufacturing wood furniture bear little resemblance to those used for metal furniture. However, even within the component industries, variations in equipment and processes are evident. This is particularly true of wood furniture. Some of the finer grades are produced almost entirely by hand, while the less expensive grades are produced in assembly line fashion.

Product proliferation is a problem within the office furniture industry, and this has hindered the introduction of special purpose and highly efficient machinery and equipment. While the household furniture industry finds it relatively easy to drop product lines and styles, office furniture companies must maintain the capacity to produce old as well as new product lines. This problem is particularly acute in the more expensive wood office furniture lines. Reorders of wood furniture must match style as well as wood grain pattern and color (which may not be the same as when the pieces were new).

Therefore, the potential number of product types, styles, and colors, coupled with the bulkiness of furniture, discourage factories from accumulating large inventories of finished goods. Most office furniture, perhaps as much as 90 percent, is for order rather than inventory. Office furniture dealers do not stock large inventories either; rather, an accumulation of customer orders is periodically sent to the factory. This results in short production runs of individual items.

This diminished ability to control production runs may be one of the reasons productivity growth in the office furniture industry has been less than that of the household furniture industry.[5] The office furniture industry must remain even more flexible in terms of production capabilities than household furniture manufacturers, many of whom are also troubled by short, inefficient production runs and difficulty in incorporating highly specialized and efficient equipment. Nevertheless, some notable advances in the technology of manufacturing office furniture have been introduced.

In the wood office furniture industry, one of the most pronounced trends in innovation has been increased use of particleboard. While the primary impetus for the expanded usage of particleboard has been its lower cost in relation to the cost of solid lumber, the industry has focused considerable attention on new technologies to handle the material. A wide variety of surface laminates and films and application techniques have eliminated several time-consuming production and assembly operations. Groove-folding, a technique whereby V-shaped grooves are cut in the particleboard substrate, but not through the flexible surface material, produces seamless furniture edges which are held in place by the continuous outer wrap.[6]

Although somewhat hampered by increased petrochemical prices in recent years, the use of plastic materials has simplified construction and added strength to furniture components, and can also produce mar-resistant surfaces. Reconstituted wood veneer, another advance in materials, has uniform thickness, grain, and quality and can be evenly stained. Its use eliminates the need for the labor intensive procedure of manually grading, selecting, and removing defects from natural veneers.

In addition to new materials, notable advances have occurred in woodworking machinery. Abrasive planing, introduced in the early 1960's, combines heavy stock removal with direct dimensioning at the sanding machine.[7] Machines which glue and trim veneer strips to the edges of particleboard can eliminate the complicated set of clamps and pressure bands which formerly had to be locked in place until the glue dried.

In the metal office furniture industry, machines have recently been installed that automatically position and cut shapes into the large flat metal blanks that later will be fashioned into desks, file cabinets, and so forth. This equipment is more efficient because it does not require moving the workpiece to a separate machine for each cut. Also, setup time is considerably reduced.

Savings in the time needed to produce tubular shapes have been accomplished by new tubeforming and cutting equipment. Tubemaking, which starts from flat coiled steel, has been speeded up by the use of automatic welders which join the ends of the coils so that the tubeforming equipment need not be shut down while coils are being changed.

Metallic inert gas (MIG) welding has largely supplanted most other forms of welding. Its advantage is that the parts being joined do not have to be as thoroughly cleaned as with brazing. Although robot welders are not common, automatic welding is. Once travel and angle of the welding arm have been adjusted, a worker is required only to load and unload workpieces onto and from the equipment.

Although not designed specifically for the metal office furniture industry, automated parts inventory storage and retrieval systems are being used by several plants in the industry. Operating under the control of a computer which "explodes" or breaks down orders for the required number of finished pieces of furniture into the necessary parts demand, robot crawlers and unmanned forklift trucks retrieve and deliver the parts to various pickup stations where they are transferred to the assembly line in the correct sequence for manufacture.

Upholstering, an operation which is similar in both wood and metal office furniture, is a particularly labor intensive operation and requires a skilled work force. Although still used in many plants, manual pattern layout and fabric cutting have in some cases been phased out, superseded by diecutting of fabric. Computer-controlled cutting equipment, which combines high speed with accuracy and eliminates manual pattern layout, is also available.[8] Steam tables, installed at upholsterers' work stations, expand the cut fabric workpiece. Once removed from the steam and stapled around the foam rubber cushion, the fabric shrinks back to its normal size and becomes taut. Airpowered plunger tables, used to compress the fabric-covered foam shape, have made button insertion and tiedown operations easier.

Electrostatic finishing, used widely by the metal furniture industry, can be used successfully on wooden furniture,[9] resulting in increased labor productivity in the finishing area and a substantial reduction in material and maintenance costs. Automatic electrostatic spray lines allow closer spacing of pieces to be painted and, thus, greater efficiency. With these automatic lines, color changeover is automatic and can be done in 30 seconds rather than the 2 minutes previously required on the nonautomatic electrostatic lines. Electrodeposition lines, which are powdered coatings in a medium of either air or water, are particularly efficient with respect to labor, materials, and solvent emissions.

Likewise, both the metal and wood office furniture industries have shared the advances made in portable, handheld power fastening tools, resulting in added worker efficiency through more power, greater capacity, and less weight and maintenance. Productivity has also been enhanced by improved workflow layout, computerized recordkeeping, and new materials such as quick-setting glues and improved finishes.

Recent trends may continue

If continued, the industry's capital spending surge of the last few years may provide the plant and equipment necessary to maintain the recent above average growth in productivity. However, the current economic downturn may have a negative effect on demand and productivity.

Although the full consequences of the current economic downturn cannot be foreseen, it is worth noting that previous recessions have had only limited effects on the growth of the white-collar work force, one of the key factors in the output growth of the office furniture industry. In fact, even though there have been four recessions since 1958, the total white-collar work force has never declined. With the forecasted continued expansion in the white-collar work force,[10] demand for the industry's products should continue to increase and may, therefore, present the industry with opportunities to expand productivity. Also, the industry's output should be further bolstered if the growth of systems furniture continues.

While the "paperless office" is not as yet a reality,[11] over the long term, the increasing sophistication of electronic office equipment may result in officeworkers becoming more productive. This, in turn, can influence output of the office furniture industry by dampening growth in the white-collar work force and affecting demand and productivity in the office furniture industry. ☐

APPENDIX: Measurement techniques and limitations

Indexes of output per employee hour measure changes in the relation between the output of an industry and employee hours expended on that output. An index of output per employee hour is derived by dividing an index of output by an index of industry employee hours.

The preferred output index for manufacturing industries would be obtained from data on quantities of the various goods produced by the industry, each weighted (multiplied) by the employee hours required to produce one unit of each good in some specified base period. Thus, those goods which require more labor for production are given more importance in the index.

Because data on physical quantities are not reported for the entire office furniture industry, real output was estimated by a deflated value technique. Changes in price levels were removed from current-dollar values of production by means of appropriate price indexes at various levels of subaggregation for the variety of products in the group. To combine segments of the output index into a total output measure, employee hour weights relating to the individual segments were used, resulting in a final output index that is conceptually close to the preferred output measure.

The indexes of output per employee hour relate total output to one input—labor. The indexes do not measure the specific contribution of labor, capital, or any other single factor. Rather, they reflect the joint effects of factors such as changes in technology, capital investment, capacity utilization, plant design and layout, skill and efforts of the work force, managerial ability, and labor-management relations.

The average annual rates of change presented in the text are based on the linear least squares trend of the logarithms of the index numbers. Extensions of the indexes appear annually in the BLS bulletin, *Productivity in Selected Industries.* A technical note describing the methods used to develop the indexes is available from the Division of Industry Productivity Studies.

——*FOOTNOTES*——

[1] The office furniture industry is classified as SIC 252 in the 1972 *Standard Industrial Classification Manual* and its 1977 supplement, issued by the U.S. Office of Management and Budget. The subindustries within the office furniture group include establishments that are primarily engaged in manufacturing furniture commonly used in offices—wood (SIC 2521) and metal (SIC 2522).

[2] *Employment and Training Report of the President,* 1981 Report (The White House, 1981), pp. 148–49; see also table 3, p. 73, of the April 1982 issue of the *Monthly Labor Review.*

[3] See P. W. Daniels, ed., *Spatial Patterns of Office Growth and Location* (New York, John Wiley & Sons, Inc., 1979), pp. 67–69.

[4] "Equipment Purchases Planned by Readers in 1980," *The Office,* January 1980, p. 26.

[5] See J. Edwin Henneberger, "Productivity Growth Below Average in the Household Furniture Industry," *Monthly Labor Review,* November 1978, pp. 23–29.

[6] Darrell Ward, "Groove Folding for Contract and Contemporary," *Woodworking and Furniture Digest,* June 1981, pp. 42–45.

[7] ——, "Abrasive Planing Challenges Your Knife Cutting Techniques," *Hitchcock's Wood Working Digest,* November 1963, pp. 29–32.

[8] Robert Michael, "New Techniques of Computerized Fabric Cutting," *Furniture Methods and Materials,* June 1971, pp. 12–15.

[9] Richard D. Rea, "Electrostatic Disks Win," *Woodworking and Furniture Digest,* April 1982, pp. 22–25.

[10] *Economic Projections to 1990,* Bulletin 2121 (Bureau of Labor Statistics, 1982), pp. 34–47.

[11] See Paul Lieber, "Office Automation: The Job Threat that Never Happened," *The Office,* May 1980, p. 158.

Productivity in the pump and compressor industry

During 1958–80, the industry experienced long-term advances, reflecting improvements in metalworking machinery and computer aid; but since 1965, productivity has decelerated, being especially slow from 1973 forward

HORST BRAND AND CLYDE HUFFSTUTLER

Output per employee hour in pump and compressor manufacturing rose at an average annual rate of 2.1 percent between 1958 and 1980—compared with a rate of 2.6 percent for manufacturing as a whole.[1] Output increased 4.7 percent a year, employee hours 2.6 percent. Among the sources of the industry's long-term productivity advance were improvements in metalworking machinery, which lies at the core of the production processes for pumps and compressors, and computer technologies, which were increasingly applied to engineering design.

The labor productivity trend for the industry was marked by strong advances during the early part of the period (from 1958 to 1965), followed by deceleration during 1965–73, and a further slowing thereafter. As the tabulation shows, using average annual rates of change in percent, the trend pattern paralleled manufacturing:

	Pumps and compressors	*Manufacturing*
1958–80	2.1	2.6
1958–65	3.4	2.7
1965–73	2.1	2.4
1973–80	1.0	1.8

By 1980, the level of labor productivity in the industry had risen 55 percent from 1958, as against 78 percent for all manufacturing.

The long-term productivity trend, in addition to evidencing divergent medium-term movements, was punctuated by sharp year-to-year swings. These swings were generally related to the business cycle, although they show no uniform pattern. Thus, labor productivity fell steeply in 1960 (3.2 percent), 1975 (5.6 percent), and 1980 (2.6 percent). In these years, output either grew more slowly than employee hours (1960), or fell more rapidly (1975), or fell while hours rose (1980). Yet, in 1961, 1967, and 1971, years when the economy slowed, significant increases in productivity occurred (3.9 percent, 1.7 percent, and 1.5 percent)—which, however, stemmed from drops in employee hours exceeding drops in output.

Years of recovery or boom in which productivity soared to more than twice its long-term rate, displayed a more uniform pattern of change in output and employee hours. In 1959 and 1976, gains in productivity were linked with large output increases but slight employee hour declines.

Separate data for pumps and pumping equipment, and for air and gas compressors, are available only from 1972 forward. Average annual rates of change in labor productivity for the two separate industries compare as follows for the 1972–80 span:

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	Percent
Pumps and compressors	1.2
Pumps and pumping equipment	1.2
Air and gas compressors	1.1
All manufacturing	1.9

Reflecting contrasting trends in output and employee hours, labor productivity movements in the pump and pumping equipment segment were considerably less volatile than in compressor manufacturing. The former attained a productivity level in 1979 that exceeded 1973 by 7 percent (both years registered cyclical peaks); the latter failed to reattain its 1973 high.

Output increases

Pumps and compressors are used throughout manufacturing and many nonmanufacturing industries, as well as agriculture. Pumps are the second most common machine in use after the electric motor.[2] Compressors generate compressed air, which may be regarded as a form of energy ranking in breadth of use only below electricity, gas, and water, in addition to being indispensable in the transportation of gas.[3]

Between 1958 and 1980, output of pumps and compressors rose 175 percent, or at an average annual rate of 4.7 percent. Manufacturing output grew at a rate of 3.8 percent over the period. Like the long-term trend in the industry's labor productivity, the long-term trend in output rose less after 1965 than earlier, as the following tabulation indicates by showing average annual rates of change in percent:

	Pumps and compressors	Manufacturing
1958–80	4.7	3.8
1958–65	6.5	5.9
1965–73	2.5	3.0
1973–80	4.2	2.5

Output of pumps and compressors reached a peak index level of 115 (1977=100) in 1979, from which it receded slightly in 1980. The dip was caused by a decline in compressor manufacturing, which had climbed 51 percent between 1973 and 1979. Pump and pumping equipment output had risen 22 percent between those 2 years of cyclical highs.

Of the total output of pumps and compressors, the former accounted for about two-thirds, according to the *1977 Census of Manufactures*, the latter for the remaining one-third. Industrial pumps represented more than half of the output of pumps and pumping equipment (other than accessories). Hydraulic fluid power pumps, oil well and oilfield pumps, and other pumps and equipment installed in appliances, fire engines, and structures, made up the remaining output. Parts and attachments constituted close to one-quarter of pump manufacturing output in 1977. Given the often difficult climatic and environmental conditions in which pumps must operate, and the abrasiveness of fluids often transferred by them, speedy replacement of worn and damaged parts constitutes a vital function of the manufacturer, and is the reason for the high proportion of shipments of parts and attachments.

Air compressors accounted for well over one-quarter of the shipments of compressor manufacturers, according to the 1977 census, gas compressors for just under one-tenth. They consisted preponderantly of the stationary type. Portable compressors, which are relatively small machines, made up one-fifth of total air and gas compressor shipments. Industrial spraying equipment also added one-fifth to compressor manufacturers' shipments. Compressors, like pumps, are frequently exposed to rough operating and environmental conditions, hence a comparatively high proportion of shipments (20 percent) represented parts and attachments in 1977.

Factors underlying output growth

In general, growth in the output of pumps and compressors was related to expansion in industrial and public utility demand, particularly during the boom years of the early and mid-1960's; gains in residential and associated public works construction, such as sewage and waterworks, during the 1960's and 1970's; and intensified needs of energy-related extractive and pipeline industries, especially during the 1970's. Foreign trade, too, played an important role in sustaining output: about one-fifth of pump and compressor production was exported between 1972 and 1978.

Expansion in the productive activities of a wide array of users lay at the base of output growth of pumps and compressors. No precise statistical link can be established between the former and the latter. However, movements in the plant and equipment expenditures, adjusted for price changes, by major pump and compressor users are indicative, as are put-in-place data for construction.

Among large-scale users of pumps and compressors was the chemical industry, which accounts for about one-tenth of total pump and compressor output.[4] Chemicals nearly doubled plant and equipment outlays (adjusted for price changes) in the early 1960's, then reduced them. After 1973, however, outlays were once again raised, so that in 1979 they stood nearly twice above the 1973 level. The industry has increasingly used pumps made of fiberglas, plastics, and stainless steel to transfer salt solutions, acid, and chlorine.[5]

Steel mills and blast furnaces, whose capital spending patterns compared roughly with that of the chemical industry over the review period, purchase about 7 percent of pump and compressor output. They use a variety of industrial and hydraulic pumps as well as compressors to move sources of energy such as liquid fuels, as well as water to absorb waste energy. Installation of multistage pumps to achieve higher pressure has, in part, been prompted by the shift from open-hearth to basic-oxygen and electric-arc steelmaking processes. The partial replacement of slabbing mills by continuous casting has required more water, hence a larger number of and more powerful centrifugal pumps.[6]

More than 18 percent of pumps and compressors are bought by energy-related extracting, processing, and distributing industries. Thus, growth in extractive activities spurred the demand for industrial as well as oil well and oilfield pumps. Between 1960 and 1970, the number of crude oil and gas wells drilled dropped sharply (by nearly two-fifths), as did footage drilled (by 27 percent). After 1970, the decline was reversed; in 1978, the two indicators ran 72 percent and 68 percent above 1971 levels. Concomitantly, output of oil well and oilfield pumps, which had risen at an average annual rate of less than 4 percent between 1958 and 1973, soared to a rate of more than 10 percent between 1973 and 1980. Oil extraction also requires reciprocal pumps for mud circulation; submersible centrifugal units to lift the crude oil; and centrifugal pumps for waterflooding (to prevent subsidence and maintain pressure).[7]

Compressors are required in oil drilling and oilfield maintenance operations, and particularly in secondary recovery efforts. The continued expansion of natural gas pipelines (whose mileage increased 9 percent between 1973 and 1978) spelled the installation of additional large compressors for gas transmission; and increases in new wells—more than twofold between 1973 and 1978—required numerous smaller compressors for gas gathering, as did the prohibition of flaring of waste gas (which now must be stored in tanks). Also, steep increases in capital expenditures of the coal mining industry—162 percent between 1958 and 1972 (after adjustment for price changes), and 169 percent between 1973 and 1977—indicate expansion in this industry's demand for compressors.

Expansion of petroleum pipeline capacity also raised the demand for pumps, particularly of the high-horsepower centrifugal kind, and for stationary compressors. While the network of petroleum pipelines operated by petroleum pipeline companies increased 16 percent between 1960 and 1970, and contracted somewhat thereafter, total oil transported rose 81 percent during the 1960's, and 48 percent in the 1970's.[8] At the same time, the average diameter of pipes was enlarged by one-third, roughly doubling capacity.[9] This required significant increases in the size and capacity of pumping equipment and compressors.

Expanding electrical generating capacity spurred the output growth especially of centrifugal pumps. These are used as boiler-feed pumps, as well as in many other operations requiring the circulation and condensation of steam and water. While the total number of electrical generating stations did not advance very much over the review period, the proportion of stations generating 500,000 kilowatts or more rose from under 3 percent in 1960 to 12 percent in 1979. Nuclear and gas-turbine driven, power-generating plants likewise increased. The rise in the number of larger electric generating plants spelled a shift to larger, more powerful pumps.[10]

Table 1. Productivity and related indexes for pump and compressor manufacturing, 1958–80

[1977 = 100]

Year	Output per employee hour	Output	Employee hours	Employees
1958	64.5	41.1	63.7	63.1
1959	68.8	43.4	63.1	62.6
1960	66.6	44.6	67.0	66.1
1961	69.2	43.9	63.4	62.6
1962	73.6	48.6	66.0	64.9
1963	78.1	51.7	66.2	64.6
1964	79.4	59.0	74.3	71.5
1965	80.9	65.2	80.6	77.9
1966	81.1	70.5	86.9	82.9
1967	82.5	70.1	85.0	82.4
1968	82.3	68.3	83.0	80.3
1969	86.3	74.0	85.7	83.3
1970	85.8	74.8	87.2	85.8
1971	87.1	69.4	79.7	79.4
1972	91.1	76.2	83.6	82.5
1973	97.8	87.7	89.7	88.6
1974	96.7	94.0	97.2	97.3
1975	91.3	87.0	95.3	96.0
1976	96.8	91.4	94.4	94.3
1977	100.0	100.0	100.0	100.0
1978	102.6	107.1	104.4	105.1
1979	102.5	114.5	111.7	112.7
1980	99.8	112.9	113.1	113.9
Average annual rates of change (in percent):				
1958–80	2.1	4.7	2.6	2.7
1975–80	1.9	6.0	4.1	4.2

Construction accounts for another 18 percent of pump and compressor output. Centrifugal and trash pumps (which accommodate up to 25 percent of small solids in the water being pumped) are used in the clearing and preparing of construction sites.[11] Portable compressors are indispensable in the many pneumatical operations at construction sites. Between 1960 and 1973, the volume of total construction put in place rose at an average annual rate of 2.9 percent; thereafter it declined at a rate of 1.5 percent. However, some construction sectors with high demand for pumps continued to expand—for example, sewage system construction (spurred by more stringent environmental regulations).

Employment and hours

Employment in the pump and compressor manufacturing industry currently numbers approximately 91,000 persons. It rose 81 percent between 1958 and 1980, or at an average annual rate of 2.7 percent (compared with 1.1 percent for all manufacturing).

The long-term trend in employee hours in the industry did not differ significantly from the long-term trend in employment. They rose at a rate of 2.6 percent a year over the period, compared with 1.1 percent for manufacturing as a whole.

Production worker employment rose somewhat faster over the 1958–80 period than production workers' hours (2.7 percent a year versus 2.4 percent). Year-to-year changes ranged from an increase of 12 percent in 1974 to a decline of 10 percent for production worker employment; the range was wider still for hours. Overtime exceeded the manufacturing durables average in 17 of the 22 years examined here.[12] Comparatively high overtime hours were probably related to hiring and separation policies which, judging by the pertinent labor turnover data, have been such as to ensure retention of a relatively skilled work force. Labor turnover in the industry ran less than three-fifths of the manufacturing average for the period.[13] High overtime and low turnover rates were probably also related to the skill composition of the industry's work force.

Data on the skill composition of employees in pump and compressor manufacturing are not directly available. Such data have been compiled by the BLS only for the general industrial machinery group (SIC 356), of which pumps and compressors represent 29 percent by employment. Craft and related workers accounted for 30 percent of the production workers employed by establishments in this group in 1980, compared with 26 percent for total manufacturing. Metalworking craftworkers represented 12 percent of all production workers in the group, compared with 5 percent for manufacturing; and machinists 3 percent, compared with 1 percent. Operatives accounted for slightly more than three-fifths of all production workers in the general industrial machinery group, the same as in manufacturing as a whole. But metalworking operatives in industrial machinery, constituting one-third of production workers, had three times the share of their counterparts in all manufacturing. Laborers, with 6 percent of production workers in the group, had little more than half their share for all manufacturing.

Wage differentials also suggest a somewhat higher skill composition for production workers in pump and compressor establishments than in all manufacturing. In 1980, hourly earnings of the former ran 10 percent above the manufacturing average, and 3 percent above the manufacturing durables average. These ratios remained substantially unchanged during 1958–80. (Hourly earnings were about the same for production workers in the industry and in the general industrial machinery group of which the industry is part.)

Employment of nonproduction workers by pump and compressor manufacturing establishments rose at a slightly faster rate than that of production workers—2.9 percent a year (versus 2.7 percent). Nonproduction workers account for a comparatively high proportion of the industry's employment—41 percent in 1980, as against 30 percent for all manufacturing. The proportion did not change significantly over the review period. One of the reasons for the high proportion of nonproduction workers resides in the larger share accounted for by mechanical engineers in the industry groups' occupational makeup (the data are, again, for the general industrial machinery group). Such engineers represented 6 percent of all white-collar workers in the group in 1980—three times the comparable manufacturing ratio. Engineering and science technicians, among them drafters, made up 11 percent of white-collar workers in the group, as against 8 percent for manufacturing. The group also employed a somewhat higher proportion of clerical and secretarial workers (42 versus 40 percent). The share of blue-collar nonproduction workers, such as truckdrivers and service employees, was generally lower than for manufacturing.

Technological changes

Small lot production is the rule in pump and compressor establishments. Pumps and compressors are often large machines, manufactured to customer specification. While many of these machines are composed of standard parts, the economies associated with mass production are generally not available in producing pumps and compressors. The production process must constantly be adapted so as to cope with the many design, casting, and machining requirements that arise. Such adaptation was facilitated by the advent of numerically controlled machine tools in the 1960's, and the introduction of computer-aided design into engineering practice.[14] Numerical controls and computer-aided design have been important sources of labor productivity advances in the industry. The impact of these technological changes will be outlined, following a brief survey of the kinds and age of the metalworking machinery used in manufacturing pumps and compressors.

According to the *12th American Machinist Inventory of Metalworking Equipment* for 1976–78 (latest available), about one-third of all metal cutting and metal forming machine tools in the pump and compressor manufacturing industry were less than 10 years old; 70 percent were less than 20 years old. Comparable data for earlier years are available only for the general industrial machinery group (SIC 356). For general industrial machinery, no distinct trend in the age composition of metalworking machinery is observable. Thus, in 1958, 34 percent of such machinery installed in the plants of this group was less than 10 years old, 74 percent was less than 20 years. In 1968, as well as in 1978, the comparable figures read 33 and 72 percent.[15]

Despite the absence of a trend toward a more modern stock of metalworking equipment in terms of age, output capability per machine tool unit improved considerably. According to the *American Machinist's 10th Inventory of Metalworking Equipment* (1968), "For the last 5 years, the number of machine tools has increased by 4.5 percent, while the value of production, as measured in constant dollars by the *American Machinist* production index, has gone up by 39 percent." In the text accompanying its 12th Inventory (1976–78), the *American Machinist* again confirmed this trend. It noted that while the total machine tool "population" had declined by about one-tenth between 1968 and 1978, the production index had risen 40 percent.[16]

Machining time cut

The increase in the output capacity of machine tools has undoubtedly contributed to gains in the labor productivity of pump and compressor manufacturing. For example, machining time for pump casings, which often are of great weight and size, has in the leading plants been drastically reduced by specially designed milling machines. These milling machines also require less setup time, and a smaller number of setups than formerly. In one case, machining time for large centrifugal pump casings, weighing up to 18,000 pounds, was reduced from 48 to 17 employee hours; in other words, where three 16-hour shifts, involving two operators, were required earlier, only one operator working 17 hours is needed now.[17] However, electric energy requirements are considerably greater.[18]

Reductions in machining time are frequently achieved by combining in one large metalworking operation several previously separate ones. An example is the simultaneous milling, radial drilling, and facing (smoothing) of different parts of the same workpiece. Sequential operations on a given workpiece are speeded up by means of automatic tool changers, commanded by taped instructions, causing different kinds of tools (or different configurations of the same kind of tool) to be advanced, retracted, and changed, as programmed. (Such apparatus may be bypassed by manual controls, when necessary in the operator's judgment.)[19]

Reductions in setup time have also been made possible for many single-purpose machines, for example, grinders. Pump shafts must in some cases be tapered, and this has usually required several setups depending upon the length and desired fit of the shaft. In some of the industry's plants, separate setups for this purpose have been eliminated by grinders that adapt automatically and will grind several fits simultaneously.[20]

Advances in the foundry operations of pump and compressor manufacturers have also contributed to labor productivity gains. In the technically more advanced plants, molding and coremaking have been speeded up by rapid-cycle machinery, and by discarding the time-consuming sand baking process. The no-bake process uses a resin binder and a catalyst to produce the sand mold, saving energy as well as unit labor requirements.[21] Several of the same core patterns (from which pump casings and other pump and compressor parts are cast) can be cut simultaneously by means of synchronous fabricating machinery, operating on the principle of key-making apparatus.

Table 2. Productivity and related indexes for pumps and pumping equipment manufacturing, 1972–80

[1977 = 100]

Year	Output per employee hour	Output	Employee hours	Employees
1972	90.8	81.0	89.2	88.1
1973	94.1	91.7	97.4	94.8
1974	93.6	91.9	98.2	98.3
1975	89.9	90.4	100.6	101.4
1976	92.7	92.9	100.2	99.7
1977	100.0	100.0	100.0	100.0
1978	101.1	106.1	104.9	106.2
1979	100.7	111.6	110.8	113.0
1980	97.2	112.5	115.8	117.6
Average annual rates of change (in percent):				
1972–80	1.2	3.9	2.6	3.1

Engineering plays a key role in pump and compressor manufacturing. As noted, much of the industry's output is manufactured to customer specifications, which of necessity involves engineering staff. Additionally, the advent of numerically controlled machine tools, and of computer numerical controls, has centered more production responsibilities in engineering departments, away from the shop floor. The growth of engineering staff has intensified concern with promoting its efficiency. Engineering efficiency has been raised in the more advanced establishments of the industry by applying certain computer technologies; designing production processes which economize on engineering time; and standardizing common parts. Efforts have also been made to bypass engineering where feasible.[22]

Computer graphics have simplified drafting by allowing corrections to be made to the draft without manually redrawing it. Detailed drawings can be made within minutes, where before it took hours. Computerized data banks permit access to all drawings on file. Computer graphics has permitted the elimination of 7 to 8 drafter jobs in one of the establishments visited by BLS staff. The computer-aided design can be programmed directly upon tape, and fed to the machine tool. This represents a considerable advance for numerical controls, inasmuch as programs previously had to be punched, or prepunched programs had to be purchased.

With design and production closely linked, owing to the computer and numerical controls, engineers conceive of computer-aided design and computer-assisted manufacturing as integral operations. Calculation of formulae, design of the product, and production are viewed and operated as a single process. Uniformity of product dimension and quality are ensured. Changes in the detail of design are quickly and inexpensively incorporated. Engineering time saved by computer-aided design and computer-assisted manufacturing has been estimated at two-thirds of conventional engineering procedures.[23]

As noted, replacement of parts and attachments accounts for a sizable proportion of the output of pump and compressor manufacturing. Computer-aided design and computer-assisted manufacturing helps ensure that replacement parts are dimensionally accurate, while economizing on engineering time. Dimensional conformance is further ensured by certain process innovations. Thus, cores or molds for impellers and other pump and compressor components are now frequently ceramic instead of wood.

Capital expenditures

Plant and equipment outlays by pump and compressor manufacturers rose at an average annual rate of 8.1 percent between 1958 and 1980—compared with 4.9 percent per year for all manufacturing. (The expenditure data underlying these rates have been adjusted for price changes.[24]) The industry's capital spending rose at a particularly high rate during the 1960's, nearly tripling between 1958 and 1969. For a few years thereafter, such spending receded from the 1969 level, but it resumed its rise in 1972, and doubled between 1972 and 1980. Comparable figures for all manufacturing are considerably more modest, as the tabulation shows (average annual rates in percent):

	Pumps and compressors	*Manufacturing*
1958–80	8.1	4.9
1958–69	12.2	8.2
1969–80	6.9	4.6
1969–72 . .	-10.2	-3.0
1972–80 . .	7.6	5.4

Structure of the industry

In 1977, pumps and pumping equipment were manufactured in 613 establishments, air and gas compressors in 175. The former had increased 10 percent since 1972, the latter had more than doubled. In the preceding 9 years, no change in the number of establishments making pumps and compressors had occurred. The number of *companies* in the industry owning these establishments barely changed during the 1970's.[25]

Pumps and compressors are manufactured mostly in larger plants. Five percent of all establishments in the industry employed 45 percent of its workers in 1977, and accounted for about the same proportion of the total value of shipments. More generally, establishments with 100 workers or more represented less than one-quarter of the total number of establishments in the industry but well over four-fifths of total employment and value of shipments.

Table 3. Productivity and related indexes for air and gas compressor manufacturing, 1972–80

[1977 = 100]

Year	Output per employee hour	Output	Employee hours	Employees
1972	92.1	66.7	72.4	71.6
1973	106.8	79.8	74.7	76.6
1974	103.0	98.2	95.3	95.3
1975	96.7	80.5	85.0	85.3
1976	106.4	88.4	83.1	83.8
1977	100.0	100.0	100.0	100.0
1978	105.5	109.1	103.4	102.8
1979	106.0	120.3	113.5	112.2
1980	105.7	113.7	107.8	106.6
Average annual rates of change (in percent):				
1972–80	1.1	6.5	5.4	5.2

Concentration was high. The industry's four largest companies employed more than half of its workers in 1977, and accounted for half of its value of shipments. For manufacturing as a whole, the comparable ratios were 6 and 7 percent.

Even so, the establishments are mostly small, employing fewer than 100 persons. The smaller plants accounted for 79 percent (pumps) and 70 percent (compressors) of all industry establishments in 1977. At the same time, however, they recorded only 14 and 9 percent of total industry employment. These relationships had not changed much from earlier phases of the review period.

Outlook

Continued advances in the labor productivity of pump and compressor manufacturing are likely over the longer term. The diffusion of numerically controlled machine tools and computer-aided design within the industry's establishments, as well as among them, has still some way to go. The age distribution of metalworking machinery should continue to favor higher-capacity, modernized equipment. Organizational changes resulting from a widening scope of computer applications—for example, more centralized decisionmaking in reference to machining processes—will probably also improve productivity.[26]

So far, robots appear not to have been introduced widely. Even in the more advanced shops, they are used chiefly for paint spraying and other marginal operations. Industry observers, however, expect that robots, as their costs decline, will handle workpieces more and more during the noncutting portion of the work cycle.[27] Such a development is also bound to raise labor productivity.

The nearer-term outlook is somewhat clouded, however. The industry's output is likely to suffer from weakened demand from major users of pumps and compressors. When output slackens, a slowed rate of productivity advance, even declines in the rate, are more probable. A source of weakened demand is the stagnation in housing starts, which tends to diminish the need for pumps and compressors used in construction, as well as for such public works as water and sewage, which often require pumps and related equipment on a large scale. Another source of declining needs for (hence output of) pumps and compressors are reductions in projected increases in oilfield exploration and development. (These reductions have been linked to smaller-than-expected energy demand increases, and lessened price pressures.)[28]

At the same time, the widespread concern with cutting energy costs may bolster the demand (and output) of more energy-efficient pumps and compressors. For example, variable displacement pumps may to some extent replace fixed displacement pumps. The latter rejects excess flows by means of a relief valve, dumping them back into a reservoir. This wastes pump energy, which a variable displacement pump can avert.[29] Piston pumps, furthermore, are thought by industry observers to be also favored over fixed displacement pumps, as high-pressure hydraulics is more widely adopted in industry and transportation (especially in aircraft and mobile equipment). High-pressure hydraulics permits the use of lighter pipes, pumps, and actuators.[30]

Industry observers believe that pumps and equipment of larger size will continue to be installed in such uses as steampower generation, pipelines, and petroleum refining. The shift from gasoline to heavy fuel refining[31] requires heavier rotary rather than lighter centrifugal pumps. Slurry pipelines—which move water-suspended solids such as coal and wood chips—are believed to gain wider acceptance, because they offer important economies in transportation.

The BLS has projected a somewhat faster rise in the number of nonproduction workers than production workers for the general industrial machinery group.[32] In 1990, professional and technical workers will make up 12.4 percent of all of the group's employees, according to the projections, compared with 11.4 percent in 1980; and the share of clerical and related workers will rise slightly. The proportion of craftworkers will remain unchanged, and that of operatives will edge downward. It seems reasonable to assume that changes in occupational pattern projected for the general industrial machinery group will, by and large, be repeated by pump and compressor manufacturing. ☐

FOOTNOTES

[1] The pump and compressor manufacturing industry consists of two segments, pumps and pumping equipment, designated as SIC 3561 of the *Standard Industrial Classification Manual 1972* of the Office of Management and Budget; and air and gas compressors, SIC 3563. SIC 3561 consists of establishments primarily engaged in manufacturing pumps and pumping equipment for general industrial use. Measuring and dispensing pumps for gasoline stations are not included, nor are pumps installed in automobiles. SIC 3563 consists of establishments primarily engaged in manufacturing air and gas compressors for general industrial use. Refrigeration compressor units are not included. Prior to 1972, pumps and compressors were classified together in SIC 3561.

Average annual rates of change are based on the linear least squares of the logarithm of the index numbers. Extensions of the indexes will appear in the annual BLS Bulletin, *Productivity Measures for Selected Industries.*

[2] William C. Krutzsch, "Introduction and Classification of Pumps," in Igor J. Karassik and others, *Pump Handbook* (New York, McGraw-Hill, 1973), p. 1 ff.

[3] John P. Rollins, ed., *Compressed Air and Gas Handbook* (New York, Compressed Air and Gas Institute, 1973), p. 1. The range of compressed air uses are discussed on pp. 1–44.

[4] U. S. Department of Commerce, Bureau of Economic Analysis, *The Detailed Input-Output Structure of the U. S. Economy: 1972* (Washington, D.C., Government Printing Office, 1979).

[5] John R. Birk and James H. Peacock, "Chemical Industry," *Pump Handbook*, p. 10–74 ff. Also, conversation with industry observer.

[6] E. R. Pritchett, "Steel Mills," *Pump Handbook*, p. 10–159; and telephone conversation with author.

[7] Elvitsky, *Pump Handbook.*

[8] U. S. Department of Labor, Bureau of Labor Statistics, *Productivity Measures for Selected Industries, 1954–80* (Washington, D.C., Government Printing Office, 1982), table 179.

[9] Mary Vickery, "Petroleum Pipeline Transportation," U.S. Department of Labor, Bureau of Labor Statistics, *Technological Change and its Labor Impact in Five Energy Industries*, BLS Bulletin 2005 (Washington, D.C., Government Printing Office, 1979), pp. 39 and 42.

[10] Telephone conversation with Krutzsch, an author of *Pump Handbook.*

[11] Benjes, H.H., "Sewage," *Pump Handbook*, p. 10–2. Also, telephone conversation with author.

[12] Overtime in pump and compressor manufacturing compared with overtime for all of manufacturing durables (all manufacturing = 100) as follows:

	Pumps and compressors
1958	63
1959	111
1960	104
1961	83
1962	96
1963	90
1964	103
1965	113
1966	123
1967	114
1968	103
1969	103
1970	110
1971	93
1972	103
1973	105

	Pumps	*Compressors*
1974	126	112
1975	119	115
1976	131	103
1977	114	116
1978	100	113
1979	103	114
1980	100	161

[13] Labor turnover in pump and compressor manufacturing compared with manufacturing (all manufacturing = 100) as follows (data from 1972 forward for pumps and pumping equipment only; data for air and gas compressors are not available):

	Accessions	*Separations*
1958	52	66
1959	69	56
1960	55	65
1961	54	58
1962	56	51
1963	56	56
1964	63	46
1965	60	58
1966	68	63
1967	57	59
1968	57	57
1969	68	65
1970	60	76
1971	54	56
1972	60	49
1973	67	55
1974	71	67
1975	51	68
1976	59	53
1977	63	55
1978	51	49
1979	53	54
1980	54	58

[14] See Comptroller General of the United States, *Manufacturing Technology—A Changing Challenge to Improved Productivity*, Report to the Congress, Washington, June 3, 1976, especially p. 37 ff.

[15] *The Eighth American Machinist Inventory of Metalworking Equipment—1958*, New York, McGraw-Hill. Reprinted from the *American Machinist*, Nov. 17, 1958; *The Tenth American Machinist Inventory of Metalworking Equipment—1968*, New York, McGraw-Hill, 1968. The data cited for pump and compressor manufacturing from the 12th *Inventory* are based on unpublished printouts.

[16] *American Machinist*, December 1978, p. 135. The reduction in machining time is confirmed in Donald N. Smith and Larry Evans, *Management Standards for Computers and Numerical Controls* (University of Michigan, 1977). See also John Duke and Horst Brand, "Cyclical Behavior of Productivity in the Machine Tool Industry," *Monthly Labor Review*, November 1981, pp. 27–34.

[17] William H. Parker, "Cutting time out of pump machining," *American Machinist*, January 1979, pp. 112–13.

[18] "The Machine Tools that are Building America," *Iron Age*, Aug. 30, 1976, p. 163. According to the report, electric horsepower requirements for lathes rose from 150 in the 1950's to 400 to 600 in the 1970's. Many other examples are also cited in the article.

[19] Observation of industry operations. See also *Iron Age*, cited above.

[20] Observation of industry operations.

[21] Observation of industry operations. See also Richard W. Lyon, "Foundries," in U.S. Department of Labor, Bureau of Labor Statistics, *Technology and Labor in Four Industries*, Bulletin 2104 (Washington, D.C., Government Printing Office, January 1982), p. 12.

[22] Industry sources, and observation of industry operations. See also A. Harvey Belitsky, "Major technology changes in metalworking machinery," *Technology and Labor in Four Industries*, pp. 20–33.

[23] Industry source.

[24] Adjustment for price changes was made by using the implicit deflator for nonresidential investment in structures and producers' durable equipment. See *Economic Report of the President*, February 1982, p. 236.

[25] U.S. Department of Commerce, Bureau of the Census, *General Report on Industrial Organization, 1977 Enterprise Statistics* (Washington, D.C., Government Printing Office, 1981).

[26] A. Harvey Belitsky, "Major technology changes," especially pp. 24–25.

[27] See *American Machinist*, June 1980, p. 147 ff.

[28] "Biggest U.S. Oil Concerns Likely to React to Glut by Cutting 1982 Capital Budgets," *The Wall Street Journal*, Apr. 7, 1982, p. 7.

[29] "Curbing the Energy Appetite of Hydraulic Systems," *Machine Design*, June 26, 1980, p. 95.

[30] "Modern Hydraulic Systems: the Pressure Mounts," *Machine Design*, Jan. 24, 1980, p. 81 ff.

[31] Rose Zeisel and Michael D. Dymmel, "Petroleum refining," *Technological Change and Its Impact in Five Energy Industries*, p. 26.

[32] See the articles on the Bureau's projections in *Monthly Labor Review*, August 1981, pp. 9–42.

Major Agreements Expiring Next Month

This list of collective bargaining agreements expiring in January is based on contracts on file in the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more.

Employer and location	Industry	Labor organization[1]	Number of workers
Associated Produce Dealers and Brokers of Los Angeles, Inc. (California)	Wholesale trade	Teamsters (Ind.)	2,200
Bunker Ramo Corp. (Illinois)	Electrical products	Electrical Workers (IBEW)	1,250
Campbell Soup Co. (Napoleon, Ohio)	Food products	Food and Commercial Workers	1,850
Caterpillar Tractor Co. (Joliet, Ill.)	Machinery	Machinists	5,700
Champion Spark Plug Co. (Interstate)	Electrical products	Auto Workers	4,300
Dana Corp., Spicer Axle Division (Fort Wayne, Ind.)	Transportation equipment	Allied Industrial Workers	2,300
Erwin Mills (North Carolina)	Textiles	Textile Workers	1,700
General Mills Fun Group, Inc., Kenner Products Division (Cincinnati, Ohio)	Miscellaneous manufacturing	Allied Industrial Workers	2,200
Greater Seattle Retail Drug Association, Inc. (Seattle, Wash.)	Retail trade	Food and Commercial Workers	2,500
Industrial Relations Council of Furniture Manufacturers in Southern California	Furniture	Carpenters	1,200
Johns-Manville Sales Corp. (Manville and Finderne, N.J.)	Stone, clay, and glass products	Paperworkers	1,550
Kelsey-Hayes Co. (Detroit and Romulus, Mich.)	Transportation equipment	Auto Workers	1,500
Kroehler Manufacturing Co. (Interstate)	Furniture	Upholsterers	1,100
Levingston Shipbuilding Co. (Orange, Texas)	Transportation equipment	Orange Metal Trades Council	1,700
Magic Chef, Inc. (Cleveland, Tenn.)	Fabricated metal products	Molders	1,250
Masonite Corp., Hardboard Division (Laurel, Miss.)	Lumber	Woodworkers	1,000
National Electrical Contractors Association, Inc., Western Pennsylvania Chapter	Construction	Electrical Workers (IBEW)	1,250
Philip Morris U.S.A. (Richmond, Va.)	Tobacco	Bakery, Confectionery and Tobacco Workers	7,200
Philip Morris U.S.A. (Louisville, Ky.)	Tobacco	Bakery, Confectionery and Tobacco Workers	2,450
R. H. Macy and Co., Inc., Bamberger Division (Newark, N.J.)	Retail trade	Food and Commercial Workers	1,800
Union Carbide Corp., Agricultural Products Co. (Institute, W. Va.)	Chemicals	Machinists	1,100
United Technologies Corp., Pratt and Whitney Aircraft Group, Government Products Division (West Palm Beach, Fla.)	Transportation equipment	Machinists	1,550

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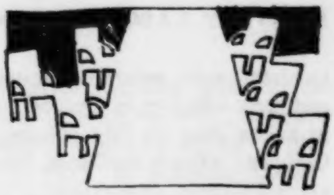
[1] Affiliated with AFL-CIO except where noted as independent (Ind.).

Developments in Industrial Relations



General Tire contract deviates from pattern

General Tire and Rubber Co. and the United Rubber Workers negotiated a 3-year contract for 1,200 workers in Waco, Tex., that deviated from the "pattern" settlement the union had negotiated with other major tire companies. (See *Monthly Labor Review*, July 1982, p. 53.) M.G. O'Neil, president and chairman of General Tire, said the new contract has "important implications for the whole of industry, not just the tire industry."

One of the changes from the pattern calls for skilled workers to receive larger quarterly cost-of-living pay adjustments than unskilled workers. O'Neil said this was necessary to counter a "compression" of pay rates between skilled and unskilled employees that had reduced the workers' incentive to stay in or move up to top-rated jobs, such as tire builder. The cost-of-living formula is the same as the pattern contract (quarterly adjustments of 1 cent an hour for each 0.26-point movement in the Consumer Price Index for Urban Wage Earners and Clerical Workers, CPI-W), except that only 60 percent of the payable amount will be distributed equally to all workers; the balance will be distributed as special adjustments to skilled workers. Another change from the pattern contract called for establishment of a profit-sharing plan that could increase the amount of money available for distribution under the cost-of-living pay adjustment formula.

In another move to relieve the pay compression, the parties reduced the pay rates for unskilled workers hired after the effective date of the contract. For example, the maximum rate for new janitors will be $8.63, compared with the $10.50 rate that still applies for janitors already on the payroll. The pay spread was further increased by providing immediate pay raises to skilled workers.

In the benefits area, the health insurance plan now requires employees to pay 10 percent of hospital room and board costs, up to a maximum of $400 for any one confinement. O'Neil said this would induce employees "to avoid going to the hospital or to shorten the stay."

The accord also revised the portion of the pension formula based on past service to $15 a month for each of the first 15 years of service, $16.50 for each of the next 15 years, and $17 a month for each year in excess of 30. All service accrued after the effective date of the agreement will be calculated at the $17 rate. The pattern settlement raised the benefit rate to $16.50 a month for each year of past or future service, from the $15 rate that prevailed at all of the tire companies, including General Tire.

Similar terms were accepted by 1,200 employees represented by the Rubber Workers at the company's Mayfield, Ky., plant.

Earlier in 1982, General Tire had closed a plant in Akron, Ohio (see *Monthly Labor Review*, June 1982, p. 65). During the current negotiations, the company indicated that the Waco plant also might be closed if the workers did not accept a moderate settlement.

Garment accord defers initial wage increase

About 70,000 workers in various locations were covered by a settlement between cotton garment manufacturers and the Clothing and Textile Workers. The accord deferred the initial wage increase of 25 cents an hour to January 1, 1983. The workers, who make shirts, pajamas, pants, and other garments, will also receive 30-cent increases on January 1 of 1984 and 1985. In addition, there is a provision for automatic cost-of-living pay adjustments in January of 1984 and 1985 equal to the percentage rise in the Consumer Price Index for Urban Wage Earners and Clerical Workers in excess of 5 percent during the preceding year. Each adjustment is limited to 10 cents an hour.

There also were improvements in benefits, including a 3-step increase in sickness and accident benefits to $105 a week, from $76.

Southern textile workers get wage increases

Several major textile mills in the South announced wage increases for their employees. The size of the increases was not divulged, except at Guilford Mills, which granted a 6-percent hike to 1,500 employees. The

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increases were generally limited to hourly employees and were effective in October or November, a change from the June or July effective dates in recent years. Company officials attributed this delay to poor economic conditions in the industry.

At Cannon Mills Corp., the wage increases for 20,000 employees were accompanied by improvements in insurance benefits and the addition of a paid holiday. Other companies granting increases were Burlington Industries, Inc. (38,000 employees affected), West Point Pepperell (15,000), Cone Mills, Inc., and Collins and Aikman.

Meanwhile, the Clothing and Textile Workers Union was bargaining on wages and benefits with Fieldcrest Mills, Inc., for approximately 7,000 workers. The union also was bargaining for smaller numbers of workers it represents at some operations of Cone Mills, Burlington, West Point Pepperell, and M. Lowenstein.

Martin Ward, president of Plumbers union, dies

Martin J. Ward, Jr., general president of the Plumbers and Pipefitters since 1971, died October 9 after a heart attack. Ward, 64, also was a vice president of the AFL-CIO, serving in a variety of assignments, but drawing particular praise for his efforts to further international cooperation among labor organizations.

Selected to succeed Ward was Marvin J. Boede, who had been assistant general president of the union since 1977. For the 2 preceding years, he had served as an international representative, assigned to the State of Michigan. Boede began his career as an official of the union in the 1960's after completing a plumbing apprenticeship.

Beef processor's workers call off strike

A bitter 4-month strike against Iowa Beef Processor's Dakota City, Neb., beef operations was ended when members of Local 222 of the United Food and Commercial Workers voted to return to work. An official of the local said that the return of the 1,600 workers was motivated by the economic hardships suffered by the strikers and by a belief that the union could strengthen its bargaining position by ending the walkout. The official said the union would continue to press the unfair bargaining practices charges it had filed against Iowa Beef, as well as its national boycott campaign against the company. There was no immediate indication of when talks would resume.

The walkout began in early June, after the parties had reached a bargaining stalemate. Reportedly, the union had been willing to accept a 2-year wage freeze, including a suspension of cost-of-living pay adjustments, similar to its earlier settlements with other meatpackers. (See *Monthly Labor Review*, February 1982, p. 48.) But, Iowa Beef was pressing for a 4-year pay freeze and for a $2-an-hour cut in pay for new workers, contending that its pay rates were higher than some the union had negotiated with competitive firms. According to the company, its minimum rates were $9.27 for workers in slaughtering, and $8.97 for those in processing.

Some picket line violence erupted when the company began hiring replacements for the strikers, and State police and the national guard were ordered to the scene by Iowa Governor Charles Thone. As the return to work was beginning, a union official commented, "I don't know what will happen to them [the replacements]. Obviously, there isn't room there for all of them."

GM, union set up occupational health panel

General Motors Corp. and the Auto Workers announced formation of a panel of six occupational health scientists to aid in improving workers' safety and health at the company. The new Occupational Health Advisory Board, headed by David W. Wegman of the Harvard School of Public Health, will evaluate and develop research projects, health programs, and related activities.

General Motors Vice President Alfred S. Warren, Jr. and Auto Workers Vice President Owen Bieber said the board is the first of its type established by a major industrial company and a union. The panel was established under terms of the 1982 collective bargaining settlement between the parties. (See *Monthly Labor Review*, May 1982, pp. 59–60.)

Second round of concessions at Hayes-Albion

About 470 workers at Hayes-Albion's Malleable Iron Division approved a second round of wage concessions in an effort to avert a shutdown of the 93-year-old plant, located in Albion, Mich. In addition to a $1.16 cut in their $10.38 an hour average pay, they agreed to a freeze on cost-of-living pay adjustments and a reduction in paid holidays, insurance, and other benefits. The employees are represented by the United Auto Workers.

Despite the 3-year concession agreement, the company did not guarantee that the foundry would remain open, noting that it was operating at only 30 percent of capacity and had suffered losses in each of the last 3 years. The company had been forced to close two other plants in Tiffin and Bryan, Ohio.

In a related development, the Albion city council moved to aid the company by granting it 3 months of free water and sewer service valued at about $31,000. The city government also was proceeding with efforts to have local businesses help ease the impact of the cuts at the plant by holding down or reducing their prices.

Concession agreement at Rockwell International

Workers at Rockwell International Corp. agreed to a concession agreement that supersedes a contract scheduled to expire in February 1983. About 5,200 workers at 10 heavy-vehicle parts plants were covered by the new contract, which runs to July 19, 1985. Reportedly, terms included no specified wage increases, an 18-month deferral of each of the next three usual quarterly cost-of-living pay adjustments, and a 25-percent reduction in the size of all subsequent adjustments. In return, the company agreed to advance money to the weakened Supplemental Unemployment Benefits fund and to increase its basic financing rate. The company also increased certain other benefits for workers affected by layoffs and plant closings.

About half of the members of the Auto Workers union affected by the settlement are on layoff. The plants are located in Michigan, Illinois, Indiana, Ohio, and Kentucky.

Union initiates concessions to save jobs

In Tecumseh, Mich., workers at Tecumseh Products Co. voted to freeze their cost-of-living pay allowance for 1 year. This precluded payment of a 20-cent-an-hour increase in the allowance that had been scheduled for the beginning of October.

According to Raymond R. Jackson, president of the independent United Products Workers Union, the move was initiated by the union. He said the plant was currently shut down for 3½ weeks because of a lack of orders for the automotive air conditioning compressors it produces. Current employment at the plant is 560 workers, compared with 1,400 in recent years and 3,400 in 1968.

Bargaining completed for city employees

Bargaining between the City of New York and its employees was essentially completed in mid-October when 35,000 uniformed employees agreed on 2-year contracts. In September, the city had settled with a coalition of 40 unions representing 180,000 nonuniformed employees.

In the wake of these settlements, the only employees still bargaining with the city were 7,300 sanitation workers, and small groups of uniformed supervisory police officers.

Mayor Edward Koch acknowledged that the settlement for the uniformed police patrol officers, firefighters, and correction officers was more liberal than that for the nonuniformed employees. But, he explained, this was proper because the uniformed employees "perform the most dangerous work of all our city employees." The uniformed employees contracts called for an 8-percent pay increase retroactive to the July 1 termination date of the prior contracts, and for another 8 percent increase on July 1, 1983. In addition, current employees who were on the payroll during the city's 1975–76 fiscal crisis will receive a $988 payment to repay wages that were lost when all of the city's unions agreed to a 1-year suspension of part or all of a 6-percent wage increase that was effective July 1, 1975. Payment was to be spread over a period of years. Other contracts terms included improvements in health insurance benefits and a $200 increase in longevity pay. Prior to the settlement, the top base pay for employees in all three groups had been $23,519 after 3 years of service.

The unions involved in bargaining for uniformed employees were the Patrolmen's Benevolent Association, the Uniformed Firefighters Association, the Correction Officers Benevolent Association, the Uniformed Fire Officers Association, and the Housing Patrolmen's Benevolent Association.

The accord for 180,000 nonuniformed workers called for a 2-year term generally beginning July 1, 1982. However, the initial wage increase of 8 percent was delayed 2 months for most of the employees. The agreement also provided for increased city financing of health insurance and other benefits.

Earlier in the year, 35,000 New York City bus and subway workers were affected by a 3-year arbitration award that ended a bargaining impasse between the Transport Workers and Amalgamated Transit Workers unions and the Metropolitan Transit Authority. The award provided for a 7-percent pay increase retroactive to the April 1, 1982, termination date of the prior contracts, and for increases of 6 percent on April 1, 1983, 4 percent on April 1, 1984, and 3 percent on July 1, 1984. The award also terminated the automatic cost-of-living pay adjustment provision; added an 11th paid holiday; and increased the transit authority's financing of health and welfare benefits. The transit authority is a State agency.

Teacher settlements

The start of the new school year was accompanied by a number of settlements for public school teachers and related employees.

- In Detroit, 11,000 teachers represented by the American Federation of Teachers were covered by a 1-year contract that did not provide for a salary increase. The settlement was preceded by a 3-week strike.
- In Philadelphia, 20,000 teachers represented by the American Federation of Teachers were covered by a 3-year contract that called for 6 percent salary increases in September 1982 and March of 1984 and

1985. The school board also agreed to finance 80 percent of health and welfare benefits (up from 60 percent), and to pay the teachers for time lost during their 1981 strike—10 days of pay immediately and 9 days at retirement.

- In Chicago, 30,000 members of the American Federation of Teachers agreed to a 1-year contract that did not provide for salary or benefit improvements. The school board did agree to continue paying the full cost of pensions; prior to the 1981 settlement, the teachers had contributed 7 percent of their salary. The teachers gave up 1 day of pay to help minimize the cost of the 1982 settlement.
- In Jefferson County, Ky., 5,200 members of the National Education Association were covered by a 2-year agreement that provided for a 5.3-percent salary increase effective July 1, 1982, and a 4.7-percent increase effective July 1, 1983. The accord also called for a .5-percent (of salary) increase in employer financing of benefits, and increment increases of $500 for teachers with 20 years of service and $1,000 for those with 25 years of service.
- In Seattle, 2,500 members of the National Education Association were covered by a 1-year accord that did not provide for salary or benefit improvements.
- In Newark, N.J., 5,500 teachers represented by the American Federation of Teachers were covered by a 3-year contract that provided for a 6-percent salary increase retroactive to July 1 and for 8-percent increases on July 1 of 1983 and 1984. Teachers with 20 years of service receive $684 a year in longevity pay, increasing to $739 on July 1, 1983, and $798 on July 1, 1984.
- In Florida, 6,400 members of the independent Hillsborough (County) Classroom Teachers Association were covered by a 1-year contract that provided for an 8.5-percent salary increase. Other terms included complete financing of health benefits by the school board, as long as premiums do not increase more than 30 percent (teachers previously paid part of the premium), full payment for unused sick leave at retirement (formerly 75 percent); and up to 7 years of credit for full-time teaching outside the county (formerly 5 years).

Howard Johnson's to pay overtime wages

Two years of legal proceedings against the Howard Johnson's motel and restaurant chain ended when the firm agreed to pay $5 million in overtime wages to 5,000 current and former employees. The U.S. Department of Labor had charged that the company violated the Fair Labor Standards Act by not paying time-and-a-half rates for work in excess of 40 hours a week by salaried manager trainees and assistant managers earning under $250 a week, and hourly paid managers and manager trainees.

During the proceedings, Howard Johnson's contended the employees were exempt from the overtime pay requirements because they were part of "management." The Department maintained this was incorrect because the workers earned less than $250 a week, and because its investigation showed that they spent more than 40 percent of their time in "routine, non-management" type work.

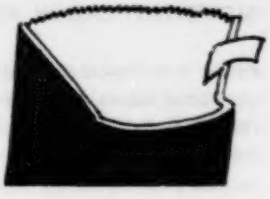
The $5 million will be distributed to current and former employees who performed in the jobs from August 1977 to March 1982. The settlement involved workers at 900 locations. Money that the company is unable to distribute because it cannot locate former employees will be paid into the U.S. Treasury.

Union leadership changes

In a November election, 33-year-old challenger Rich Trumka defeated Sam Church for the presidency of the United Mine Workers. The vote margin was about 2 to 1. However, Church did not concede the results, continuing to press his claim that Trumka had not served the required 5 years in the mines. Trumka, who had been a UMW staff attorney after working in the mines, said his priorities were to speed up organizing efforts to reverse the decline in the percentage of coal mined by the union's members, increase local political activity to help win legal objectives, and improve internal finances. The UMW has about 220,000 members—120,000 actively employed, 40,000 on layoff, and 60,000 retirees.

At the Auto Workers, the union's executive board backed Owen Bieber to succeed Douglas Fraser when he retires in May 1983. Fraser, who is leaving because he is at the union's mandatory retirement age of 65, has guided the union for 6 difficult years during which its members were hard hit by layoffs and contract concessions resulting from the domestic automobile industry's difficulties. Bieber, age 52, began his career in the industry in 1948 in Michigan, then moved through a succession of local, regional, and national jobs in the union. Since 1980, he has been a vice president of the UAW and has headed its General Motors Department. Bieber's accession to the presidency of the UAW was expected to be ratified at its May 1983 convention. □

Book Reviews



Help wanted—for women resuming careers

Women Returning to Work: Policies and Progress in Five Countries. Edited by Alice M. Yohalem. Montclair, N.J., Allanheld, Osmun & Co. Publishers, Inc., 1980. 292 pp. $25.

In recent decades, industrialized nations have experienced substantial growth in labor force participation by women. The value of this comparative international study lies in its cumulative effect, in its delineation of the almost universal cultural and political framework underlying the employment aspirations and opportunities of these women. The study grew out of the interest of the German Marshall Fund in sponsoring research on the changing role of women in advanced industrial nations. Financed by a Federal grant, the study was carried out with the cooperation of the Conservation of Human Resources Project, Columbia University.

Participants in the cross-national study (West Germany, France, the United Kingdom, Sweden, and the United States) met in 1978 to discuss the key areas to be investigated. With allowance for variances of statistical data, each national study sought to provide data on the number of women reentrants to the labor force; their specific problems on reentry; governmental policies regarding reentrants, especially in the context of labor market policy (but also, in some studies, with reference to incentives and disincentives created by taxation and family assistance policies); finally, each author's recommendations on facilitating reentry of women. Each national study presents relevant legislation and available statistical data, supplemented by quotations obtained in interviews with reentrants.

An underlying premise of the studies is that women in industrial economies will spend a good portion of their lives in the paid labor force. Several factors—including smaller families, inflationary pressures, the rise in the numbers of divorces and families headed by women—now lead to the conclusion that the average woman is likely to spend two decades or more in the labor force, and, therefore, opportunities and encouragement should be given to young women for greater education and training. For each country, the studies address two basic questions: (1) Do government labor market policies encourage participation by women returning to the labor force by providing equal access to needed counseling; training; child care; unemployment or subsistence benefits; sponsored public employment programs; options for part-time and full-time employment? (And, in some studies, do tax and family-benefit policies on balance encourage such women to reenter the labor force?) (2) What alternative government policies might better facilitate the reentry of such women?

In an excellent foreword, Eli Ginzberg, director of the Conservation of Human Resources Project, sums up the individual study findings relative to the first question:

> Despite significant differences in attitudes and behavior toward the return of mature women to work, France, Germany and the United Kingdom demonstrate several elements in common. Each of these countries gives priority in practice to programs for unemployed and unskilled youth and adult males and to persons seeking upgrading in skills in high demand. Such programs usually offer benefits that include compensation for earnings loss, social insurance coverage, travel expenses, and household maintenance. Facilitating the reentry of adult women is not deemed worthy of special assistance. Despite increases in the work activity of adult women in these nations, they are still regarded as a peripheral labor supply that can be adjusted to fluctuations in demand. Together with policies aimed at opening and closing the flow of guest workers, women remain the major balance wheel. . . . Although the United States has established a series of measures to promote equal employment opportunity, they are not the equivalent of the national commitment to equality in all social relationships that underlies the Swedish model.

These generalizations are supported by findings of the individual studies. Day care is insufficient for needs, especially for older children, and priority is given to those women already working, or receiving public funds, or heading families. In France, the National Employment Agency (ANPE) is "absolutely snowed under" by requests from "men, young people and people suddenly out of work" and thus placement personnel and counselors "are a bit negligent in helping reentrants who are reputedly difficult to place" even though, "since 1978, training programs are rightfully open to (them)." For West Germany, although the 1969 Labor Promotion Act explicitly covers women reentrants as a target group, the current policy is to measure the potential labor force as including the "silent reserve" during boom times, but "excluding the silent reserve and registered part-time female job-seekers, primarily returnees, during recessions." "No statistics have been published on the role of participation by women returnees in the advanced and retraining measures, although the act specifically provides for them." Training benefits are conditional upon extensive prior and subsequent employment, often inconsistent with women's family obligations; subsistence benefits are lower for women because their labor force participation is generally classified as "desirable" rather than "necessary." With statistical data lacking, the author assumes that the "labor exchange is negatively selective in regard to women" (in publicly funded employment) because most women returnees are not benefit-recipients, and their unemployment represents no drain on public funds. In the United Kingdom, the Manpower Services Commission has "until recently tended to resist provision for special sections of the population," although the 1973 Employment and Training Act encouraged the Commission to include arrangements for increasing the opportunities for women and girls for employment and training. In the United States, measures to achieve "maximum employment" are endorsed by the Full Employment and Balanced Growth Act of 1978, but in the interest of controlling inflation, structural remedies (such as the Comprehensive Employment and Training Act, CETA) have in recent years been the dominant method of dealing with unemployment. In such programs, a study by Wharton School faculty members (O. R. Perry and others, *The Impact of Government Manpower Programs in General and on Minorities and Women*, University of Pennsylvania, Wharton School, 1975) found that minority and female trainees were heavily concentrated in programs having a limited emphasis on the acquisition and development of marketable occupational skills. "Only in the late 1970's have certain reentrants been specifically identified in legislation as targets for special types of assistance." And "some programs which have been especially designed for displaced homemakers" [often build] "on competencies gained in housekeeping and child rearing."

Only Sweden appears to have made serious effort to promote the full integration of returning women into the labor force. An Advisory Council on Equality between Men and Women was appointed in 1972, with prime emphasis on "unemployed and untrained women"—often synonymous with reentering women. Even so, cultural patterns, as well as the growing demand of the public sector fields (education, health, child and elderly care), have directed women reentrants and newcomers alike to employment in traditional "women's fields." In Sweden, as elsewhere, women continue to accept the main responsibility for home and child care, and occupy 91 percent of part-time jobs.

With respect to taxation policies and family income subsidies, those studies which dealt with this aspect emphasized the disincentives to full labor market participation by married women, or those with children. Some changes have been made to improve incentives. For example, in Sweden, a system of individual taxation was adopted in 1971 in place of the former high marginal tax on the wife's earnings; in the United States, the 1981 tax revisions also moderated the "marriage tax." The low pay for most "women's jobs" creates a policy dilemma: public funds can provide a higher standard of living for the family than can an unskilled female worker, whose net employment income may be negative after the loss of food, housing, and medical benefits associated with public assistance.

Recommendations by each author for improvement in the treatment of reentry women differ in emphasis, depending on each national situation. However, in general, the studies stress improved data collection and publication. (The United States compares favorably with other countries in this respect, but even more data are needed here also.) The recommendations also urge elimination of sex-stereotypes in education and vocational training, not only so that mature women may have access to better-paid "men's jobs," but also so that young women will not be led by social pressures to abandon schooling too soon, or to focus only on "women's fields." Other recommended governmental measures include an even-handed policy for both sexes by public employment agencies relative to counseling, training, unemployment and subsistence grants, and provision of public sector jobs; explicit governmental encouragement of equal parental responsibility for children and improved legislation regarding leave for parental duties; and public funding of high-quality child care for those families choosing to make use of such facilities. Such costly measures are unlikely to be adopted by governments facing periods of depressed economic growth. Therefore, it was also recommended that governments foster economic growth to the extent necessary to provide full employment, and thus improve job opportunities for all, including female reentrants.

This collection of studies will be highly useful to governmental policymakers as a means of measuring comparative progress in fostering the welfare of female citizens, as well as comparative success in fully utilizing labor resources. The authors bring to the present volume a record of significant studies of women in the labor market. A few minor criticisms may be noted: The quotations from interviews add immediacy, but there is no indication of interview format. In a few instances, sources of numerical data are not clearly spelled out. Nevertheless, all interested researchers will welcome these documented studies.

In the reviewer's opinion, this collection of studies, by revealing the near-universality of the constraints faced by female reentrants, also strengthens the case for major reform of the educational system in order to modify societal biases. It is likely that the number of "reentrants" will diminish in the coming decades, as work force continuity of women becomes more like that of men. But the persistent problems of women in the labor force, of holding mostly low-pay, dead end jobs, will not be diminished until the educational system is made responsive to the new lifetime commitment of women to the paid labor force. In reference to the eligibility for skill training in the United Kingdom, the author writes: . . . "females tend to miss out twice—as girls 'because they will soon leave and have a baby,' and as reentrants because they are beyond the age for trainees and have not had the experience to justify further training." The distinctions in primary and secondary schools in academic curricula, physical education, and vocational training are extended and worsened in post-secondary training and college and university selection processes at undergraduate, graduate, and professional levels. The 30- to 50-year-old returnee who needs confidence-building, counseling, and job-readiness programs is the predictable product of a societal system which during the educational process considers her chiefly in relation to her child-rearing years, but then subsequently hands back to each woman the problems of belatedly acquiring the education or training needed for economic survival while juggling work schedules and children's needs.

—Blanche Fitzpatrick
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Managerial perfection

The Transactional Manager: How to Solve People Problems with Transactional Analysis. By Abe Wagner. Englewood Cliffs, N.J., Prentice Hall, Inc., 1981. 196 pp., bibliography. $11.95.

Abe Wagner suspects that many supervisors and managers attain their positions based on the "Peter Principle," whereby their technical prowess is rewarded by putting them in charge of people, but lacking communication skills they become ineffective in their dealings with those they manage. The author's answer to the above problem is the gist of this book. He states that he has simplified and recast some of the transactional analysis theory developed by psychiatrist Eric Berne "to make it more readily useful to people who are unfamiliar with transactional analysis." The manager absorbs this material, applies it to his or her own behavior, avoiding any use of it for coercive or manipulative purposes, and develops those communication skills, or the author's preference, "people skills," to create more effective and productive managerial qualities.

Over the past decade, there have been at least 10 books published which are aimed at the manager, salesperson, personnel officer, and so on, all indicating that by learning, and then applying the techniques of transactional analysis, they can greatly improve the efficacy of their occupational work as they relate to and with others. It's very hard to disagree with the bare bones of such a proposition—people who are highly self-aware, in charge of their own behavior, and able to model rational behavior before others (the elements of transactional analysis) will generally have a more successful working and personal life than those lacking such attributes—but that's not the basic question in this book. The real question is: Can a person by *reading* a book actually internalize the contents to the point of *changing* his or her behavior? Knowledge *about* something, which comes from reading or attending lectures, gives a person an intellectual storehouse of ideas, but it is entirely different from knowledge of *experience*, which comes from actually having existed in the interpersonal situations, good or bad, which transactional analysis theory and guidelines attempt to articulate.

This book is lucid and to the point. Wagner explicates without overreliance on jargon and speaks to those who have some background in psychoanalytical theory out of which Berne evolved the transactional analysis formulations. To others, this book may be an incentive to look further into their personal behavior. But to believe that a book, even as good as this one, can help promote a move toward managerial reformation is an overoptimistic piety.

To be sure, at the end of the book, Wagner suggests that a consultant in transactional analysis may be needed to incorporate the idea of improved "people skills" within an organization, and some companies have apparently tried this with varying outcomes. However, managers in either the private or the public sector may, for the most part, be shocked by the author's opinion that they might benefit from personal therapy as a step in changing their own behavior, because again, the opinion is an intellectual construct, however valid it may be, and not a self-realization from an actual experience. This book deals a bit too lightly in the serious matters it so adequately describes and thus raises additional questions about its ultimate acceptance by the managers it seeks to attract.

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NOTES ON CURRENT LABOR STATISTICS

This section of the *Review* presents the principal statistical series collected and calculated by the Bureau of Labor Statistics. A brief introduction to each group of tables provides definitions, notes on the data, sources, and other material usually found in footnotes.

Readers who need additional information are invited to consult the BLS regional offices listed on the inside front cover of this issue of the *Review*. Some general notes applicable to several series are given below.

Seasonal adjustment. Certain monthly and quarterly data are adjusted to eliminate the effect of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might otherwise mask short-term movements of the statistical series. Tables containing these data are identified as "seasonally adjusted." Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years.

Seasonally adjusted labor force data in tables 2–7 were revised in the March 1982 issue of the *Review* to reflect experience through 1981. The original estimates also were revised to 1970 to reflect 1980 census population controls.

Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are being seasonally adjusted with a new procedure called X-11/ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada Catalogue No. 12-564E, February 1980). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. Revisions of historical data continue to be made only at the end of each calendar year.

Annual revision of the seasonally adjusted payroll data shown in tables 10, 12, and 14 were made in August 1981 using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 28 and 29 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

Adjustments for price changes. Some data are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of $3 and a current price index number of 150, where 1967 = 100, the hourly rate expressed in 1967 dollars is $2 ($3/150 × 100 = $2). The resulting values are described as "real," "constant," or "1967" dollars.

Availability of information. Data that supplement the tables in this section are published by the Bureau of Labor Statistics in a variety of sources. Press releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule given below. The *BLS Handbook of Labor Statistics*, Bulletin 2070, provides more detailed data and greater historical coverage for most of the statistical series presented in the *Monthly Labor Review*. More information from the household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau. Historically, comparable information from the establishment survey is published in two comprehensive data books—*Employment and Earnings, United States* and *Employment and Earnings, States and Areas*, and their annual supplements. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

Symbols

p = preliminary. To improve the timeliness of some series, preliminary figures are issued based on representative but incomplete returns.
r = revised. Generally, this revision reflects the availability of later data but may also reflect other adjustments.
n.e.c. = not elsewhere classified.

Schedule of release dates for major BLS statistical series

Series	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	December 3	November	January 7	December	1–10
Producer Price Index	December 10	November	January 14	December	21–25
Consumer Price Index	December 21	November	January 21	December	17–20
Real earnings	December 21	November	January 21	December	11–15
Productivity and costs:					
Nonfinancial corporations	.....	....	....	....	26–29
Nonfarm business and manufacturing	.....	....	January 28	4th quarter	26–29
Major collective bargaining settlements	.....	....	January 31	1982	33–34

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 60,000 households selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

Definitions

Employed persons are (1) those who worked for pay any time during the week which includes the 12th day of the month or who worked unpaid for 15 hours or more in a family-operated enterprise and (2) those who were temporarily absent from their regular jobs because of illness, vacation, industrial dispute, or similar reasons. A person working at more than one job is counted only in the job at which he or she worked the greatest number of hours.

Unemployed persons are those who did not work during the survey week, but were available for work except for temporary illness and had looked for jobs within the preceding 4 weeks. Persons who did not look for work because they were on layoff or waiting to start new jobs within the next 30 days are also counted among the unemployed. The **unemployment rate** represents the number unemployed as a percent of the civilian labor force.

The **civilian labor force** consists of all employed or unemployed persons in the civilian noninstitutional population; the **total labor force** includes military personnel. Persons **not in the labor force** are those not classified as employed or unemployed; this group includes persons retired, those engaged in their own housework, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job market factors, and those who are voluntarily idle. The **noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy.

Full-time workers are those employed at least 35 hours a week; **part-time workers** are those who work fewer hours. Workers on part-time schedules for economic reasons (such as slack work, terminating or starting a job during the week, material shortages, or inability to find full-time work) are among those counted as being on full-time status, under the assumption that they would be working full time if conditions permitted. The survey classifies unemployed persons in full-time or part-time status by their reported preferences for full-time or part-time work.

Notes on the data

From time to time, and especially after a decennial census, adjustments are made in the Current Population Survey figures to correct for estimating errors during the preceding years. These adjustments affect the comparability of historical data presented in table 1. A description of these adjustments and their effect on the various data series appear in the Explanatory Notes of *Employment and Earnings*.

Data in tables 2–7 are seasonally adjusted, based on the seasonal experience through December 1981.

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950–81

[Numbers in thousands]

Year	Total non-institutional population	Total labor force		Civilian labor force							Not in labor force
					Employed				Unemployed		
		Number	Percent of population	Total	Total	Percent of population	Agriculture	Nonagri-cultural industries	Number	Percent of labor force	
1950	106,645	63,858	59.9	62,208	58,918	55.2	7,160	51,758	3,288	5.3	42,787
1955	112,732	68,072	60.4	65,023	62,170	55.1	6,450	55,722	2,852	4.4	44,660
1960	119,759	72,142	60.2	69,628	65,778	54.9	5,458	60,318	3,852	5.5	47,617
1965	129,236	77,178	59.7	74,455	71,088	55.0	4,361	66,726	3,366	4.5	52,058
1966	131,180	78,893	60.1	75,770	72,895	55.6	3,979	68,915	2,875	3.8	52,288
1967	133,319	80,793	60.6	77,347	74,372	55.8	3,844	70,527	2,975	3.8	52,527
1968	135,562	82,272	60.7	78,737	75,920	56.0	3,817	72,103	2,817	3.6	53,291
1969	137,841	84,240	61.1	80,734	77,902	56.5	3,606	74,296	2,832	3.5	53,602
1970	140,272	85,959	61.3	82,771	78,678	56.1	3,463	75,215	4,093	4.9	54,315
1971	143,033	87,198	61.0	84,382	79,367	55.5	3,394	75,972	5,016	5.9	55,834
1972	146,574	89,484	61.1	87,034	82,153	56.0	3,484	78,669	4,882	5.6	57,091
1973	149,423	91,756	61.4	89,429	85,064	56.9	3,470	81,594	4,365	4.9	57,667
1974	152,349	94,179	61.8	91,949	86,794	57.0	3,515	83,279	5,156	5.6	58,171
1975	155,333	95,955	61.8	93,775	85,846	55.3	3,408	82,438	7,929	8.5	59,377
1976	158,294	98,302	62.1	96,158	88,752	56.1	3,331	85,421	7,406	7.7	59,991
1977	161,166	101,142	62.8	99,009	92,017	57.1	3,283	88,734	6,991	7.1	60,025
1978	164,027	104,368	63.6	102,251	96,048	58.6	3,387	92,661	6,202	6.1	59,659
1979	166,951	107,050	64.1	104,962	98,824	59.2	3,347	95,477	6,137	5.8	59,900
1980	169,848	109,042	64.2	106,940	99,303	58.5	3,364	95,938	7,637	7.1	60,806
1981	172,272	110,812	64.3	108,670	100,397	58.3	3,368	97,030	8,273	7.6	61,460

2. Employment status by sex, age, race, and Hispanic origin, seasonally adjusted

[Numbers in thousands]

Employment status	Annual average		1981			1982									
	1980	1981	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
TOTAL															
Total noninstitutional population[1]	169,848	172,272	172,966	173,155	173,330	173,495	173,657	173,843	174,020	174,201	174,364	174,544	174,707	174,889	175,069
Armed Forces [1]	2,102	2,142	2,158	2,158	2,164	2,159	2,168	2,175	2,176	2,175	2,173	2,180	2,196	2,198	2,188
Civilian noninstitutional population [1]	167,745	170,130	170,809	170,996	171,166	171,335	171,489	171,667	171,844	172,026	172,190	172,364	172,511	172,690	172,881
Civilian labor force	106,940	108,670	109,012	109,272	109,184	108,879	109,165	109,346	109,648	110,666	110,191	110,522	110,644	110,980	110,644
Participation rate	63.8	63.9	63.8	63.9	63.8	63.5	63.7	63.7	63.8	64.3	64.0	64.1	64.1	64.3	64.0
Employed	99,303	100,397	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117	99,764	99,732	99,839	99,720	99,093
Employment-population ratio [2]	58.5	58.3	58.0	57.9	57.5	57.4	57.3	57.2	57.1	57.5	57.2	57.1	57.1	57.0	56.6
Agriculture	3,364	3,368	3,378	3,372	3,209	3,411	3,373	3,348	3,309	3,488	3,357	3,460	3,435	3,368	3,426
Nonagricultural industries	95,938	97,030	96,965	96,800	96,404	96,170	96,217	96,144	96,032	96,629	96,406	96,272	96,404	96,352	95,667
Unemployed	7,637	8,273	8,669	9,100	9,571	9,298	9,575	9,854	10,307	10,549	10,427	10,790	10,805	11,260	11,551
Unemployment rate	7.1	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8	9.8	10.1	10.4
Not in labor force	60,806	61,460	61,797	61,724	61,982	62,456	62,324	62,321	62,197	61,360	61,999	61,842	61,867	61,710	62,237
Men, 20 years and over															
Civilian noninstitutional population[1]	71,138	72,419	72,795	72,921	73,020	73,120	73,209	73,287	73,392	73,499	73,585	73,685	73,774	73,867	73,984
Civilian labor force	56,455	57,197	57,355	57,459	57,665	57,368	57,448	57,554	57,730	58,164	58,016	58,064	58,026	58,407	58,359
Participation rate	79.4	79.0	78.8	78.8	79.0	78.5	78.5	78.5	78.7	79.1	78.8	78.8	78.7	79.1	78.9
Employed	53,101	53,582	53,504	53,354	53,122	53,047	53,097	53,006	52,988	53,260	52,985	52,996	52,887	52,828	52,626
Agriculture	2,396	2,384	2,413	2,382	2,311	2,390	2,386	2,377	2,382	2,464	2,424	2,474	2,436	2,447	2,462
Nonagricultural industries	50,706	51,199	51,091	50,972	50,811	50,657	50,711	50,629	50,606	50,796	50,561	50,522	50,451	50,381	50,164
Unemployed	3,353	3,615	3,851	4,105	4,543	4,322	4,351	4,548	4,742	4,904	5,031	5,068	5,139	5,579	5,733
Unemployment rate	5.9	6.3	6.7	7.1	7.9	7.5	7.6	7.9	8.2	8.4	8.7	8.8	8.9	9.6	9.8
Women, 20 years and over															
Civilian noninstitutional population[1]	80,065	81,497	81,820	82,038	82,151	82,260	82,367	82,476	82,591	82,707	82,811	82,926	83,035	83,152	83,271
Civilian labor force	41,106	42,485	42,831	42,987	42,888	42,868	43,031	43,243	43,301	43,683	43,904	44,076	44,115	44,025	43,833
Participation rate	51.3	52.1	52.3	52.4	52.2	52.1	52.2	52.4	52.4	52.8	53.0	53.2	53.1	52.9	52.6
Employed	38,492	39,590	39,814	39,878	39,713	39,764	39,744	39,807	39,715	40,075	40,350	40,392	40,490	40,369	40,046
Agriculture	584	604	596	63.5	572	64.9	628	636	601	634	581	600	589	585	572
Nonagricultural industries	37,907	38,986	39,218	39,243	39,141	39,115	39,116	39,172	39,114	39,441	39,769	39,791	39,901	39,784	39,474
Unemployed	2,615	2,895	3,017	3,109	3,175	3,104	3,286	3,435	3,586	3,608	3,554	3,684	3,626	3,656	3,787
Unemployment rate	6.4	6.8	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3	8.1	8.4	8.2	8.3	8.6
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	16,543	16,214	16,093	16,037	15,995	15,955	15,913	15,902	15,861	15,820	15,794	15,753	15,702	15,671	15,625
Civilian labor force	9,378	8,988	8,826	8,826	8,631	8,643	8,686	8,549	8,616	8,819	8,271	8,362	8,503	8,548	8,452
Participation rate	56.7	55.4	54.8	55.0	54.0	54.2	54.6	53.8	54.3	55.7	52.4	53.1	54.2	54.5	54.1
Employed	7,710	7,225	7,025	6,940	6,778	6,771	6,748	6,679	6,637	6,782	6,429	6,344	6,463	6,523	6,422
Agriculture	385	380	369	355	326	373	359	336	326	390	353	386	411	336	393
Nonagricultural industries	7,325	6,845	6,656	6,585	6,452	6,398	6,389	6,343	6,311	6,392	6,076	5,958	6,052	6,187	6,029
Unemployed	1,669	1,763	1,801	1,886	1,853	1,872	1,938	1,870	1,979	2,037	1,842	2,018	2,040	2,025	2,030
Unemployment rate	17.8	19.6	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1	24.0	23.7	24.0
White															
Civilian noninstitutional population[1]	146,122	147,908	148,582	148,631	148,755	148,842	148,955	149,132	149,249	149,250	149,429	149,569	149,536	149,652	149,838
Civilian labor force	93,600	95,052	95,365	95,535	95,329	95,120	95,333	95,508	96,015	96,641	96,223	96,493	96,414	96,762	96,421
Participation	64.1	64.3	64.2	64.3	64.1	63.9	64.0	64.0	64.3	64.8	64.4	64.5	64.5	64.7	64.3
Employed	87,715	88,709	88,734	88,498	88,010	87,955	87,990	87,956	87,988	88,450	88,173	88,137	88,133	88,020	87,434
Unemployed	5,884	6,343	6,631	7,037	7,319	7,165	7,344	7,552	8,026	8,191	8,050	8,356	8,281	8,742	8,987
Unemployment rate	6.3	6.7	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5	8.4	8.7	8.6	9.0	9.3
Black															
Civilian noninstitutional population[1]	17,824	18,219	18,333	18,362	18,392	18,423	18,450	18,480	18,511	18,542	18,570	18,600	18,626	18,659	18,692
Civilian labor force	10,865	11,086	11,188	11,207	11,226	11,188	11,205	11,217	11,170	11,335	11,253	11,322	11,412	11,482	11,395
Participation rate	61.0	60.8	61.0	61.0	61.0		60.7	60.7	60.3	61.1	60.6	60.9	61.3	61.5	61.0
Employed	9,313	9,355	9,313	9,321	9,279	9,314	9,265	9,197	9,111	9,216	9,174	9,223	9,262	9,166	9,096
Unemployed	1,553	1,731	1,875	1,886	1,947	1,874	1,939	2,020	2,058	2,120	2,079	2,098	2,150	2,316	2,299
Unemployment rate	14.3	15.6	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7	18.5	18.5	18.8	20.2	20.2
Hispanic origin															
Civilian noninstitutional population[1]	8,901	9,310	9,559	9,556	9,519	9,400	9,341	9,297	9,295	9,297	9,428	9,521	9,689	9,484	9,474
Civilian labor force	5,700	5,972	6,074	6,151	6,095	6,054	6,065	6,024	5,933	6,001	5,931	5,968	6,087	5,967	5,994
Participation rate	64.0	64.1	63.5	64.4	64.0	64.4	64.9	64.8	64.2	64.5	62.9	62.7	62.8	63.1	63.3
Employed	5,126	5,348	5,422	5,446	5,426	5,330	5,298	5,260	5,191	5,166	5,131	5,135	5,197	5,097	5,086
Unemployed	575	624	652	705	669	724	767	764	743	834	800	832	890	870	908
Unemployement rate	10.1	10.4	10.7	11.5	11.0	12.0	12.6	12.7	12.5	13.9	13.5	13.9	14.6	14.6	15.2

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[1] The population and Armed Forces figures are not seasonally adjusted.

[2] Civilian employment as a percent of the total noninstitutional population (including Armed Forces).

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups.

3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1981			1982									
	1980	1981	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
CHARACTERISTIC															
Total employed, 16 years and over	99,303	100,397	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117	99,764	99,732	99,839	99,720	99,093
Men	57,186	57,397	57,266	57,051	56,725	56,629	56,658	56,472	56,401	56,820	56,223	56,192	56,210	56,148	55,915
Women	42,117	43,000	43,077	43,121	42,888	42,952	42,932	43,020	42,940	43,297	43,541	43,540	43,630	43,572	43,178
Married men, spouse present	39,004	38,882	38,746	38,553	38,342	38,234	38,255	38,181	38,142	38,312	38,354	38,213	38,184	38,041	37,880
Married women, spouse present	23,532	23,915	23,874	23,820	23,691	23,744	23,727	23,900	23,831	24,213	24,401	24,223	24,300	24,187	24,047
Women who maintain families	4,780	4,998	5,045	5,049	5,064	5,107	5,158	5,095	5,095	4,986	5,112	5,247	5,218	5,115	5,108
OCCUPATION															
White-collar workers	51,882	52,949	53,199	53,086	53,084	52,836	52,841	52,763	53,177	53,705	53,586	53,685	53,750	53,876	53,643
Professional and technical	15,968	16,420	16,881	16,857	16,774	16,803	16,612	16,659	16,844	16,818	17,053	17,292	17,023	16,901	17,049
Managers and administrators, except farm	11,138	11,540	11,616	11,461	11,424	11,091	11,253	11,311	11,501	11,541	11,504	11,355	11,613	11,648	11,605
Salesworkers	6,303	6,425	6,400	6,418	6,450	6,520	6,544	6,637	6,603	6,587	6,547	6,567	6,677	6,507	6,585
Clerical workers	18,473	18,564	18,502	18,550	18,436	18,423	18,432	18,155	18,229	18,759	18,482	18,471	18,437	18,819	18,395
Blue-collar workers	31,452	31,261	30,953	30,683	30,344	30,200	30,309	30,416	29,924	29,926	29,716	29,608	29,485	29,143	29,147
Craft and kindred workers	12,787	12,662	12,446	12,411	12,446	12,370	12,454	12,511	12,492	12,316	12,207	12,229	12,342	12,253	12,184
Operatives, except transport	10,565	10,540	10,410	10,220	10,169	9,966	9,955	9,860	9,688	9,585	9,655	9,453	9,257	8,938	8,945
Transport equipment operatives	3,531	3,476	3,580	3,438	3,368	3,415	3,503	3,397	3,400	3,419	3,414	3,439	3,288	3,369	3,342
Nonfarm laborers	4,567	4,583	4,517	4,614	4,361	4,451	4,397	4,648	4,343	4,607	4,441	4,488	4,598	4,583	4,676
Service workers	13,228	13,438	13,525	13,670	13,639	13,709	13,612	13,526	13,555	13,738	13,791	13,834	13,826	14,029	13,725
Farmworkers	2,741	2,749	2,770	2,802	2,660	2,817	2,787	2,710	2,623	2,731	2,680	2,750	2,711	2,714	2,710
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,425	1,464	1,502	1,436	1,352	1,377	1,426	1,416	1,423	1,541	1,431	1,530	1,568	1,538	1,606
Self-employed workers	1,642	1,638	1,631	1,641	1,602	1,574	1,596	1,644	1,664	1,698	1,676	1,674	1,613	1,582	1,616
Unpaid family workers	297	266	261	321	228	380	359	277	270	236	251	250	254	255	221
Nonagricultural industries:															
Wage and salary workers	88,525	89,543	89,460	89,238	88,991	88,759	88,586	88,526	88,322	89,051	88,606	88,541	88,737	88,650	87,995
Government	15,912	15,689	15,491	15,397	15,585	15,578	15,527	15,492	15,453	15,422	15,635	15,443	15,569	15,691	15,420
Private industries	72,612	73,853	73,969	73,841	73,406	73,181	73,059	73,034	72,869	73,629	72,970	73,098	73,168	72,959	72,575
Households	1,192	1,208	1,162	1,204	1,291	1,248	1,161	1,225	1,192	1,202	1,201	1,200	1,242	1,229	1,220
Other	71,420	72,645	72,807	72,637	72,115	71,932	71,898	71,809	71,677	72,427	71,770	71,898	71,927	71,730	71,355
Self-employed workers	7,000	7,097	7,152	7,141	7,057	6,971	7,055	7,126	7,264	7,269	7,318	7,298	7,352	7,478	7,333
Unpaid family workers	413	390	451	425	410	410	406	434	413	382	387	390	409	372	415
PERSONS AT WORK[1]															
Nonagricultural industries	90,209	91,377	91,384	91,323	90,922	90,125	90,892	90,548	90,596	91,282	91,020	90,501	90,508	91,054	90,220
Full-time schedules	73,590	74,339	73,886	73,915	73,360	72,803	73,028	72,649	72,335	73,036	72,662	72,430	72,112	71,700	71,215
Part time for economic reasons	4,064	4,499	5,009	5,026	5,288	5,071	5,563	5,717	5,834	5,763	5,444	5,492	5,648	6,600	6,574
Usually work full time	1,714	1,738	2,006	1,945	2,121	1,783	2,193	2,237	2,223	2,211	2,064	2,001	2,054	2,571	2,514
Usually work part time	2,350	2,761	3,003	3,081	3,167	3,287	3,370	3,480	3,611	3,552	3,380	3,491	3,594	4,029	4,060
Part time for noneconomic reasons	12,555	12,539	12,489	12,382	12,274	12,251	12,300	12,183	12,427	12,483	12,914	12,579	12,748	12,754	12,431

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[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial disputes.

4. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1981			1982									
	1980	1981	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
CHARACTERISTIC															
Total, 16 years and over	7.1	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8	9.8	10.1	10.4
Both sexes, 16 to 19 years	17.8	19.6	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1	24.0	23.7	24.0
Men, 20 years and over	5.9	6.3	6.7	7.1	7.9	7.5	7.6	7.9	8.2	8.4	8.7	8.8	8.9	9.6	9.8
Women, 20 years and over	6.4	6.8	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3	8.1	8.4	8.2	8.3	8.6
White, total	6.3	6.7	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5	8.4	8.7	8.6	9.0	9.3
Both sexes, 16 to 19 years	15.5	17.3	17.7	19.0	19.0	19.6	20.0	19.0	20.8	20.3	19.4	21.0	20.6	20.4	21.7
Men, 16 to 19 years	16.2	17.9	17.9	19.6	20.2	20.8	20.4	20.2	22.3	21.2	21.1	22.6	22.5	22.0	23.1
Women, 16 to 19 years	14.8	16.6	17.5	18.3	17.7	18.2	19.4	17.6	19.2	19.2	17.5	19.2	18.6	18.7	20.1
Men, 20 years and over	5.3	5.6	5.9	6.4	6.9	6.6	6.7	7.0	7.3	7.5	7.7	7.9	7.9	8.6	8.8
Women, 20 years and over	5.6	5.9	6.1	6.3	6.4	6.3	6.6	6.9	7.2	7.3	7.1	7.3	7.1	7.4	7.6
Black, total	14.3	15.6	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7	18.5	18.5	18.8	20.2	20.2
Both sexes, 16 to 19 years	38.5	41.4	45.6	44.1	42.2	41.2	42.3	46.0	48.1	48.8	52.6	49.7	51.6	48.5	46.7
Men, 16 to 19 years	37.5	40.7	41.6	41.9	39.6	36.3	40.7	48.5	48.3	50.6	56.1	48.3	50.1	51.2	48.0
Women, 16 to 19 years	39.8	42.2	49.5	46.6	45.1	46.7	44.2	43.1	47.8	46.9	46.2	51.2	53.1	45.4	45.2
Men, 20 years and over	12.4	13.5	14.7	15.5	16.5	16.3	16.0	16.0	16.9	17.0	17.1	16.8	17.2	19.8	19.8
Women, 20 years and over	11.9	13.4	13.9	13.6	14.1	13.3	14.5	15.4	15.6	15.3	15.0	15.5	15.1	15.7	16.3
Hispanic origin, total	10.1	10.4	10.7	11.5	11.0	12.0	12.6	12.7	12.5	13.9	13.5	13.9	14.6	14.6	15.2
Married men, spouse present	4.2	4.3	4.8	5.2	5.7	5.3	5.3	5.5	6.0	6.1	6.5	6.6	6.7	7.3	7.6
Married women, spouse present	5.8	6.0	6.1	6.5	6.6	6.2	7.0	7.1	7.8	7.4	7.0	7.4	7.1	7.5	7.9
Women who maintain families	9.2	10.4	10.6	10.8	10.5	10.4	10.2	10.6	11.5	11.8	12.4	12.0	11.6	12.4	11.2
Full-time workers	6.9	7.3	7.7	8.1	8.7	8.4	8.5	8.9	9.2	9.2	9.4	9.5	9.6	10.1	10.5
Part-time workers	8.8	9.4	9.5	10.2	9.2	9.6	10.8	10.0	10.9	10.5	9.8	11.4	10.3	10.5	10.1
Unemployed 15 weeks and over	1.7	2.1	2.1	2.2	2.2	2.2	2.5	2.7	2.7	3.0	3.3	3.2	3.3	3.5	3.8
Labor force time lost[1]	7.9	8.5	8.1	9.5	10.1	10.0	9.8	10.4	10.4	11.1	10.2	10.7	10.7	11.7	12.1
OCCUPATION															
White-collar workers	3.7	4.0	4.1	4.2	4.5	4.2	4.6	4.8	4.9	4.8	5.0	4.9	4.8	4.8	5.1
Professional and technical	2.5	2.8	2.6	2.7	3.4	2.9	3.1	3.2	3.2	3.3	3.3	3.3	3.1	3.2	3.5
Managers and administrators, except farm	2.4	2.7	2.8	3.0	3.1	2.7	3.1	3.0	3.3	3.5	3.8	3.7	3.8	3.6	3.6
Salesworkers	4.4	4.6	4.9	5.0	4.9	4.5	4.8	5.8	5.6	5.2	5.8	5.4	5.5	5.4	6.1
Clerical workers	5.3	5.7	6.0	6.0	6.2	6.3	6.7	6.9	7.2	6.8	6.9	6.9	6.7	6.7	7.1
Blue-collar workers	10.0	10.3	10.9	11.8	12.7	12.5	12.5	12.9	13.7	13.5	13.9	14.4	14.2	15.6	15.9
Craft and kindred workers	6.6	7.5	8.3	8.5	9.3	9.0	8.4	9.1	9.6	9.4	10.3	10.9	10.6	11.4	10.9
Operatives, except transport	12.2	12.2	12.8	14.1	15.5	15.4	15.4	15.9	16.9	16.5	16.7	17.4	17.5	20.2	21.1
Transport equipment operatives	8.8	8.7	8.0	10.4	10.5	10.2	10.3	10.4	10.7	11.8	13.0	11.6	12.5	11.6	12.7
Nonfarm laborers	14.6	14.7	15.6	16.0	16.9	16.9	17.9	17.9	19.2	18.3	17.9	18.6	17.4	19.2	19.8
Service workers	7.9	8.9	9.3	9.7	9.6	9.2	9.8	10.2	11.1	11.3	9.9	10.5	10.6	10.7	10.6
Farmworkers	4.6	5.3	6.2	6.2	6.4	6.9	4.9	5.4	5.8	8.3	7.2	6.1	6.9	5.1	6.6
INDUSTRY															
Nonagricultural private wage and salary workers[2]	7.4	7.7	8.1	8.4	9.1	8.8	9.0	9.5	9.9	9.9	10.0	10.2	10.1	10.7	11.1
Construction	14.1	15.6	17.6	17.8	18.1	18.7	18.1	17.9	19.4	18.8	19.2	20.3	20.3	22.6	23.0
Manufacturing	8.5	8.3	8.6	9.4	11.6	10.4	10.6	10.8	11.3	11.6	12.3	12.0	12.1	13.8	14.1
Durable goods	8.9	8.2	8.6	9.5	11.8	11.0	11.3	10.8	11.9	12.2	13.2	12.7	12.9	14.9	16.0
Nondurable goods	7.9	8.4	8.8	9.3	9.6	9.5	9.5	10.8	10.5	10.7	11.0	11.0	10.8	12.3	11.2
Transportation and public utilities	4.9	5.2	4.8	5.5	6.0	6.4	5.9	5.6	7.0	6.5	6.9	8.1	7.0	6.9	8.1
Wholesale and retail trade	7.4	8.1	8.4	8.6	8.9	8.7	9.0	10.3	10.1	10.6	9.7	10.5	9.8	9.8	10.3
Finance and service industries	5.3	5.9	6.2	6.1	6.4	5.9	6.5	6.9	7.0	6.9	6.8	7.0	7.0	6.8	7.1
Government workers	4.1	4.7	4.7	5.2	5.0	4.8	5.2	4.9	5.3	5.0	4.6	4.6	4.6	4.9	4.8
Agricultural wage and salary workers	11.0	12.1	13.4	14.1	14.8	16.2	12.8	14.0	14.6	18.2	16.3	13.8	14.3	12.5	12.6

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[1] Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

[2] Includes mining, not shown separately.

5. Unemployment rates, by sex and age, seasonally adjusted

Sex and age	Annual average		1981			1982									
	1980	1981	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Total, 16 years and over	7.1	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8	9.8	10.1	10.4
16 to 19 years	17.8	19.6	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1	24.0	23.7	24.0
16 to 17 years	20.0	21.4	21.5	22.6	21.9	21.9	22.7	22.7	24.6	25.3	23.7	26.1	25.8	26.9	25.8
18 to 19 years	16.2	18.4	20.0	20.5	21.2	21.3	22.0	21.3	21.9	21.3	21.9	22.8	22.6	21.6	23.0
20 to 24 years	11.5	12.3	12.7	13.0	13.5	13.5	14.1	14.2	14.7	14.3	14.4	14.5	15.2	15.3	15.9
25 years and over	5.1	5.4	5.7	6.0	6.5	6.3	6.4	6.8	7.0	7.1	7.4	7.5	7.3	7.9	8.1
25 to 54 years	5.5	5.8	6.2	6.5	6.9	6.7	6.8	7.3	7.4	7.7	7.7	7.9	7.8	8.6	8.7
55 years and over	3.3	3.6	3.8	3.8	4.1	4.2	4.3	4.6	5.0	4.8	5.4	5.2	5.1	5.1	5.5
Men, 16 years and over	6.9	7.4	7.7	8.3	9.0	8.6	8.7	9.0	9.4	9.6	9.7	9.9	10.0	10.7	10.9
16 to 19 years	18.3	20.1	20.1	21.8	22.3	22.1	22.5	23.5	24.4	24.0	24.2	25.1	25.1	25.3	25.6
16 to 17 years	20.4	22.0	21.1	22.7	22.6	23.0	23.0	24.3	24.7	26.3	25.8	28.1	27.3	29.6	29.0
18 to 19 years	16.7	18.8	19.3	21.0	22.2	21.4	22.1	22.9	24.3	21.9	24.0	23.4	23.4	22.6	23.2
20 to 24 years	12.5	13.2	13.8	14.4	14.8	14.9	15.4	15.7	16.0	15.5	15.8	15.9	16.6	17.4	17.5
25 years and over	4.8	5.1	5.5	5.8	6.5	6.3	6.3	6.6	6.9	6.9	7.5	7.5	7.5	8.2	8.5
25 to 54 years	5.1	5.5	5.9	6.3	6.9	6.7	6.7	7.1	7.2	7.5	8.0	8.1	8.0	9.1	9.1
55 years and over	3.3	3.5	3.7	3.7	4.4	4.3	4.2	4.8	5.1	4.7	5.0	4.8	5.4	5.4	6.1
Women, 16 years and over	7.4	7.9	8.2	8.4	8.5	8.4	8.9	9.0	9.4	9.5	9.1	9.6	9.5	9.5	9.8
16 to 19 years	17.2	19.0	20.7	20.9	20.5	21.2	22.1	20.1	21.3	22.1	20.2	23.1	22.8	21.9	22.3
16 to 17 years	19.6	20.7	21.9	22.5	21.1	20.6	22.5	20.8	24.5	24.1	21.4	24.1	24.2	23.9	22.3
18 to 19 years	15.6	17.9	20.6	19.9	20.0	21.1	21.9	19.6	19.4	20.6	19.7	22.2	21.7	20.6	22.9
20 to 24 years	10.4	11.2	11.5	11.3	12.0	11.9	12.7	12.6	13.3	12.9	12.9	12.9	13.7	12.9	14.0
25 years and over	5.5	5.9	6.1	6.4	6.4	6.3	6.5	7.0	7.2	7.4	7.2	7.4	7.0	7.4	7.5
25 to 54 years	6.0	6.3	6.5	6.8	6.9	6.7	7.0	7.6	7.7	8.0	7.4	7.7	7.5	8.0	8.1
55 years and over	3.2	3.8	4.0	3.8	3.7	4.1	4.3	4.3	4.8	5.0	6.0	6.0	4.6	4.7	4.7

6. Unemployed persons, by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	Annual average		1981			1982									
	1980	1981	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
NUMBER OF UNEMPLOYED															
Lost last job	3,947	4,267	4,573	4,906	5,343	5,205	5,153	5,622	5,906	5,901	6,302	6,177	6,347	7,073	7,477
On layoff	1,488	1,430	1,631	1,826	2,042	1,860	1,740	1,828	1,946	1,969	2,071	2,079	2,180	2,669	2,572
Other job losers	2,459	2,837	2,942	3,079	3,301	3,345	3,413	3,794	3,959	3,932	4,231	4,098	4,167	4,404	4,906
Left last job	891	923	976	916	923	835	964	885	937	874	813	813	806	767	796
Reentered labor force	1,927	2,102	2,178	2,339	2,244	2,079	2,277	2,249	2,365	2,436	2,372	2,526	2,440	2,415	2,217
Seeking first job	872	981	1,002	996	1,021	1,055	1,100	1,044	1,081	1,154	1,088	1,249	1,328	1,326	1,312
PERCENT DISTRIBUTION															
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	51.7	51.6	52.4	53.6	56.1	56.7	54.3	57.4	57.4	56.9	59.6	57.4	58.1	61.1	63.4
On layoff	19.5	17.3	18.7	19.9	21.4	20.3	18.3	18.7	18.9	19.0	19.6	19.3	20.0	23.0	21.8
Other job losers	32.1	34.3	33.7	33.6	34.6	36.5	35.9	38.7	38.5	37.9	40.0	38.1	38.2	38.0	41.6
Job leavers	11.7	11.2	11.2	10.0	9.7	9.1	10.2	9.0	9.1	8.4	7.7	7.5	7.4	6.6	6.7
Reentrants	25.2	25.4	25.0	25.5	23.5	22.7	24.0	22.9	23.0	23.5	22.4	23.5	22.3	20.8	18.8
New entrants	11.4	11.9	11.5	10.9	10.7	11.5	11.6	10.7	10.5	11.1	10.3	11.6	12.2	11.4	11.1
PERCENT OF CIVILIAN LABOR FORCE															
Job losers	3.7	3.9	4.2	4.5	4.9	4.8	4.7	5.1	5.4	5.3	5.7	5.6	5.7	6.4	6.8
Job leavers	.8	.8	.9	.8	.8	.8	.9	.8	.9	.8	.7	.7	.7	.7	.7
Reentrants	1.8	1.9	2.0	2.1	2.1	1.9	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.2	2.0
New entrants	.8	.9	.9	.9	.9	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.2	1.2	1.2

7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1981			1982									
	1980	1981	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Less than 5 weeks	3,295	3,449	3,707	3,852	4,037	3,852	3,789	3,825	3,958	3,874	3,543	3,990	3,923	4,038	3,920
5 to 14 weeks	2,470	2,539	2,686	2,882	3,016	3,068	3,052	3,078	3,304	3,320	3,458	3,161	3,304	3,595	3,517
15 weeks and over	1,871	2,285	2,292	2,364	2,372	2,399	2,724	2,954	3,015	3,286	3,673	3,580	3,631	3,870	4,153
15 to 26 weeks	1,052	1,122	1,166	1,229	1,189	1,210	1,445	1,605	1,508	1,634	1,826	1,792	1,810	1,856	1,927
27 weeks and over	820	1,162	1,126	1,135	1,183	1,190	1,278	1,349	1,507	1,652	1,847	1,788	1,821	2,014	2,226
Mean duration, in weeks	11.9	13.7	13.6	13.1	12.8	13.5	14.1	13.9	14.2	14.6	16.5	15.6	16.2	16.6	17.2
Median duration, in weeks	6.5	6.9	6.8	6.9	6.7	7.2	7.3	7.6	8.5	9.0	9.8	8.3	8.2	9.5	9.6

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by 177,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

Definitions

Employed persons are all persons who received pay (including holiday and sick pay) for any part of the payroll period including the 12th of the month. Persons holding more than one job (about 5 percent of all persons in the labor force) are counted in each establishment which reports them.

Production workers in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 11–15 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities; in wholesale and retail trade; in finance, insurance, and real estate; and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to reflect the effects of changes in consumer prices. The deflator for this series is derived from the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated to underlying wage-rate developments: fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries.

Hours represent the average weekly hours of production or nonsupervisory workers for which pay was received and are different from standard or scheduled hours. **Overtime hours** represent the portion of gross average weekly hours which were in excess of regular hours and for which overtime premiums were paid.

Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of May 1982 data, published in the July 1982 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Complete comparable historical unadjusted and seasonally adjusted data are published in a Supplement to Employment and Earnings (unadjusted data from April 1977 through February 1982 and seasonally adjusted data from January 1974 through February 1982) and in *Employment and Earnings, United States, 1909–78*, BLS Bulletin 1312–11 (for prior periods).

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9–20. See also *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976).

8. Employment by industry, selected years, 1950–81

[Nonagricultural payroll data, in thousands]

Year	Total	Private sector	Goods-producing				Service-producing								
									Wholesale and retail trade					Government		
			Total	Mining	Construction	Manufacturing	Total	Transportation and public utilities	Total	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services	Total	Federal	State and local
1950	45,197	39,170	18,506	901	2,364	15,241	26,691	4,034	9,386	2,635	6,751	1,888	5,357	6,026	1,928	4,098
1955	50,641	43,727	20,513	792	2,839	16,882	30,128	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1960[1]	54,189	45,836	20,434	712	2,926	16,796	33,755	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1964	58,283	48,686	21,005	634	3,097	17,274	37,278	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	50,689	21,926	632	3,232	18,062	38,839	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	53,116	23,158	627	3,317	19,214	40,743	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	54,413	23,308	613	3,248	19,447	42,495	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	56,058	23,737	606	3,350	19,781	44,160	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	58,189	24,361	619	3,575	20,167	46,023	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	58,325	23,578	623	3,588	19,367	47,302	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	58,331	22,935	609	3,704	18,623	48,278	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	60,341	23,668	628	3,889	19,151	50,007	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	63,058	24,893	642	4,097	20,154	51,897	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	64,095	24,794	697	4,020	20,077	53,471	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	62,259	22,600	752	3,525	18,323	54,345	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	64,511	23,352	779	3,576	18,997	56,030	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	67,344	24,346	813	3,851	19,682	58,125	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	71,026	25,585	851	4,229	20,505	61,113	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	73,876	26,461	958	4,463	21,040	63,363	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,147
1980	90,406	74,166	25,658	1,027	4,346	20,285	64,748	5,146	20,310	5,275	15,035	5,160	17,890	16,241	2,866	13,375
1981	91,105	75,081	25,481	1,132	4,176	20,173	65,625	5,157	20,551	5,359	15,192	5,301	18,592	16,024	2,772	13,253

[1] Data include Alaska and Hawaii beginning in 1959.

9. Employment by State

[Nonagricultural payroll data, in thousands]

State	September 1981	August 1982	September 1982 p	State	September 1981	August 1982	September 1982 p
Alabama	1,354.1	1,318.8	1,312.1	Montana	290.4	278.4	285.1
Alaska	186.5	202.2	198.1	Nebraska	631.9	605.1	608.5
Arizona	1,039.5	1,002.8	1,025.2	Nevada	423.1	416.7	418.3
Arkansas	748.0	719.0	731.2	New Hampshire	401.4	400.2	398.5
California	10,107.2	9,901.5	9,957.1	New Jersey	3,106.5	3,100.0	3,085.3
Colorado	1,290.2	1,279.9	1,280.1	New Mexico	479.7	473.5	476.1
Connecticut	1,441.3	1,395.8	1,415.7	New York	7,295.2	7,264.4	7,251.1
Delaware	261.2	258.2	259.4	North Carolina	2,403.3	2,298.3	2,344.4
District of Columbia	603.4	624.6	604.8	North Dakota	252.9	251.1	254.0
Florida	3,897.2	3,702.2	3,744.0	Ohio	4,359.0	4,179.0	4,217.5
Georgia	2,183.7	2,149.1	2,151.1	Oklahoma	1,208.8	1,203.7	1,204.3
Hawaii	398.3	403.3	393.8	Oregon	1,031.8	964.3	975.1
Idaho	335.3	307.6	315.9	Pennsylvania	4,720.4	4,483.3	4,496.1
Illinois	4,782.4	4,613.4	4,589.8	Rhode Island	407.7	392.6	394.7
Indiana	2,141.4	2,006.9	2,028.3	South Carolina	1,196.0	1,159.7	1,172.3
Iowa	1,098.1	1,027.5	1,048.0	South Dakota	239.7	230.7	233.1
Kansas	953.5	906.1	919.9	Tennessee	1,762.5	1,704.9	1,714.1
Kentucky	1,206.1	1,125.2	1,141.9	Texas	6,204.7	6,222.5	6,216.4
Louisiana	1,647.9	1,606.7	1,613.3	Utah	586.8	558.4	564.1
Maine	422.2	422.1	414.1	Vermont	203.7	201.8	203.7
Maryland	1,708.9	1,662.7	1,669.6	Virginia	2,178.9	2,166.4	2,179.3
Massachusetts	2,646.9	2,602.4	2,619.3	Washington	1,606.2	1,546.9	(1)
Michigan	3,411.1	3,187.7	3,223.5	West Virginia	636.4	603.3	598.3
Minnesota	1,786.6	1,708.4	1,713.9	Wisconsin	1,957.9	1,873.0	1,883.4
Mississippi	826.1	782.7	795.9	Wyoming	222.2	215.0	214.2
Missouri	1,989.7	1,857.2	1,870.8	Virgin Islands	38.4	38.0	34.8

[1] Not available.

p = preliminary.

10. Employment by industry division and major manufacturing group, seasonally adjusted

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1981			1982									
	1980	1981	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.p	Oct.p
TOTAL	90,406	91,105	91,224	90,996	90,642	90,460	90,459	90,304	90,083	90,166	89,839	89,535	89,312	89,188	88,925
PRIVATE SECTOR	74,166	75,081	75,307	75,088	74,725	74,596	74,609	74,445	74,231	74,313	74,007	73,900	73,640	73,493	73,208
GOODS-PRODUCING	25,658	25,481	25,383	25,176	24,908	24,684	24,631	24,450	24,289	24,255	23,994	23,840	23,657	23,535	23,279
Mining	1,027	1,132	1,195	1,202	1,206	1,201	1,203	1,197	1,182	1,152	1,124	1,100	1,086	1,074	1,064
Construction	4,346	4,176	4,101	4,071	4,026	3,966	3,974	3,934	3,938	3,988	3,940	3,927	3,899	3,881	3,867
Manufacturing	20,285	20,173	20,097	19,903	19,676	19,517	19,454	19,319	19,169	19,115	18,930	18,813	18,672	18,580	18,348
Production workers	14,214	14,021	13,915	13,717	13,488	13,431	13,290	13,179	13,042	13,008	12,852	12,760	12,647	12,576	12,382
Durable goods	12,187	12,117	12,059	11,901	11,724	11,622	11,575	11,490	11,375	11,332	11,203	11,133	10,993	10,906	10,705
Production workers	8,442	8,301	8,218	8,061	7,885	7,883	7,759	7,685	7,576	7,553	7,443	7,388	7,272	7,201	7,031
Lumber and wood products	690.5	688.7	643	628	615	607	611	607	615	617	615	614	614	615	613
Furniture and fixtures	465.8	467.3	469	462	457	452	449	446	443	443	442	439	443	442	436
Stone, clay, and glass products	662.1	638.2	629	620	610	596	596	590	584	586	580	579	574	573	568
Primary metal industries	1,142.2	1,121.1	1,104	1,082	1,053	1,038	1,024	1,007	976	945	926	906	889	871	843
Fabricated metal products	1,613.1	1,582.4	1,577	1553	1,529	1,515	1,506	1,495	1,481	1,472	1,452	1,446	1,427	1,414	1,386
Machinery, except electrical	2,494.0	2,507.0	2,532	2,511	2,486	2,459	2,446	2,419	2,389	2,377	2,322	2,274	2,230	2,208	2,137
Electric and electronic equipment	2,090.6	2,082.2	2,101	2,077	2,049	2,055	2,048	2,039	2,034	2,034	2,026	2,018	2,011	1,994	1,973
Transportation equipment	1,899.7	1,892.6	1,861	1,830	1,791	1,777	1,778	1,774	1,748	1,755	1,745	1,759	1,719	1,707	1,675
Instruments and related products	711.3	726.8	731	727	725	720	718	716	713	713	708	708	702	700	695
Miscellaneous manufacturing	418.0	410.7	412	411	409	403	400	397	392	390	387	390	384	382	379
Nondurable goods	8,098	8,056	8,038	8,002	7,952	7,895	7,879	7,829	7,794	7,783	7,727	7,680	7,679	7,674	7,643
Production workers	5,772	5,721	5,697	5,656	5,603	5,548	5,531	5,494	5,466	5,455	5,409	5,372	5,375	5,375	5,351
Food and kindred products	1,708.0	1,674.3	1,662	1,664	1,661	1,657	1,663	1,658	1,643	1,652	1,637	1,643	1,628	1,631	1,635
Tobacco manufactures	68.9	68.8	69	69	68	69	68	68	67	67	67	66	65	63	63
Textile mill products	847.7	822.5	814	804	794	780	777	780	773	759	741	741	737	735	738
Apparel and other textile products	1,263.5	1,244.0	1,243	1,235	1,222	1,201	1,201	1,166	1,165	1,165	1,161	1,126	1,145	1,144	1,140
Paper and allied products	692.8	687.8	685	681	677	674	670	669	664	661	658	657	653	657	648
Printing and publishing	1,252.1	1,265.8	1,276	1,276	1,276	1,275	1,276	1,278	1,274	1,274	1,269	1,267	1,280	1,269	1,265
Chemicals and allied products	1,107.4	1,107.3	1,107	1,103	1,100	1,095	1,093	1,088	1,082	1,079	1,073	1,068	1,070	1,066	1,060
Petroleum and coal products	197.9	215.6	215	215	214	210	208	207	206	207	205	205	205	209	208
Rubber and miscellaneous plastics products	726.8	736.1	734	725	716	712	708	703	706	708	704	700	689	694	684
Leather and leather products	232.9	233.0	233	230	224	222	215	213	214	211	212	208	206	206	203
SERVICE-PRODUCING	64,748	65,625	65,831	65,820	65,734	65,776	65,828	65,854	65,794	65,911	65,845	65,695	65,655	65,653	65,646
Transportation and public utilities	5,146	5,157	5,162	5,150	5,128	5,125	5,115	5,100	5,094	5,101	5,078	5,044	5,025	5,032	5,022
Wholesale and retail trade	20,310	20,551	20,654	20,623	20,524	20,630	20,670	20,655	20,584	20,652	20,595	20,615	20,550	20,480	20,438
Wholesale trade	5,275	5,359	5,380	5,375	5,357	5,346	5,343	5,336	5,323	5,331	5,307	5,299	5,278	5,266	5,249
Retail trade	15,035	15,192	15,274	15,248	15,167	15,284	15,327	15,319	15,261	15,321	15,288	15,316	15,272	15,214	15,189
Finance, insurance, and real estate	5,160	5,301	5,325	5,324	5,331	5,326	5,326	5,336	5,335	5,342	5,352	5,359	5,360	5,370	5,362
Services	17,890	18,592	18,773	18,815	18,834	18,831	18,867	18,904	18,929	18,963	18,988	19,042	19,048	19,076	19,107
Government	16,241	16,024	15,917	15,908	15,917	15,864	15,850	15,859	15,852	15,853	15,832	15,635	15,672	15,695	15,717
Federal	2,866	2,772	2,757	2,749	2,756	2,741	2,737	2,736	2,730	2,728	2,739	2,737	2,739	2,734	2,723
State and local	13,375	13,253	13,160	13,159	13,161	13,123	13,113	13,123	13,122	13,125	13,093	12,898	12,933	12,961	12,994

p = preliminary.

11. Hours and earnings, by industry division, selected years, 1950–81

[Gross averages, production or nonsupervisory workers on nonagricultural payrolls]

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Private sector			Mining			Construction			Manufacturing		
1950	$53.13	39.8	$1.335	$67.16	37.9	$1.772	$69.68	37.4	$1.863	$58.32	40.5	$1.440
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1960[1]	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	269.34	40.2	6.70
1980	235.10	35.3	6.66	397.06	43.3	9.17	367.78	37.0	9.94	288.62	39.7	7.27
1981	255.20	35.2	7.25	439.19	43.7	10.05	398.52	36.9	10.80	318.00	39.8	7.99

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950	....	....	....	$44.55	40.5	$1.100	$50.52	37.7	$1.340	....	....	....
1955	....	....	....	55.16	39.4	1.40	63.92	37.6	1.70	....	....	....
1960[1]	....	....	....	66.01	38.6	1.71	75.14	37.2	2.02	....	....	....
1964	$118.78	41.1	$2.89	74.66	37.9	1.97	85.79	37.3	2.30	$70.03	36.1	$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.5	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	351.25	39.6	8.87	176.46	32.2	5.48	209.60	36.2	5.79	190.71	32.6	5.85
1981	382.18	39.4	9.70	190.95	32.2	5.93	229.05	36.3	6.31	208.97	32.6	6.41

[1] Data include Alaska and Hawaii beginning in 1959.

12. Weekly hours, by industry division and major manufacturing group, seasonally adjusted

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981			1982									
	1980	1981	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.p	Oct.p
PRIVATE SECTOR	35.3	35.2	35.1	35.1	35.0	34.4	35.0	34.9	34.9	35.0	34.9	34.9	34.8	34.8	34.7
MANUFACTURING	39.7	39.8	39.5	39.3	39.1	37.6	39.4	39.0	39.0	39.1	39.2	39.2	39.0	38.7	38.7
Overtime hours	2.8	2.8	2.7	2.5	2.4	2.3	2.4	2.3	2.4	2.3	2.4	2.4	2.4	2.3	2.2
Durable goods	40.1	40.2	40.0	39.7	39.5	38.2	39.8	39.5	39.5	39.8	39.7	39.7	39.4	38.9	38.9
Overtime hours	2.8	2.8	2.6	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.0	1.9
Lumber and wood products	38.5	38.7	37.8	37.7	37.7	35.0	37.9	37.6	37.8	38.5	38.7	38.6	38.2	38.3	37.9
Furniture and fixtures	38.1	38.4	38.0	37.6	37.9	33.6	37.7	37.3	37.4	37.5	37.8	37.6	37.9	37.5	37.7
Stone, clay, and glass products	40.8	40.6	40.1	40.1	39.7	38.6	40.1	40.0	40.0	40.2	40.4	40.6	40.3	40.1	40.2
Primary metal industries	40.1	40.5	40.0	39.6	39.2	38.3	39.4	38.8	38.5	38.5	38.0	38.8	38.8	37.9	37.8
Fabricated metal products	40.4	40.3	40.0	39.7	39.5	38.1	39.7	39.5	39.4	39.5	39.4	39.5	39.2	38.8	38.8
Machinery, except electrical	41.0	40.9	40.8	40.7	40.4	39.3	40.7	40.2	40.1	39.8	39.6	39.8	39.5	38.9	39.1
Electric and electronic equipment	39.8	39.9	39.8	39.4	39.5	38.3	39.8	39.4	39.3	39.4	39.5	39.8	39.3	38.8	39.0
Transportation equipment	40.6	40.9	40.6	40.4	39.7	39.0	40.5	40.4	41.1	41.1	41.6	41.0	40.5	39.8	39.7
Instruments and related products	40.5	40.4	40.3	40.2	39.9	39.0	39.9	39.8	39.9	40.2	40.2	40.1	40.1	39.7	39.3
Miscellaneous manufacturing	38.7	38.8	38.9	39.0	38.5	37.3	38.8	38.6	38.5	38.7	38.6	38.7	38.6	38.1	38.3
Nondurable goods	39.0	39.1	38.9	38.7	38.6	38.8	38.9	38.5	38.4	38.5	38.6	38.6	38.5	38.5	38.4
Overtime hours	2.8	2.8	2.8	2.7	2.6	2.5	2.6	2.5	2.6	2.5	2.5	2.6	2.6	2.6	2.5
Food and kindred products	39.7	39.7	39.5	39.5	39.8	39.1	40.2	39.5	39.4	39.4	39.5	39.5	39.1	39.4	39.5
Textile mill products	40.1	39.6	39.0	38.7	37.8	32.3	38.3	37.6	37.7	37.9	37.8	37.7	38.2	38.1	38.0
Apparel and other textile products	35.4	35.7	35.5	35.5	35.1	31.4	35.5	35.0	34.7	34.8	35.1	35.2	35.0	35.2	34.9
Paper and allied products	42.2	42.5	42.4	42.0	41.8	41.3	42.3	41.8	42.1	41.8	42.0	41.9	41.7	41.5	41.4
Printing and publishing	37.1	37.3	37.1	37.1	37.1	36.9	37.4	37.1	37.1	36.8	37.1	37.0	36.8	36.9	36.9
Chemicals and allied products	41.5	41.6	41.5	41.2	41.3	41.0	41.2	40.7	40.7	41.0	41.0	40.9	40.9	41.2	40.8
Petroleum and coal products	41.8	43.2	42.2	42.5	42.7	44.3	43.5	43.5	44.0	44.1	44.1	43.3	43.9	43.4	43.5
Rubber and miscellaneous plastics products	40.0	40.3	39.9	39.6	39.4	37.9	40.0	39.6	39.8	39.9	40.1	40.2	39.7	39.6	39.1
Leather and leather products	36.7	36.8	36.7	36.5	36.1	34.1	35.6	35.8	35.6	35.8	35.7	36.1	36.0	35.7	34.8
WHOLESALE AND RETAIL TRADE	32.2	32.2	32.0	32.1	32.0	31.7	32.0	31.9	31.8	32.0	31.9	31.9	31.9	32.1	32.1
WHOLESALE TRADE	38.5	38.6	38.4	38.5	38.4	38.1	38.5	38.4	38.3	38.5	38.6	38.5	38.5	38.4	38.3
RETAIL TRADE	30.2	30.1	29.9	30.0	29.9	29.7	29.9	29.8	29.8	30.0	29.8	29.9	29.9	30.1	30.2
SERVICES	32.6	32.6	32.6	32.6	32.6	32.5	32.6	32.6	32.7	32.7	32.7	32.8	32.6	32.8	32.7

NOTE: The industry divisions of mining; construction; tobacco manufactures (a major manufacturing group, nondurable goods); transportation and public utilities; and finance, insurance, and real estate are no longer shown. This is because the seasonal component in these is small relative to the trend-cycle, or irregular components, or both, and consequently cannot be precisely separated.

p = preliminary.

13. Hourly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981			1982									
	1980	1981	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.p	Oct.p
PRIVATE SECTOR	$6.66	$7.25	$7.42	$7.47	$7.45	$7.55	$7.54	$7.56	$7.58	$7.63	$7.64	$7.67	$7.70	$7.76	$7.76
Seasonally adjusted	(1)	(1)	7.40	7.45	7.46	7.52	7.53	7.54	7.59	7.65	7.67	7.71	7.74	7.72	7.75
MINING	9.17	10.05	10.25	10.39	10.41	10.65	10.62	10.62	10.85	10.86	10.82	10.91	10.93	11.06	10.97
CONSTRUCTION	9.94	10.80	11.05	11.18	11.26	11.59	11.32	11.33	11.32	11.48	11.41	11.53	11.60	11.70	11.80
MANUFACTURING	7.27	7.99	8.18	8.20	8.27	8.42	8.34	8.37	8.42	8.45	8.50	8.55	8.51	8.59	8.56
Durable goods	7.75	8.53	8.73	8.77	8.83	8.92	8.89	8.91	8.94	9.01	9.06	9.11	9.09	9.16	9.13
Lumber and wood products	6.55	7.00	7.10	7.16	7.16	7.38	7.27	7.28	7.24	7.41	7.59	7.64	7.61	7.66	7.56
Furniture and fixtures	5.49	5.91	6.06	6.05	6.12	6.28	6.19	6.21	6.21	6.23	6.30	6.34	6.39	6.40	6.42
Stone, clay, and glass products	7.50	8.27	8.50	8.54	8.56	8.70	8.62	8.65	8.72	8.80	8.86	8.93	8.93	9.01	8.97
Primary metal industries	9.77	10.81	10.97	11.10	11.08	11.23	11.20	11.15	11.24	11.23	11.31	11.37	11.49	11.55	11.44
Fabricated metal products	7.45	8.20	8.39	8.42	8.53	8.55	8.57	8.64	8.69	8.79	8.83	8.85	8.95	8.90	8.88
Machinery, except electrical	8.00	8.81	9.04	9.08	9.18	9.19	9.20	9.18	9.24	9.26	9.27	9.30	9.33	9.39	9.34
Electric and electronic equipment	6.94	7.62	7.80	7.83	7.90	7.98	7.96	8.01	8.03	8.05	8.09	8.18	8.24	8.32	8.36
Transportation equipment	9.35	10.39	10.74	10.74	10.76	10.79	10.82	10.89	10.89	11.08	11.21	11.25	11.18	11.24	11.29
Instruments and related products	6.80	7.43	7.80	7.88	7.81	7.93	7.94	8.00	8.07	8.16	8.23	8.31	8.40	8.44	8.44
Miscellaneous manufacturing	5.46	5.96	6.05	6.11	6.19	6.27	6.29	6.32	6.35	6.38	6.41	6.40	6.39	6.48	6.51
Nondurable goods	6.55	7.18	7.33	7.38	7.44	7.67	7.54	7.57	7.65	7.66	7.70	7.77	7.74	7.84	7.82
Food and kindred products	6.85	7.43	7.51	7.61	7.67	7.82	7.74	7.79	7.90	7.92	7.90	7.88	7.85	7.90	7.87
Tobacco manufactures	7.74	8.88	8.67	9.04	8.96	9.21	9.56	9.72	10.05	9.93	10.35	10.42	9.53	9.57	9.84
Textile mill products	5.07	5.52	5.72	5.73	5.72	5.76	5.76	5.76	5.79	5.79	5.79	5.81	5.82	5.86	5.86
Apparel and other textile products	4.56	4.96	5.05	5.04	5.04	5.18	5.13	5.15	5.18	5.16	5.18	5.17	5.18	5.20	5.20
Paper and allied products	7.84	8.60	8.82	8.89	8.96	9.06	8.99	9.00	9.11	9.14	9.29	9.41	9.45	9.63	9.56
Printing and publishing	7.53	8.18	8.40	8.42	8.48	8.58	8.56	8.59	8.59	8.61	8.66	8.74	8.79	8.89	8.88
Chemicals and allied products	8.30	9.12	9.37	9.42	9.53	9.68	9.68	9.71	9.81	9.83	9.95	10.02	10.03	10.21	10.26
Petroleum and coal products	10.10	11.38	11.47	11.58	11.59	11.91	12.29	12.32	12.50	12.52	12.53	12.42	12.42	12.62	12.55
Rubber and miscellaneous plastics products	6.52	7.16	7.30	7.31	7.38	7.51	7.49	7.45	7.52	7.56	7.64	7.65	7.64	7.76	7.74
Leather and leather products	4.58	4.99	5.08	5.11	5.15	5.19	5.22	5.24	5.32	5.32	5.36	5.30	5.33	5.40	5.41
TRANSPORTATION AND PUBLIC UTILITIES	8.87	9.70	9.94	10.05	10.06	10.10	10.13	10.07	10.14	10.17	10.20	10.29	10.43	10.44	10.48
WHOLESALE AND RETAIL TRADE	5.49	5.93	6.01	6.04	6.02	6.17	6.16	6.16	6.18	6.20	6.20	6.21	6.22	6.26	6.27
WHOLESALE TRADE	6.96	7.57	7.73	7.79	7.81	7.94	7.94	7.93	7.97	8.03	8.01	8.07	8.11	8.15	8.18
RETAIL TRADE	4.88	5.25	5.29	5.32	5.31	5.43	5.42	5.43	5.44	5.47	5.47	5.48	5.48	5.52	5.52
FINANCE, INSURANCE, AND REAL ESTATE	5.79	6.31	6.43	6.52	6.47	6.56	6.62	6.59	6.64	6.77	6.71	6.78	6.87	6.90	6.93
SERVICES	5.85	6.41	6.58	6.67	6.66	6.79	6.79	6.77	6.81	6.85	6.84	6.87	6.90	6.99	7.03

[1] Not available.

p=preliminary.

14. Hourly Earnings Index, for production workers on private nonagricultural payrolls, by industry

[1977=100]

Industry	Not seasonally adjusted					Seasonally adjusted						
	Oct. 1981	Aug. 1982	Sept. 1982p	Oct. 1982p	Percent change from: Oct. 1981 to Oct. 1982	Oct. 1981	June 1982	July 1982	Aug. 1982	Sept. 1982p	Oct. 1982p	Percent change from: Sept. 1982 to Oct. 1982
PRIVATE SECTOR (in current dollars)	142.0	149.3	150.4	150.7	6.1	142.0	148.1	148.9	149.9	150.0	150.6	0.4
Mining	151.4	161.5	163.2	161.9	6.9	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Construction	136.3	141.6	142.7	143.7	5.4	134.7	139.7	140.6	140.7	140.6	142.0	1.0
Manufacturing	145.4	153.6	154.7	154.8	6.4	145.4	152.5	153.3	154.2	154.7	154.7	.0
Transportation and public utilities	143.0	150.3	151.1	151.8	6.2	142.3	149.1	148.9	150.3	149.6	151.1	1.0
Wholesale and retail trade	140.0	145.9	146.7	146.8	4.9	140.5	145.2	145.7	146.5	146.7	147.3	.4
Finance, insurance, and real estate	140.7	150.1	150.6	151.3	7.5	141.4	147.2	148.6	150.6	151.2	152.0	.5
Services	140.6	148.3	149.6	150.0	6.7	140.8	147.3	148.7	149.7	149.6	150.3	.4
PRIVATE SECTOR (in constant dollars)	92.2	92.7	93.2	(2)	(2)	92.1	93.1	93.0	93.2	93.2	(2)	(2)

[1] This series is not seasonally adjusted because the seasonal component is small relative to the trend-cycle, irregular components, or both, and consequently cannot be separated with sufficient precision.

[2] Not available.

p = preliminary.

15. Weekly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1981			1982									
	1980	1981	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.^{p}	Oct.^{p}
PRIVATE SECTOR															
Current dollars	$235.10	$255.20	$261.18	$262.20	$262.24	$255.95	$262.39	$261.90	$262.27	$266.52	$267.40	$269.98	$271.04	$270.05	$270.74
Seasonally adjusted	(1)	(1)	259.74	261.50	261.10	258.69	263.55	263.15	264.89	267.75	267.68	269.08	269.35	268.86	268.93
Constant (1977) dollars	172.74	170.13	169.49	169.71	169.30	164.70	168.31	168.37	167.80	168.16	167.33	167.90	168.24	167.42	(1)
MINING	367.06	439.19	456.13	461.32	466.37	456.89	463.03	465.16	454.76	454.12	463.10	463.88	463.43	461.20	$458.64
CONSTRUCTION	367.78	398.52	419.62	414.78	417.75	385.95	406.39	419.21	415.44	429.75	427.88	438.14	436.16	431.73	436.60
MANUFACTURING															
Current dollars	288.62	318.00	323.95	325.54	329.97	312.38	326.93	327.27	325.85	329.55	334.05	332.80	331.89	334.15	332.13
Constant (1977) dollars	212.06	212.00	210.22	210.71	213.02	201.02	209.70	210.33	208.48	208.71	209.04	206.84	206.40	207.16	(1)
Durable goods	310.78	342.91	350.07	351.68	356.73	336.28	352.93	352.84	350.45	355.90	360.59	357.11	356.33	357.24	356.98
Lumber and wood products	252.18	270.80	271.22	269.93	272.80	249.71	272.60	273.73	270.05	285.29	287.53	284.90	285.27	285.69	280.55
Furniture and fixtures	209.17	226.94	233.92	230.51	238.07	204.10	231.51	233.50	230.39	231.76	238.77	233.31	243.46	241.92	245.89
Stone, clay, and glass products	306.00	335.76	344.25	345.87	343.26	325.38	337.90	344.27	347.93	355.52	361.49	362.56	362.56	364.00	364.18
Primary metal industries	381.78	437.81	435.51	440.67	438.77	431.23	443.52	434.85	434.99	430.11	439.96	437.75	440.07	440.06	427.86
Fabricated metal products	300.98	330.46	337.28	337.64	345.47	323.19	337.66	342.14	338.91	346.33	349.67	344.27	346.04	346.21	346.32
Machinery except electrical	328.00	360.33	367.93	372.28	381.89	360.25	374.44	370.67	367.75	367.62	367.09	353.63	364.80	368.21	364.26
Electric and electronic equipment	276.21	304.04	311.22	311.63	319.16	304.04	316.81	316.40	313.17	315.56	319.56	319.84	322.18	322.82	326.04
Transportation equipment	379.61	424.95	440.34	438.19	445.46	414.34	437.13	439.96	441.05	455.39	466.34	456.75	447.20	443.98	452.73
Instruments and related products	275.40	300.17	307.04	313.34	317.87	306.10	317.60	320.80	318.77	327.22	330.65	328.25	336.16	335.07	332.54
Miscellaneous manufacturing	211.30	231.25	237.77	241.35	242.03	229.48	241.54	244.58	242.57	245.63	247.43	244.48	246.65	248.83	251.94
Nondurable goods	255.45	280.74	288.60	288.56	291.65	277.65	291.04	289.93	291.47	294.14	297.99	299.15	298.54	303.41	301.85
Food and kindred products	271.95	294.97	296.65	302.88	309.67	302.63	307.29	303.81	306.52	312.05	312.05	312.05	310.86	315.21	310.87
Tobacco manufactures	294.89	344.54	341.60	350.75	341.38	332.49	366.15	362.56	367.83	389.40	397.44	383.46	363.09	379.93	382.71
Textile mill products	203.31	218.59	225.37	224.62	220.79	179.71	219.46	217.15	215.39	219.44	220.60	216.13	222.81	223.85	225.61
Apparel and other textile products	161.42	177.07	180.79	180.43	178.82	155.40	180.58	180.77	178.19	180.08	183.89	183.02	183.37	182.52	183.04
Paper and allied products	330.85	365.50	373.97	376.06	382.59	374.18	377.58	376.55	380.80	379.31	389.76	391.46	393.12	401.57	395.37
Printing and publishing	279.36	305.11	312.48	314.07	321.39	312.31	317.58	318.60	316.11	315.99	319.55	322.51	326.11	329.82	327.82
Chemicals and allied products	344.45	379.39	388.86	391.87	398.35	394.94	397.85	395.20	399.27	401.06	406.96	407.81	408.22	420.65	418.61
Petroleum and coal products	422.18	491.62	494.36	496.10	493.73	514.51	518.64	522.37	550.00	549.63	553.83	546.48	546.48	565.38	557.22
Rubber and miscellaneous plastics products	260.80	288.55	293.46	291.67	295.84	283.88	298.65	295.77	297.04	300.13	306.36	302.94	303.31	307.30	304.96
Leather and leather products	168.09	183.63	186.80	187.03	187.46	172.83	184.27	186.54	187.26	191.52	198.71	191.33	192.96	191.70	188.81
TRANSPORTATION AND PUBLIC UTILITIES	351.25	382.18	388.65	393.96	395.36	388.85	397.10	392.73	393.43	394.60	399.84	403.37	409.90	406.12	406.62
WHOLESALE AND RETAIL TRADE	176.46	190.95	192.32	192.66	194.45	191.89	194.66	194.66	195.91	197.78	199.02	202.45	202.77	200.95	201.27
WHOLESALE TRADE	267.96	292.20	298.38	300.69	302.25	300.13	303.31	303.72	304.45	308.35	309.19	312.31	313.05	312.96	314.16
RETAIL TRADE	147.38	158.03	157.64	158.54	160.89	157.47	159.35	159.64	161.02	163.01	164.65	168.24	168.24	166.70	166.15
FINANCE, INSURANCE, AND REAL ESTATE	209.60	229.05	232.77	236.02	234.21	237.47	239.64	239.22	240.37	245.75	242.23	245.44	249.38	248.40	250.17
SERVICES	190.71	208.97	213.85	216.78	217.12	219.32	220.66	220.03	221.33	222.63	224.35	227.40	227.70	228.57	229.18

[1] Not available.

p = preliminary.

UNEMPLOYMENT INSURANCE DATA

NATIONAL UNEMPLOYMENT INSURANCE DATA are compiled monthly by the Employment and Training Administration of the U.S. Department of Labor from monthly reports of unemployment insurance activity prepared by State agencies. Railroad unemployment insurance data are prepared by the U.S. Railroad Retirement Board.

Definitions

Data for **all programs** represent an unduplicated count of insured unemployment under State programs, Unemployment Compensation for Ex-Servicemen, and Unemployment Compensation for Federal Employees, and the Railroad Insurance Act.

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

An **application** for benefits is filed by a railroad worker at the beginning of his first period of unemployment in a benefit year; no application is required for subsequent periods in the same year. **Number of payments** are payments made in 14-day registration periods. The **average amount of benefit payment** is an average for all compensable periods, not adjusted for recovery of overpayments or settlement of underpayments. However, **total benefits** paid have been adjusted.

16. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1981				1982								
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept. p
All programs:													
Insured unemployment	2,680	2,753	3,228	3,935	4,681	4,723	4,892	4,760	4,388	4,329	4,495	4,398	4,263
State unemployment insurance program:[1]													
Initial claims[2]	1,681	1,986	2,286	3,272	3,328	2,272	2,418	2,347	1,989	2,399	2,665	2,358	2,350
Insured unemployment (average weekly volume)	2,488	2,582	3,061	3,778	4,470	4,376	4,282	4,067	3,729	3,707	3,910	3,831	3,713
Rate of insured unemployment	2.9	3.0	3.5	4.3	5.1	5.0	4.9	4.6	4.3	4.3	4.6	4.4	4.2
Weeks of unemployment compensated	9,565	9,424	10,052	14,592	15,962	15,631	18,144	16,158	13,679	14,648	14,655	15,015	14,595
Average weekly benefit amount for total unemployment	$107.39	$108.92	$110.52	$112.83	$114.83	$116.95	$117.10	$117.61	$118.08	$118.64	$117.28	$121.52	$120.62
Total benefits paid	$1,001,020	$997,757	$1,080,810	$1,592,546	$1,764,206	$1,781,830	$2,072,642	$1,849,881	$1,573,444	r$1,692,150	$1,679,378	$1,746,195	$1,714,634
State unemployment insurance program:[1] (Seasonally adjusted data)													
Initial claims[2]	2,099	2,187	2,233	2,106	2,304	2,354	2,521	2,442	2,379	2,528	2,317	2,814	2,912
Insured unemployment (average weekly volume)	2,985	3,171	3,403	3,593	3,604	3,644	3,777	3,939	3,925	3,995	3,959	4,137	4,447
Rate of insured unemployment	3.4	3.6	3.9	4.1	4.1	4.2	4.3	4.5	4.5	4.6	4.5	4.7	5.1
Unemployment compensation for ex-servicemen:[3]													
Initial claims[1]	15	11	9	11	8	8	10	9	8	10	10	11	10
Insured unemployment (average weekly volume)	34	26	22	19	16	13	11	10	9	8	7	7	8
Weeks of unemployment compensated	153	116	91	93	65	49	48	37	31	29	25	24	25
Total benefits paid	$17,144	$12,952	$10,043	$10,155	$7,098	$5,304	$5,141	$4,013	$3,395	$3,314	$2,821	$2,793	$2,927
Unemployment compensation for Federal civilian employees:[4]													
Initial claims	18	20	16	17	17	12	13	13	11	14	13	12	13
Insured unemployment (average weekly volume)	29	32	36	39	40	40	38	33	29	28	29	27	26
Weeks of unemployment compensated	100	112	127	174	162	154	172	146	120	123	120	118	110
Total benefits paid	$10,495	$11,719	$13,491	$18,891	$18,040	$17,517	$19,677	$16,806	$13,526	$13,922	$13,445	$13,140	$12,230
Railroad unemployment insurance:													
Applications	15	21	13	19	22	11	9	5	5	36	68	68	14
Insured unemployment (average weekly volume)	34	40	44	54	75	67	65	57	44	44	55	55	61
Number of payments	74	86	83	117	153	140	154	130	95	93	100	100	137
Average amount of benefit payment	$207.98	$197.26	$207.08	$212.33	$213.39	$214.07	$215.71	$209.48	$200.75	$199.15	$202.54	$202.54	$216.14
Total benefits paid	15,046	15,994	$16,377	$25,292	$30,544	$28,011	$33,853	$26,262	$19,110	$18,574	$17,998	$17,998	$31,123
Employment service:[5]													
New applications and renewals	16,502	....	....	4,081	....	....	7,439	....	....	10,965	....	....	....
Nonfarm placements	3,509	....	....	731	....	....	1,232	....	....	1,902	....	....	....

[1] Initial claims and State insured unemployment include data under the program for Puerto Rican sugarcane workers.

[2] Excludes transition claims under State programs.

[3] Excludes data on claims and payments made jointly with other programs.

[4] Excludes data on claims and payments made jointly with State programs.

[5] Cumulative total for fiscal year (October 1-September 30). Data computed quarterly.

NOTE: Data for Puerto Rico and the Virgin Islands included. Dashes indicate data not available.

r=revised.

p=preliminary.

PRICE DATA

PRICE DATA are gathered by the Bureau of Labor Statistics from retail and primary markets in the United States. Price indexes are given in relation to a base period (1967 = 100, unless otherwise noted).

Definitions

The Consumer Price Index is a monthly statistical measure of the average change in prices in a fixed market basket of goods and services. Effective with the January 1978 index, the Bureau of Labor Statistics began publishing CPI's for two groups of the population. One index, a new CPI for All Urban Consumers, covers 80 percent of the total noninstitutional population; and the other index, a revised CPI for Urban Wage Earners and Clerical Workers, covers about half the new index population. The All Urban Consumers index includes, in addition to wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctor's and dentist's fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items is kept essentially unchanged between major revisions so that only price changes will be measured. Prices are collected from over 18,000 tenants, 24,000 retail establishments, and 18,000 housing units for property taxes in 85 urban areas across the country. All taxes directly associated with the purchase and use of items are included in the index. Because the CPI's are based on the expenditures of two population groups in 1972–73, they may not accurately reflect the experience of individual families and single persons with different buying habits.

Though the CPI is often called the "Cost-of-Living Index," it measures only price change, which is just one of several important factors affecting living costs. Area indexes do not measure differences in the level of prices among cities. They only measure the average change in prices for each area since the base period.

Producer Price Indexes measure average changes in prices received in primary markets of the United States by producers of commodities in all stages of processing. The sample used for calculating these indexes contains about 2,800 commodities and about 10,000 quotations per month selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The universe includes all commodities produced or imported for sale in commercial transactions in primary markets in the United States.

Producer Price Indexes can be organized by stage of processing or by commodity. The stage of processing structure organizes products by degree of fabrication (that is, finished goods, intermediate or semifinished goods, and crude materials). The commodity structure organizes products by similarity of end-use or material composition.

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States, from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire. Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

In calculating Producer Price Indexes, price changes for the various commodities are averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1972. The detailed data are aggregated to obtain indexes for stage of processing groupings, commodity groupings, durability of product groupings, and a number of special composite groupings.

Price indexes for the output of selected SIC industries measure average price changes in commodities produced by particular industries, as defined in the *Standard Industrial Classification Manual 1972* (Washington, U.S. Office of Management and Budget, 1972). These indexes are derived from several price series, combined to match the economic activity of the specified industry and weighted by the value of shipments in the industry. They use data from comprehensive industrial censuses conducted by the U.S. Bureau of the Census and the U.S. Department of Agriculture.

Notes on the data

Beginning with the May 1978 issue of the *Review*, regional CPI's cross classified by population size, were introduced. These indexes will enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes will be published bimonthly. (See table 19.)

For further details about the new and the revised indexes and a comparison of various aspects of these indexes with the old unrevised CPI, see *Facts About the Revised Consumer Price Index*, a pamphlet in the Consumer Price Index Revision 1978 series. See also *The Consumer Price Index: Concepts and Content Over the Years*, Report 517, revised edition (Bureau of Labor Statistics, May 1978).

For interarea comparisons of living costs at three hypothetical standards of living, see the family budget data published in the *Handbook of Labor Statistics, 1977*, Bulletin 1966 (Bureau of Labor Statistics, 1977), tables 122–133. Additional data and analysis on price changes are provided in the *CPI Detailed Report* and *Producer Prices and Price Indexes*, both monthly publications of the Bureau.

As of January 1976, the Wholesale Price Index (as it was then called) incorporated a revised weighting structure reflecting 1972 values of shipments. From January 1967 through December 1975, 1963 values of shipments were used as weights.

For a discussion of the general method of computing consumer, producer, and industry price indexes, see *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976), chapters 13–15. See also John F. Early, "Improving the measurement of producer price change," *Monthly Labor Review*, April 1978, pp. 7–15. For industry prices, see also Bennett R. Moss, "Industry and Sector Price Indexes," *Monthly Labor Review*, August 1965, pp. 974–82.

17. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967–81

[1967=100]

Year	All items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	116.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.2	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	6.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	267.2	11.3	203.7	8.5	213.6	8.8
1981	272.3	10.2	267.8	7.7	293.2	11.4	186.6	5.2	281.3	12.3	295.1	10.4	219.0	7.5	233.3	9.2

18. Consumer Price Index for All Urban Consumers and revised CPI for Urban Wage Earners and Clerical Workers, U.S. city average—general summary and groups, subgroups, and selected items

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
All items	279.3	284.3	287.1	290.6	292.2	292.8	293.3	279.1	283.7	286.5	290.1	291.8	292.4	292.8
Food and beverages	270.7	276.5	278.1	280.2	280.8	279.9	280.1	271.0	276.8	278.4	280.5	281.2	280.2	280.4
Housing	303.7	309.4	313.8	317.5	319.2	320.1	319.7	303.6	309.2	313.7	317.5	319.3	320.5	320.0
Apparel and upkeep	190.7	191.9	191.5	190.8	189.7	191.8	194.9	190.5	191.2	190.6	189.6	188.7	190.7	194.1
Transportation	285.2	282.9	285.6	292.8	296.1	296.2	295.3	286.6	284.3	287.1	294.5	297.9	298.0	296.9
Medical care	301.7	321.7	323.8	326.4	330.0	333.3	336.0	300.9	320.2	322.3	324.8	328.1	331.3	333.9
Entertainment	224.0	233.9	234.4	235.6	236.6	237.4	238.3	221.5	230.5	231.1	232.3	233.5	233.9	234.8
Other goods and services	243.0	253.8	255.0	255.8	257.2	258.3	266.6	239.3	250.9	252.4	253.1	254.5	255.7	262.8
Commodities	257.7	258.9	261.5	265.1	266.5	266.4	266.6	258.2	259.2	261.7	265.4	266.9	266.8	267.0
Commodities less food and beverages	247.6	247.0	249.8	254.0	255.7	255.9	256.1	248.4	247.2	250.1	254.5	256.3	256.5	256.8
Nondurables less food and beverages	265.8	259.7	261.0	266.3	268.2	268.8	269.9	268.5	261.3	262.6	268.2	270.3	270.7	271.8
Durables	232.6	235.8	239.8	243.2	244.7	244.6	244.1	231.5	234.8	238.9	242.3	243.9	244.0	243.6
Services	317.3	328.4	331.8	334.9	337.0	338.9	339.7	317.7	329.1	332.4	335.7	337.9	340.0	340.5
Rent, residential	211.9	220.1	221.8	222.6	224.8	226.0	226.9	211.5	219.6	221.3	222.1	224.3	225.5	226.4
Household services less rent	387.4	397.3	403.0	407.7	409.4	411.7	410.4	392.2	402.3	408.2	413.3	415.3	418.1	416.5
Transportation services	277.7	290.3	291.3	294.7	297.2	297.8	298.7	276.3	289.2	290.0	293.2	295.7	298.5	298.9
Medical care services	326.1	348.0	350.2	353.0	357.3	361.0	364.0	324.7	345.8	348.0	350.7	354.7	358.3	361.1
Other services	245.8	255.3	255.9	257.0	258.0	259.7	266.3	243.6	253.8	254.4	255.5	256.6	258.4	264.0
Special indexes:														
All items less food	278.2	282.9	286.0	289.7	291.5	292.5	292.9	278.2	282.5	285.6	289.4	291.4	292.4	292.8
All items less mortgage interest costs	262.9	267.9	270.3	273.6	275.1	275.6	276.7	263.3	267.9	270.3	273.7	275.3	275.8	276.7
Commodities less food	245.5	245.0	247.8	251.9	253.5	253.8	253.9	246.3	245.3	248.1	252.4	254.1	254.4	254.7
Nondurables less food	260.3	255.0	256.2	261.2	263.0	263.6	264.6	262.9	256.6	257.8	263.0	265.0	265.4	266.5
Nondurables less food and apparel	299.1	291.4	293.4	301.0	304.3	304.2	304.2	301.3	292.3	294.4	302.4	305.8	305.5	305.6
Nondurables	269.5	269.3	270.7	274.4	275.7	275.5	276.2	270.7	270.1	271.5	275.4	276.8	276.5	277.2
Services less rent	337.5	349.1	352.8	356.5	358.5	360.5	361.3	338.3	350.2	353.8	357.7	359.9	362.2	362.5
Services less medical care	314.1	324.0	327.5	330.7	332.5	334.1	334.8	314.6	324.9	328.3	331.7	333.6	335.6	335.8
Domestically produced farm foods	260.8	264.5	267.1	270.3	270.7	268.4	268.0	258.9	263.5	266.0	269.2	269.7	267.4	267.0
Selected beef cuts	277.9	275.1	281.6	289.1	287.4	280.8	279.3	279.7	276.4	283.1	290.6	288.8	281.9	280.7
Energy	417.1	395.7	402.1	418.6	424.5	424.5	424.2	420.1	396.9	403.1	420.4	426.5	426.1	425.6
All items less energy	268.6	275.7	278.3	280.7	282.0	282.7	283.1	267.5	274.5	277.0	279.4	280.8	281.5	281.9
All items less food and energy	264.8	272.2	274.9	277.3	278.7	279.8	280.4	263.6	270.9	273.6	276.0	277.6	278.7	279.2
Commodities less food and energy	222.9	227.2	229.9	232.1	233.1	233.6	234.1	222.1	226.4	229.1	231.3	232.4	232.8	233.6
Energy commodities	449.3	406.6	410.2	430.8	438.2	436.6	433.3	450.0	406.9	410.5	431.6	439.0	437.3	433.8
Services less energy	313.6	324.5	327.2	329.9	331.8	333.6	334.2	314.0	325.2	327.9	330.6	332.6	334.7	334.8
Purchasing power of the consumer dollar, 1967 = $1	$0.358	$0.352	$0.348	$0.344	$0.342	$0.342	$0.341	$0.358	$0.352	$0.349	$0.345	$0.343	$0.342	$0.342

18. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
FOOD AND BEVERAGES	270.7	276.5	278.1	280.2	280.8	279.9	280.1	271.0	276.8	278.4	280.5	281.2	280.2	280.4
Food	278.0	283.9	285.5	287.8	288.5	287.4	287.6	278.1	284.1	285.7	288.0	288.6	287.5	287.7
Food at home	273.2	277.9	279.8	282.6	282.8	280.8	280.6	272.3	277.0	278.8	281.6	281.9	279.8	279.7
Cereals and bakery products	274.3	281.7	283.3	283.6	284.3	284.8	284.6	273.2	280.4	282.0	282.3	283.0	283.4	283.4
Cereals and cereal products (12/77 = 100)	150.1	153.6	154.5	154.5	154.8	154.5	154.3	151.2	154.6	155.4	155.5	155.8	155.5	155.2
Flour and prepared flour mixes (12/77 = 100)	139.5	139.7	141.6	142.1	143.5	141.6	141.4	141.1	140.1	142.1	142.5	144.0	142.1	141.8
Cereal (12/77 = 100)	155.7	165.4	165.7	166.1	166.3	168.5	168.9	157.2	167.4	167.8	168.2	168.5	168.6	169.0
Rice, pasta, and cornmeal (12/77 = 100)	151.6	149.6	150.2	149.4	148.9	149.3	148.2	152.6	150.8	151.5	150.6	150.0	150.5	149.4
Bakery products (12/77 = 100)	143.5	147.5	148.3	148.6	149.0	149.4	149.4	142.4	146.3	147.2	147.4	147.8	148.1	148.2
White bread	238.2	242.8	243.8	242.4	246.1	246.6	246.1	235.9	238.8	240.0	238.3	241.9	242.5	241.9
Other breads (12/77 = 100)	141.5	145.2	146.3	145.6	145.1	146.2	147.1	143.4	147.1	148.2	147.5	147.0	148.2	149.0
Fresh biscuits, rolls, and muffins (12/77 = 100)	143.3	147.6	149.7	149.9	148.9	150.5	149.5	140.1	143.8	146.0	149.2	145.4	146.6	145.8
Fresh cakes and cupcakes (12/77 = 100)	144.4	148.4	149.0	149.2	148.9	149.5	150.3	142.3	146.8	147.4	147.5	147.2	147.6	148.7
Cookies (12/77 = 100)	143.9	150.2	150.5	150.7	150.0	149.6	150.9	144.6	151.2	151.4	151.5	150.9	150.6	152.1
Crackers, bread, and cracker products (12/77 = 100)	132.0	137.3	139.6	140.9	141.8	141.3	140.8	132.2	138.7	141.0	142.3	143.2	142.6	142.3
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	144.3	146.8	147.3	148.9	148.5	148.9	149.2	144.8	149.3	149.9	151.5	151.1	151.5	151.8
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	148.0	153.4	153.6	156.3	156.2	156.6	154.7	142.1	146.5	146.7	149.4	149.2	149.5	148.1
Meats, poultry, fish, and eggs	257.7	258.3	261.0	266.0	268.5	265.4	267.8	257.5	257.8	260.7	265.8	268.3	265.1	267.7
Meats, poultry, and fish	263.4	264.2	268.2	274.3	276.2	273.7	275.3	263.2	263.6	267.7	273.9	275.8	273.3	275.1
Meats	263.4	263.6	269.7	277.2	278.8	276.5	278.4	263.3	262.8	269.0	276.5	278.2	275.8	277.9
Beef and veal	277.1	274.8	281.1	288.2	286.7	280.5	279.1	278.3	275.3	281.9	289.0	287.4	280.8	279.8
Ground beef other than canned	270.3	266.9	269.4	274.6	272.5	268.1	265.4	273.8	267.9	270.7	275.9	273.9	269.0	267.0
Chuck roast	289.4	285.4	287.2	295.4	296.2	289.7	286.9	299.9	294.1	296.2	304.9	305.3	298.9	295.9
Round roast	244.1	244.9	252.4	257.0	251.8	245.0	245.4	249.1	247.9	255.9	260.1	254.7	247.9	249.2
Round steak	255.9	262.8	269.2	278.8	271.2	263.4	262.0	252.5	260.8	267.8	277.2	269.4	261.1	260.6
Sirloin steak	281.9	271.1	282.3	294.1	295.6	285.5	285.2	281.9	272.4	283.8	295.5	298.0	286.8	286.7
Other beef and veal (12/77 = 100)	164.9	163.7	169.0	173.3	173.3	169.7	169.3	162.8	162.1	167.5	171.9	171.7	168.0	167.6
Pork	238.1	241.6	249.9	259.5	265.4	268.2	277.1	239.4	241.0	249.2	258.9	264.9	267.6	276.3
Bacon	237.1	255.9	267.7	280.7	283.9	295.6	315.5	241.1	259.7	271.9	285.3	288.7	300.4	320.7
Chops	225.1	223.4	230.0	241.2	248.9	248.0	252.5	224.7	221.7	228.2	239.6	247.3	246.3	250.6
Ham other than canned (12/77 = 100)	106.8	105.4	111.1	112.6	115.3	116.8	122.1	105.6	102.8	108.3	109.6	112.4	113.8	119.1
Sausage	300.7	305.7	313.3	326.3	331.9	332.2	341.2	302.3	306.3	314.2	327.2	332.9	333.5	342.5
Canned ham	239.5	245.6	249.9	253.2	255.3	257.6	259.7	242.9	248.9	253.2	256.4	258.7	261.1	263.5
Other pork (12/77 = 100)	135.4	135.2	138.9	145.4	150.3	150.8	153.8	136.7	134.5	138.2	144.7	149.5	150.0	153.0
Other meats	260.7	262.8	264.0	268.5	272.0	272.8	272.1	258.7	261.8	263.2	267.8	271.3	272.3	271.7
Frankfurters	256.4	259.5	262.7	268.8	274.2	275.6	275.3	259.1	258.4	261.8	268.3	273.4	274.9	274.7
Bologna, liverwurst, and salami (12/77 = 100)	147.5	150.2	150.7	154.6	156.5	157.5	156.6	144.8	150.3	150.7	154.6	156.6	157.6	156.6
Other lunchmeats (12/77 = 100)	131.8	133.2	134.3	135.5	137.3	138.3	138.9	129.5	131.2	132.3	133.4	135.1	136.1	136.7
Lamb and organ meats (12/77 = 100)	144.4	142.6	141.2	143.1	143.9	142.3	140.5	146.0	145.6	144.4	146.5	147.3	145.6	143.6
Poultry	199.7	193.3	196.0	197.5	199.6	196.2	196.2	198.1	191.5	194.1	195.8	197.8	194.4	194.2
Fresh whole chicken	197.3	194.1	195.8	199.1	201.2	193.8	194.8	194.0	192.0	194.7	197.0	198.8	191.8	192.5
Fresh and frozen chicken parts (12/77 = 100)	130.5	127.6	128.3	129.3	129.4	128.2	127.1	130.1	125.9	126.5	127.5	127.9	126.5	125.4
Other poultry (12/77 = 100)	129.9	121.3	124.3	124.6	127.3	127.7	127.9	129.6	120.8	123.9	124.3	128.9	127.4	127.4
Fish and seafood	362.6	382.0	366.3	365.2	370.2	367.6	369.4	358.6	381.4	365.0	364.2	368.7	365.8	368.4
Canned fish and seafood (12/77 = 100)	140.9	141.5	139.8	139.9	140.5	139.4	139.3	139.4	140.8	139.2	139.4	139.9	138.8	138.7
Fresh and frozen fish and seafood (12/77 = 100)	138.5	147.9	139.4	138.6	141.3	140.4	141.5	134.9	148.0	138.9	138.3	140.8	139.7	141.3
Eggs	188.8	186.9	172.3	162.5	173.6	161.2	175.2	189.5	187.9	173.4	163.4	174.7	162.3	176.1
Dairy products	244.3	247.5	247.0	246.3	247.5	247.5	247.0	244.1	248.8	248.3	245.7	246.8	246.8	248.3
Fresh milk and cream (12/77 = 100)	134.7	135.9	135.7	135.2	135.6	135.4	135.1	134.3	135.3	135.1	134.7	135.1	134.8	134.5
Fresh whole milk	220.0	222.2	222.0	221.3	221.6	221.2	220.8	219.4	221.3	221.1	220.4	220.7	220.3	219.9
Other fresh milk and cream (12/77 = 100)	135.4	136.2	135.7	135.4	136.2	136.0	135.6	135.3	135.7	135.2	134.9	135.7	135.5	135.0
Processed dairy products (12/77 = 100)	143.0	145.6	145.2	144.9	145.9	146.3	146.1	143.4	145.9	145.5	145.2	146.2	146.6	146.3
Butter	247.1	250.1	251.1	250.9	251.1	252.1	252.2	249.9	252.7	253.7	253.4	253.7	254.6	254.7
Cheese (12/77 = 100)	140.8	143.7	144.0	143.2	144.2	144.8	144.9	140.9	144.0	144.3	143.6	144.5	145.1	145.2
Ice cream and related products (12/77 = 100)	148.7	150.9	148.7	149.6	150.4	150.6	149.3	149.1	150.2	147.9	148.7	149.6	149.6	148.4
Oth~r dairy products (12/77 = 100)	137.3	139.9	139.7	138.7	141.3	140.7	141.1	137.6	140.8	140.4	139.4	142.0	141.8	141.8
Fruits and vegetables	281.6	294.0	297.9	305.6	299.7	291.4	284.1	276.3	290.3	293.6	301.0	295.3	286.7	278.8
Fresh fruits and vegetables	286.9	304.1	311.7	325.9	313.8	296.9	283.5	278.2	298.9	305.1	318.6	307.1	289.7	275.2
Fresh fruits	306.4	306.7	318.8	340.8	332.4	336.1	329.0	293.7	295.5	306.9	327.0	320.5	323.2	313.6
Apples	262.9	287.5	299.8	321.4	331.8	314.5	285.5	261.8	287.8	300.1	321.9	333.3	316.7	286.6
Bananas	250.7	268.5	261.6	267.9	245.4	233.7	240.7	251.3	266.1	259.3	265.5	243.6	231.3	238.5
Oranges	346.2	330.8	362.1	406.8	438.2	473.0	516.3	314.6	300.2	328.3	367.5	399.9	433.5	466.8
Other fresh fruits (12/77 = 100)	168.4	163.4	168.2	177.1	161.6	163.9	152.1	161.5	157.6	162.4	170.3	156.1	158.1	146.4
Fresh vegetables	268.6	301.8	305.1	311.9	296.4	260.2	241.0	264.4	302.0	303.7	311.1	295.0	259.6	240.6
Potatoes	329.1	306.1	320.3	344.9	370.9	328.1	272.4	316.8	300.8	313.6	339.7	368.0	323.4	269.6
Lettuce	293.5	355.2	291.6	269.1	254.5	246.3	236.1	292.9	358.6	293.5	270.0	253.0	247.5	237.9
Tomatoes	193.9	220.5	226.5	275.6	270.2	194.3	184.9	291.3	224.9	230.6	279.9	274.9	198.2	187.9
Other fresh vegetables (12/77 = 100)	137.9	168.3	179.3	177.5	156.6	138.3	134.0	136.6	166.7	178.6	177.0	154.8	137.8	133.5
Processed fruits and vegetables	278.3	285.5	285.4	285.9	°286.8	288.0	287.4	276.7	283.3	283.3	283.9	284.8	285.9	285.3
Processed fruits (12/77 = 100)	143.7	148.2	148.3	148.0	148.5	148.7	149.0	143.7	147.7	147.9	147.6	148.1	148.2	148.6
Frozen fruit and fruit juices (12/77 = 100)	143.6	147.1	145.7	144.4	143.5	142.8	144.1	142.8	146.1	144.6	143.4	142.6	141.7	143.2
Fruit juices other than frozen (12/77 = 100)	147.5	151.5	152.2	151.7	152.2	153.0	152.0	147.8	150.4	151.0	150.7	151.0	151.9	151.0
Canned and dried fruits (12/77 = 100)	139.8	145.6	146.4	147.0	148.8	148.9	149.8	140.1	146.2	147.0	147.6	149.4	149.6	150.4
Processed vegetables (12/77 = 100)	135.9	138.6	138.5	139.3	139.7	140.7	139.8	134.8	137.5	137.4	138.2	138.6	139.6	138.6
Frozen vegetables (12/77 = 100)	134.9	144.0	143.9	145.6	146.7	147.7	148.1	136.6	145.3	145.2	146.9	148.0	149.0	149.5

18. Continued—Consumer Price Index—U.S. city average

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
FOOD AND BEVERAGES—Continued														
Food—Continued														
Food at home—Continued														
Fruits and vegetables—Continued														
Cut corn and canned beans except lima (12/77=100)	136.8	140.5	140.7	141.1	141.0	143.6	141.3	135.1	137.9	138.5	138.8	138.6	141.2	138.8
Other canned and dried vegetables (12/77=100)	135.6	135.0	134.6	135.2	135.4	135.6	134.8	133.8	133.5	133.2	133.8	134.1	134.2	133.3
Other foods at home	325.7	331.6	332.6	332.6	332.2	333.3	333.6	326.2	332.6	333.5	333.5	333.1	334.0	334.5
Sugar and sweets	361.4	365.3	365.7	368.8	369.5	370.1	371.2	363.1	365.2	365.6	368.9	369.7	370.3	371.3
Candy and chewing gum (12/77=100)	146.8	150.9	150.0	150.4	150.5	150.0	149.7	147.6	150.8	149.9	150.5	150.6	150.1	149.8
Sugar and artificial sweeteners (12/77=100)	163.0	159.9	160.5	161.4	164.6	166.7	167.5	164.9	161.1	161.8	162.8	166.1	168.2	169.0
Other sweets (12/77=100)	145.3	147.2	148.9	148.9	149.8	149.6	151.1	143.8	145.3	147.0	148.9	147.9	147.5	148.9
Fats and oils (12/77=100)	268.5	260.4	260.6	260.7	259.3	258.3	258.4	267.4	260.4	260.6	260.7	259.3	258.2	258.3
Margarine	256.7	258.6	259.7	261.2	258.4	257.9	259.3	254.5	259.1	259.3	260.8	258.0	257.3	258.5
Nondairy substitutes and peanut butter (12/77=100)	178.5	157.3	156.0	156.5	154.9	154.2	151.2	177.2	155.6	154.2	154.9	153.1	152.4	148.5
Other fats, oils, and salad dressings (12/77=100)	129.6	129.0	129.6	129.1	129.2	128.5	129.4	129.2	129.5	130.2	129.7	129.7	129.0	130.0
Nonalcoholic beverages	413.7	424.1	425.6	424.8	422.8	423.8	424.2	414.7	426.0	427.3	426.6	424.4	425.3	425.9
Cola drinks, excluding diet cola	298.9	304.9	306.1	305.9	302.9	304.3	305.0	295.6	302.4	303.6	303.3	300.4	301.7	302.8
Carbonated drinks, including diet cola (12/77=100)	142.4	143.4	144.3	143.1	143.3	144.8	144.6	140.3	141.5	142.3	141.2	141.1	142.6	142.3
Roasted coffee	345.1	369.6	369.3	365.1	364.3	365.5	362.9	340.5	365.0	364.3	360.1	359.3	360.4	357.9
Freeze dried and instant coffee	330.8	343.4	344.3	344.3	344.9	344.9	343.1	331.4	343.0	343.9	343.8	344.4	344.4	342.5
Other noncarbonated drinks (12/77=100)	134.9	138.7	138.9	140.0	139.2	137.7	138.8	134.6	138.9	138.1	140.2	139.5	137.8	138.0
Other prepared foods	250.0	266.6	267.5	267.8	268.0	268.9	269.9	260.5	268.3	269.3	269.5	269.8	271.5	271.7
Canned and packaged soup (12/77=100)	134.9	135.7	135.7	136.3	136.9	137.9	137.4	136.4	137.8	137.7	138.3	138.9	140.0	139.5
Frozen prepared foods (12/77=100)	144.8	147.2	147.8	147.3	146.7	149.1	148.9	142.7	146.7	147.3	148.8	148.0	148.5	148.4
Snacks (12/77=100)	149.6	152.9	153.5	153.2	152.7	153.1	153.0	152.6	155.0	155.6	155.2	154.8	155.1	155.0
Seasonings, olives, pickles, and relish (12/77=100)	144.4	153.6	152.8	153.3	152.7	154.1	155.3	142.7	152.7	151.9	152.4	152.1	153.2	154.4
Other condiments (12/77=100)	143.3	148.7	150.2	150.6	151.4	151.9	152.2	145.3	150.4	151.9	152.4	153.2	153.6	154.0
Miscellaneous prepared foods (12/77=100)	142.3	147.6	148.5	148.3	149.3	150.2	149.7	142.8	147.7	148.7	148.5	149.5	150.3	149.9
Other canned and packaged prepared foods (12/77=100)	139.9	143.3	143.5	144.5	144.6	145.4	145.9	141.1	144.6	144.9	145.8	145.9	148.8	147.3
Food away from home	294.8	303.6	304.8	305.9	307.6	308.7	309.8	297.6	306.7	307.8	309.0	310.7	311.8	312.9
Lunch (12/77=100)	143.6	147.5	148.2	148.9	149.6	150.3	150.7	144.6	149.1	149.8	150.5	151.2	152.0	152.3
Dinner (12/77=100)	142.4	146.3	147.1	147.4	148.1	148.6	149.2	144.3	147.9	148.8	149.1	149.8	150.3	150.9
Other meals and snacks (12/77=100)	143.1	148.6	148.5	149.2	150.5	150.7	151.5	143.9	149.3	149.2	149.9	151.1	151.3	152.1
Alcoholic beverages	202.5	207.4	208.0	208.4	209.2	210.1	210.1	204.6	209.5	210.1	210.4	211.3	212.1	212.2
Alcoholic beverages at home (12/77=100)	131.4	134.6	135.0	135.0	135.5	136.1	135.9	132.8	136.0	136.2	136.3	136.9	137.4	137.2
Beer and ale	203.6	210.5	210.3	210.6	211.4	211.9	211.4	203.5	209.6	209.4	209.6	210.5	210.9	210.5
Whiskey	145.4	147.2	148.2	148.3	148.9	149.6	149.8	140.2	148.0	149.0	149.1	148.8	150.4	150.5
Wine	229.7	236.4	236.9	235.3	236.5	236.9	237.5	237.6	244.4	244.9	242.7	245.0	247.1	246.2
Other alcoholic beverages (12/77=100)	117.5	118.2	119.0	119.7	119.6	120.3	120.3	117.1	118.0	118.9	119.6	119.6	120.5	120.4
Alcoholic beverages away from home (12/77=100)	135.4	138.4	139.1	140.3	140.8	141.2	142.5	136.2	139.9	140.6	141.8	142.1	142.4	143.9
HOUSING	303.7	309.4	313.8	317.5	319.2	320.1	319.7	303.6	309.2	313.7	317.5	319.3	320.5	320.0
Shelter	326.9	331.4	336.7	340.9	342.8	344.2	342.6	326.6	332.8	338.3	342.6	344.6	346.5	344.7
Rent, residential	211.9	220.1	221.8	222.6	224.8	226.0	226.9	211.5	219.6	221.3	222.1	224.3	225.5	226.4
Other rental costs	308.1	323.7	323.6	327.3	330.0	333.9	343.0	308.0	322.8	322.6	326.3	329.4	333.3	341.1
Lodging while out of town	326.3	346.6	346.6	352.2	356.5	362.0	363.1	325.3	343.9	344.0	349.4	354.2	358.5	360.7
Tenants' insurance (12/77=100)	135.9	144.9	144.4	145.5	145.6	147.5	147.3	136.4	144.7	143.8	144.8	144.8	146.6	146.3
Homeownership	367.8	370.6	377.4	382.8	384.5	385.9	383.0	371.0	373.6	380.5	386.0	388.0	390.1	387.0
Home purchase	274.5	272.3	279.3	285.6	287.7	287.9	286.8	273.8	270.5	278.1	284.4	286.8	287.3	[illegible]
Financing, taxes, and insurance	501.8	508.4	516.2	521.8	524.3	527.3	519.9	500.0	516.0	523.8	529.7	532.4	536.8	528.9
Property insurance	389.7	393.6	396.7	400.6	401.5	402.5	404.8	391.9	396.0	399.2	402.7	403.7	404.6	407.4
Property taxes	206.2	217.2	218.3	218.8	219.3	221.8	223.7	208.0	219.1	220.2	220.7	221.1	223.7	225.6
Contracted mortgage interest cost	662.0	667.1	678.5	686.7	690.4	694.0	691.2	664.4	670.2	681.4	690.0	694.0	698.6	696.3
Mortgage interest rates	238.2	242.1	240.2	238.3	237.3	236.8	235.3	239.2	244.4	242.1	240.2	239.2	241.2	237.5
Maintenance and repairs	321.6	331.6	334.5	336.1	334.7	335.9	338.4	318.1	328.3	330.9	332.4	331.5	332.5	334.6
Maintenance and repair services	352.5	363.6	367.0	369.1	366.9	368.5	372.5	352.5	365.0	368.0	370.0	368.1	369.6	373.4
Maintenance and repair commodities	248.7	256.2	257.8	258.3	256.7	258.8	257.7	244.1	249.7	251.3	252.1	252.9	253.0	251.8
Paint and wallpaper, supplies, tools, and equipment (12/77=100)	146.2	153.1	154.2	153.3	153.4	154.2	153.0	139.1	145.8	147.0	148.0	148.5	147.3	145.9
Lumber, awnings, glass, and masonry (12/77=100)	125.0	124.5	124.5	124.7	125.0	124.1	123.6	123.2	121.9	121.9	122.1	122.5	121.7	121.3
Plumbing, electrical, heating, and cooling supplies (12/77=100)	131.2	133.4	135.1	136.2	137.1	136.3	136.1	131.7	133.1	134.9	136.0	136.6	135.6	135.3
Miscellaneous supplies and equipment (12/77=100)	131.2	135.6	136.3	138.4	138.3	138.8	139.0	134.3	137.4	138.2	140.6	140.5	140.9	141.2
Fuel and other utilities	331.1	339.2	345.4	352.2	354.7	356.3	358.5	332.3	340.3	348.5	353.6	356.2	357.7	361.0
Fuels	422.4	428.2	436.0	448.4	452.0	454.0	458.5	422.2	427.8	437.4	448.3	451.9	453.8	458.4
Fuel oil, coal, and bottled gas	673.4	641.3	644.6	656.6	659.9	659.9	662.8	677.0	644.0	647.7	658.7	662.9	662.7	665.4
Fuel oil	705.7	668.2	670.6	684.8	688.6	686.8	685.9	709.0	668.4	673.3	687.5	691.1	689.1	688.1
Other fuels (6/78 = 100)	163.8	166.4	165.7	165.6	166.0	169.2	176.8	165.3	167.9	167.1	166.9	167.4	170.5	178.0
Gas (piped) and electricity	364.5	377.8	389.0	398.9	402.1	404.4	409.2	363.6	376.8	387.8	398.2	401.5	403.7	408.6
Electricity	309.8	312.8	314.9	327.5	330.5	333.7	332.5	309.9	311.8	314.4	327.7	330.8	333.7	332.5
Utility (piped) gas	431.7	465.3	484.6	497.2	500.2	500.6	517.6	428.5	463.6	480.8	483.8	486.9	487.5	514.5

18. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
HOUSING — Continued														
Fuel and other utilities — Continued														
Other utilities and public services	187.4	197.7	198.9	200.4	201.4	202.4	203.6	187.8	198.2	199.5	201.1	202.1	203.1	204.3
Telephone services	152.5	160.8	161.6	163.2	163.8	164.2	165.5	152.7	161.0	161.9	163.5	164.2	164.6	165.9
Local charges (12/77 = 100)	120.5	127.9	128.9	131.2	131.9	132.5	134.3	120.7	128.1	129.2	131.6	132.3	132.9	134.8
Interstate toll calls (12/77 = 100)	114.9	119.9	120.0	119.6	119.7	119.7	119.7	115.1	120.2	120.4	120.1	120.1	120.1	120.1
Intrastate toll calls (12/77 = 100)	103.9	108.9	109.3	109.8	110.0	110.0	110.1	103.7	108.7	109.0	109.4	109.6	109.6	109.7
Water and sewerage maintenance	304.1	320.7	323.5	324.9	327.7	331.9	332.4	306.0	323.6	326.7	328.0	330.8	334.8	335.4
Household furnishings and operations	224.5	232.6	233.4	233.7	234.1	233.4	234.2	221.2	229.1	230.0	230.4	230.9	230.0	231.0
Housefurnishings	187.9	193.8	194.7	194.7	194.7	193.3	194.3	185.7	191.7	192.5	192.6	192.7	191.3	192.4
Textile housefurnishings	207.7	218.7	220.9	220.2	216.6	220.4	222.1	213.0	221.4	223.9	223.3	221.1	222.9	225.0
Household linens (12/77 = 100)	127.7	135.8	135.4	134.6	131.9	132.9	135.4	129.7	137.0	136.8	135.9	133.3	134.1	136.4
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	131.4	136.9	140.1	140.1	140.8	142.2	141.6	136.3	139.1	142.8	143.0	143.2	144.7	144.8
Furniture and bedding	207.7	214.7	215.1	214.4	214.2	210.3	213.3	202.7	211.0	211.3	210.9	210.5	206.9	210.3
Bedroom furniture (12/77 = 100)	137.6	142.3	144.5	143.0	144.8	141.4	145.5	132.9	138.9	140.7	139.7	141.2	137.3	142.1
Sofas (12/77 = 100)	118.6	119.3	119.1	117.5	117.7	117.0	117.2	117.4	119.6	119.4	118.2	118.1	117.5	117.7
Living room chairs and tables (12/77 = 100)	116.8	123.2	122.8	123.2	121.9	121.1	123.1	117.2	123.3	122.9	123.3	122.0	121.4	123.4
Other furniture (12/77 = 100)	137.3	142.3	141.6	142.3	140.9	137.1	137.8	132.3	137.9	137.0	137.7	136.3	133.3	134.1
Appliances including TV and sound equipment	147.7	150.6	151.4	151.4	151.6	151.3	151.5	146.7	150.3	151.1	151.2	151.5	151.2	151.4
Television and sound equipment (12/77 = 100)	108.7	108.7	108.8	108.6	108.7	108.3	108.2	107.8	107.7	107.9	107.7	107.8	107.5	107.4
Television	104.6	104.2	104.3	104.4	104.0	103.9	103.7	103.6	103.0	103.0	103.1	102.7	102.7	102.6
Sound equipment (12/77 = 100)	113.4	113.7	113.9	113.5	114.0	113.3	113.2	112.4	112.8	113.0	112.7	113.2	112.8	112.5
Household appliances	175.7	182.1	183.6	183.8	184.2	184.1	184.7	174.4	182.3	183.8	184.2	184.8	184.6	185.1
Refrigerators and home freezers	177.5	184.8	186.2	187.7	187.4	187.4	190.2	180.6	190.6	191.8	193.2	192.9	192.9	196.1
Laundry equipment (12/77 = 100)	129.7	136.4	136.6	136.7	137.3	137.3	137.6	128.8	136.6	136.8	136.9	137.5	137.5	137.9
Other household appliances (12/77 = 100)	119.7	122.9	124.3	123.9	124.4	124.3	124.0	117.1	120.7	122.3	122.3	123.0	122.7	122.0
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	118.8	122.3	123.7	123.1	123.3	122.7	123.4	116.0	118.7	121.4	121.6	122.2	121.4	121.5
Office machines, small electric appliances, and air conditioners (12/77 = 100)	120.8	123.5	124.9	124.8	125.6	126.0	124.6	118.3	121.8	123.3	123.0	123.9	124.2	122.5
Other household equipment (12/77 = 100)	133.1	137.8	138.3	139.0	139.6	138.2	137.8	131.6	135.6	136.0	136.9	137.5	136.0	135.6
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	134.8	140.3	141.4	142.3	142.7	142.9	143.3	129.6	132.9	133.9	134.9	135.4	135.4	135.9
Clocks, lamps, and decor items (12/77 = 100)	128.2	130.2	131.4	132.2	132.3	129.8	129.7	123.8	126.5	127.4	128.2	128.3	125.1	124.9
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	140.4	145.0	144.4	145.6	145.9	143.8	141.6	137.8	140.6	139.8	141.4	141.9	140.0	137.6
Lawn equipment, power tools, and other hardware (12/77 = 100)	124.5	130.8	132.1	131.9	133.2	132.3	133.4	129.2	136.0	137.4	137.1	138.5	137.2	138.8
Housekeeping supplies	273.3	284.9	285.5	286.5	288.4	288.7	289.2	270.4	281.2	281.8	283.1	285.0	284.9	285.7
Soaps and detergents	268.9	280.0	278.8	280.8	281.4	279.4	282.8	266.6	276.3	275.2	277.0	277.6	275.4	278.9
Other laundry and cleaning products (12/77 = 100)	135.7	142.7	143.3	143.8	145.3	144.6	145.6	135.8	141.6	142.3	142.7	144.2	143.6	144.5
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	139.9	146.4	146.0	146.5	147.7	148.5	148.0	140.4	146.2	145.6	146.1	147.4	148.3	147.9
Stationery, stationery supplies, and gift wrap (12/77 = 100)	127.2	131.4	132.0	132.5	134.3	135.4	136.8	128.7	134.6	135.3	136.0	137.8	138.6	140.0
Miscellaneous household products (12/77 = 100)	142.8	147.5	149.3	150.2	150.3	150.7	150.2	138.1	142.4	144.1	144.9	145.1	145.5	145.0
Lawn and garden supplies (12/77 = 100)	137.8	144.7	144.8	144.0	145.3	145.7	143.8	131.1	136.8	136.6	136.7	138.1	138.1	136.4
Housekeeping services	298.3	310.4	311.3	311.7	312.5	312.9	313.4	296.9	309.2	310.2	310.9	311.6	312.2	312.7
Postage	308.0	337.5	337.5	337.5	337.5	337.5	337.5	308.1	337.5	337.5	337.5	337.5	337.5	337.5
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	144.7	152.1	153.1	154.2	155.3	156.1	156.6	144.9	152.2	153.3	154.5	155.4	156.4	156.8
Appliance and furniture repair (12/77 = 100)	129.0	135.6	136.6	137.0	137.5	137.7	138.3	128.3	134.1	135.1	135.5	136.0	136.1	136.7
APPAREL AND UPKEEP	190.7	191.9	191.5	190.8	189.7	191.8	194.9	190.5	191.2	190.6	189.6	188.7	190.7	194.1
Apparel commodities	181.4	181.4	180.9	180.0	178.6	180.8	184.1	181.6	181.3	180.5	179.4	178.2	180.3	183.8
Apparel commodities less footwear	178.0	177.4	176.7	175.6	174.0	178.9	180.4	178.1	177.1	176.0	174.7	173.4	176.2	179.9
Men's and boys'	181.1	183.1	183.8	183.1	182.4	183.7	186.5	181.4	182.9	183.7	183.2	182.6	183.5	186.6
Men's (12/77 = 100)	114.3	115.5	115.9	115.4	114.9	115.9	117.7	115.0	115.7	116.2	115.8	115.4	116.2	118.2
Suits, sport coats, and jackets (12/77 = 100)	108.8	107.6	108.1	107.3	105.5	108.0	110.6	102.1	101.1	101.4	100.6	99.2	101.2	103.5
Coats and jackets (12/77 = 100)	101.0	99.1	99.9	98.5	98.2	99.1	103.7	106.1	100.7	101.5	101.1	99.8	100.3	106.4
Furnishings and special clothing (12/77 = 100)	132.7	138.2	138.7	138.0	138.7	138.4	136.6	128.5	134.5	135.3	134.7	135.3	134.9	135.8
Shirts (12/77 = 100)	120.6	121.3	121.2	121.5	121.6	121.9	123.8	123.9	123.4	123.1	123.8	123.6	123.9	126.2
Dungarees, jeans, and trousers (12/77 = 100)	107.8	109.7	110.3	109.7	109.5	110.5	111.4	113.5	115.1	115.6	115.2	115.0	116.0	116.9
Boys' (12/77 = 100)	116.4	118.3	118.8	118.5	118.6	118.4	120.2	114.8	116.5	117.1	116.9	116.9	116.7	118.3
Coats, jackets, sweaters, and shirts (12/77 = 100)	111.3	111.2	111.5	110.7	109.0	110.5	113.7	112.3	111.5	112.0	111.5	109.7	111.3	114.6
Furnishings (12/77 = 100)	125.0	130.3	131.2	131.9	132.1	131.1	132.6	120.9	126.0	127.2	128.0	128.2	127.2	128.6
Suits, trousers, sport coats, and jackets (12/77 = 100)	117.0	119.0	119.6	119.4	120.7	119.5	120.3	114.4	116.8	117.3	117.1	118.3	117.1	117.3
Women's and girls'	162.9	160.9	159.1	157.3	154.6	159.2	163.6	164.9	163.4	160.8	158.4	156.2	160.9	165.7
Women's (12/77 = 100)	108.1	107.1	105.7	104.4	102.1	105.4	108.7	108.8	108.1	107.1	105.4	103.5	108.9	110.5
Coats and jackets	170.8	163.4	158.3	156.4	154.9	163.0	169.7	177.8	172.9	165.7	162.9	161.8	171.0	176.9
Dresses	170.8	166.6	162.0	160.1	152.8	158.5	165.1	155.5	151.1	147.1	145.4	138.4	145.9	151.2
Separates and sportswear (12/77 = 100)	101.1	100.1	101.2	100.2	96.7	98.3	101.4	103.3	101.0	101.9	101.0	97.6	99.1	102.6
Underwear, nightwear, and hosiery (12/77 = 100)	122.8	127.4	128.1	127.9	127.7	129.3	129.7	122.7	127.3	127.9	127.6	127.4	129.0	129.4
Suits (12/77 = 100)	85.4	88.4	83.4	78.6	77.6	85.6	92.7	115.0	111.0	100.6	92.7	93.1	99.8	111.9
Girls' (12/77 = 100)	109.7	108.7	108.3	105.6	108.3	108.2	109.6	108.8	106.9	108.2	105.2	105.4	107.4	108.9
Coats, jackets, dresses, and suits (12/77 = 100)	103.3	98.8	96.9	95.1	98.8	101.4	102.5	103.3	97.6	95.0	92.4	96.0	96.4	100.5
Separates and sportswear (12/77 = 100)	111.0	105.4	105.9	106.0	103.6	105.8	107.8	110.0	107.6	108.0	107.7	104.1	105.9	108.5
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	117.9	122.0	122.4	122.9	123.6	124.0	124.4	115.5	121.0	121.5	121.9	122.7	123.0	123.5

18. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
APPAREL AND UPKEEP — Continued														
Apparel commodities — Continued														
Apparel commodities less footwear — Continued														
Infants' and toddlers'	266.4	267.0	269.0	268.7	268.8	272.4	276.8	279.8	278.2	279.3	278.2	277.8	283.0	288.1
Other apparel commodities	213.3	210.8	209.7	209.9	209.7	210.8	212.6	206.0	199.5	198.8	198.9	198.7	199.5	201.2
Sewing materials and notions (12/77 = 100)	118.3	118.5	119.3	119.2	120.0	121.5	121.9	116.4	116.9	117.7	117.6	118.5	118.6	120.0
Jewelry and luggage (12/77 = 100)	146.2	143.8	142.5	142.8	142.2	142.6	144.1	140.9	134.5	133.5	133.6	133.1	133.3	134.7
Footwear	202.4	205.6	208.5	206.6	206.4	204.4	206.2	202.3	206.1	206.9	206.7	206.7	204.1	205.9
Men's (12/77 = 100)	128.8	132.3	132.4	132.1	132.3	130.9	132.4	129.7	134.4	134.5	134.1	134.3	132.7	134.1
Boys' and girls' (12/77 = 100)	129.7	130.4	131.5	132.1	131.7	128.7	129.4	130.7	133.6	134.6	134.8	134.4	131.3	131.9
Women's (12/77 = 100)	123.5	125.1	125.8	125.8	125.6	125.4	126.5	121.2	121.1	121.6	121.6	121.5	121.1	122.4
Apparel services	262.0	273.4	274.7	275.3	276.6	277.4	279.2	260.0	271.0	272.3	273.0	274.3	275.2	277.2
Laundry and drycleaning other than coin operated (12/77 = 100)	155.7	163.5	164.4	164.8	165.4	165.6	166.7	155.0	162.0	162.8	163.3	163.8	164.1	165.2
Other apparel services (12/77 = 100)	138.2	142.5	142.9	143.1	144.1	145.0	145.9	137.4	142.7	143.1	143.4	144.6	145.5	146.6
TRANSPORTATION	285.2	282.9	285.6	292.8	296.1	296.2	295.3	286.6	284.3	287.1	294.5	297.9	298.0	296.9
Private	281.9	278.8	281.5	288.9	292.3	292.4	291.1	284.1	281.2	284.0	291.6	295.1	295.2	293.8
New cars	191.3	196.0	197.5	198.1	196.6	196.7	197.7	191.4	195.9	197.3	197.9	198.5	198.6	197.5
Used cars	272.8	285.1	291.4	298.2	302.4	304.4	304.6	272.8	285.2	291.4	298.2	302.4	304.4	304.6
Gasoline	411.2	366.7	370.4	382.3	400.3	398.4	394.2	412.4	367.9	371.7	383.8	401.6	399.7	395.5
Automobile maintenance and repair	298.7	311.9	313.6	316.0	318.0	319.2	320.6	299.3	312.8	314.4	316.8	318.7	320.0	321.3
Body work (12/77 = 100)	147.4	155.0	156.7	156.3	157.5	158.2	159.4	146.1	153.3	154.0	154.7	156.0	156.8	158.1
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	143.1	148.5	150.8	151.6	151.9	152.5	153.1	145.5	153.7	154.9	155.7	156.1	156.6	157.1
Maintenance and servicing (12/77 = 100)	138.9	144.5	145.0	146.8	147.9	148.5	148.9	139.2	144.0	144.4	146.2	147.3	147.8	148.2
Power plant repair (12/77 = 100)	142.6	149.1	150.1	150.8	151.7	152.4	153.3	141.9	148.6	149.6	150.3	151.2	151.9	152.8
Other private transportation	244.2	258.1	256.7	258.7	260.8	260.8	260.0	246.9	258.2	258.8	261.8	264.0	263.9	263.0
Other private transportation commodities	212.6	214.9	216.9	217.5	216.3	214.8	213.9	215.5	217.3	219.4	220.0	218.8	217.1	216.3
Motor oil, coolant, and other products (12/77 = 100)	147.7	150.7	149.9	150.7	151.5	153.2	152.5	145.3	149.2	148.4	149.0	150.3	151.8	151.2
Automobile parts and equipment (12/77 = 100)	136.0	137.2	138.8	139.2	138.2	136.8	136.3	138.4	139.2	140.9	141.2	140.1	138.6	138.1
Tires	189.7	190.1	192.3	192.8	191.8	189.5	188.5	194.1	193.7	196.0	196.4	195.5	193.0	192.1
Other parts and equipment (12/77 = 100)	132.8	136.2	138.0	138.3	136.6	135.8	135.8	133.2	136.6	138.4	138.6	136.8	136.0	135.8
Other private transportation services	256.0	268.2	268.4	272.2	275.1	275.5	274.7	257.7	271.6	271.8	275.5	278.5	278.9	277.9
Automobile insurance	262.0	270.4	271.6	274.0	275.4	275.8	276.9	261.8	270.2	271.3	273.5	274.9	275.2	276.3
Automobile finance charges (12/77 = 100)	178.0	187.2	186.3	192.0	193.6	193.5	189.6	176.5	186.7	185.9	191.2	192.6	192.9	188.9
Automobile rental, registration, and other fees (12/77 = 100)	120.1	133.3	133.3	133.3	137.4	138.0	138.9	119.8	133.7	133.7	133.8	138.4	138.8	140.0
State registration	147.9	174.2	174.2	174.3	183.6	183.8	183.7	148.0	173.8	173.8	173.9	183.2	183.4	183.3
Drivers' licenses (12/77 = 100)	109.6	123.0	127.7	127.7	132.8	132.8	132.8	109.5	123.0	127.9	127.9	133.1	133.1	133.1
Vehicle inspection (12/77 = 100)	128.4	129.0	126.7	126.7	128.5	128.6	128.5	129.1	130.4	128.3	128.3	129.9	129.9	129.9
Other vehicle-related fees (12/77 = 100)	140.9	149.5	149.2	149.3	151.0	151.9	154.5	145.9	156.4	156.2	156.3	158.7	159.4	163.0
Public	329.1	339.3	342.1	345.6	347.2	348.1	353.3	324.5	333.3	335.1	337.9	339.8	341.0	345.4
Airline fare	372.5	382.7	388.9	386.0	387.4	397.5	409.5	371.8	379.8	385.2	392.4	393.2	393.5	407.0
Intercity bus fare	351.4	367.0	368.0	363.7	368.3	370.5	368.9	351.7	368.7	367.5	365.4	370.6	372.3	371.0
Intracity mass transit	298.6	308.1	308.3	309.2	311.0	312.8	312.6	299.2	307.2	307.1	307.9	310.3	312.3	312.1
Taxi fare	288.6	297.6	297.6	298.0	299.3	299.7	299.8	297.1	307.3	307.2	307.6	308.7	309.3	309.3
Intercity train fare	305.0	332.1	337.9	338.2	338.4	338.6	338.4	305.2	332.1	337.9	338.2	338.4	338.6	338.4
MEDICAL CARE	301.7	321.7	323.8	326.4	330.0	333.3	336.0	300.9	320.2	322.3	324.8	328.1	331.3	333.9
Medical care commodities	190.8	202.4	204.1	205.6	206.5	208.2	209.9	191.9	203.0	204.8	206.3	207.1	208.8	210.5
Prescription drugs	176.5	188.8	190.4	191.8	193.4	195.6	197.2	178.0	189.7	191.4	192.7	194.4	196.6	198.2
Anti-infective drugs (12/77 = 100)	136.5	140.9	142.5	143.3	144.2	146.0	147.5	139.2	142.5	144.1	145.1	146.0	147.5	149.2
Tranquilizers and sedatives (12/77 = 100)	140.0	152.0	153.8	154.9	156.1	157.6	158.8	139.7	151.8	153.8	154.7	155.8	157.4	158.6
Circulatories and diuretics (12/77 = 100)	127.8	136.7	137.0	138.4	139.3	140.7	141.5	129.0	136.6	136.8	138.2	139.1	140.6	141.3
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	160.6	173.3	175.4	177.2	179.6	181.6	182.3	161.4	174.6	176.9	178.6	181.1	183.1	183.8
Pain and symptom control drugs (12/77 = 100)	141.7	153.1	153.7	154.6	155.4	157.6	159.5	143.8	154.6	155.2	156.0	157.1	159.3	161.4
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	134.1	144.7	145.9	146.3	147.9	148.6	150.8	134.6	144.8	146.0	146.4	148.1	149.8	150.9
Nonprescription drugs and medical supplies (12/77 = 100)	136.7	143.9	145.1	146.3	146.4	147.2	148.4	137.4	144.6	145.9	147.1	147.1	147.9	149.1
Eyeglasses (12/77 = 100)	128.9	130.1	130.9	131.6	131.6	131.6	131.9	129.0	128.7	129.7	130.4	130.4	130.3	130.5
Internal and respiratory over-the-counter drugs	217.8	231.1	233.4	235.2	234.9	236.6	239.3	218.9	232.5	235.0	236.8	236.2	237.9	240.6
Nonprescription medical equipment and supplies (12/77 = 100)	131.4	138.9	139.5	141.1	142.2	142.9	143.5	132.6	139.7	140.4	142.0	143.2	144.2	144.8
Medical care services	326.1	348.0	350.2	353.0	357.3	361.0	364.0	324.7	345.8	348.0	350.7	354.7	358.3	361.1
Professional services	284.3	297.8	299.2	301.2	302.8	304.4	305.9	284.5	297.9	299.3	301.3	302.9	304.6	306.1
Physicians' services	304.9	322.2	324.0	326.4	328.7	330.4	332.3	306.6	325.2	327.0	329.4	331.6	333.5	335.4
Dental services	270.8	281.1	282.1	283.9	284.8	286.4	287.7	268.4	279.2	280.3	282.1	282.9	284.4	285.7
Other professional services (12/77 = 100)	137.7	142.5	143.4	143.8	144.8	145.6	145.9	134.3	139.4	140.2	140.7	141.5	142.5	142.7
Other medical care services	376.5	408.7	411.9	415.7	423.2	429.4	434.1	374.1	405.4	408.5	412.1	419.4	425.4	429.9
Hospital and other medical services (12/77 = 100)	156.6	169.8	170.6	171.6	174.7	177.1	178.3	154.8	168.3	169.1	170.0	172.9	175.2	178.5
Hospital room	494.6	542.2	543.8	546.8	557.8	565.5	570.1	488.5	535.2	536.7	539.4	549.7	557.6	562.1
Other hospital and medical care services (12/77 = 100)	155.0	166.4	167.6	168.5	171.2	173.6	174.7	153.4	165.5	166.6	167.5	170.0	172.2	173.3

18. Continued—Consumer Price Index—U.S. city average

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
ENTERTAINMENT	224.0	233.9	234.4	235.6	236.6	237.4	238.3	221.5	230.5	231.1	232.3	233.5	233.9	234.8
Entertainment commodities	227.9	238.0	238.8	239.6	241.1	240.5	240.8	224.0	232.0	232.8	233.8	235.5	234.4	235.0
Reading materials (12/77 = 100)	138.1	148.8	148.5	149.4	150.4	149.4	150.1	137.8	146.1	147.7	148.6	149.7	148.9	149.6
Newspapers	266.3	280.1	281.6	283.9	285.9	286.3	288.5	266.2	279.7	281.2	283.4	285.6	286.0	288.2
Magazines, periodicals, and books (12/77 = 100)	141.1	151.6	154.4	155.0	156.1	153.8	153.9	141.2	151.4	154.2	154.8	156.0	153.6	153.8
Sporting goods and equipment (12/77 = 100)	127.3	132.9	132.8	132.7	132.8	133.2	132.9	121.3	124.7	124.9	125.3	125.7	124.9	125.0
Sport vehicles (12/77 = 100)	128.4	136.1	135.4	135.7	135.4	135.7	135.3	118.7	122.8	122.6	123.9	124.1	122.4	122.8
Indoor and warm weather sport equipment (12/77 = 100)	119.1	120.4	121.0	119.6	120.3	119.7	120.5	117.2	118.6	119.2	117.1	118.0	117.5	118.1
Bicycles	193.2	198.9	199.4	197.6	198.3	198.4	198.0	193.9	200.2	200.7	198.8	199.4	200.4	200.0
Other sporting goods and equipment (12/77 = 100)	125.0	128.3	127.6	127.9	129.4	130.3	129.4	125.8	126.5	127.9	128.3	129.8	130.9	129.8
Toys, hobbies, and other entertainment (12/77 = 100)	131.0	135.4	135.5	136.1	137.3	136.9	137.1	130.6	134.3	134.4	134.9	136.1	135.7	136.0
Toys, hobbies, and music equipment (12/77 = 100)	129.4	134.1	134.8	135.9	137.2	136.4	136.4	127.1	130.7	131.4	132.4	133.7	132.8	132.9
Photographic supplies and equipment (12/77 = 100)	126.4	129.8	130.0	130.3	130.8	130.2	130.1	127.7	131.0	131.2	131.5	131.9	131.4	131.3
Pet supplies and expenses (12/77 = 100)	137.2	141.9	141.0	140.6	142.0	142.5	143.4	138.8	142.7	141.8	141.5	143.0	143.6	144.6
Entertainment services	218.9	228.5	228.7	230.5	230.6	233.5	235.2	218.3	229.2	229.2	230.9	231.3	234.2	235.8
Fees for participant sports (12/77 = 100)	134.3	142.0	141.6	142.5	141.8	143.4	146.0	134.0	143.7	142.9	143.8	143.0	144.8	147.4
Admissions (12/77 = 100)	128.0	132.2	133.0	133.5	135.5	137.4	136.4	127.3	131.2	132.1	132.6	134.6	136.5	135.5
Other entertainment services (12/77 = 100)	122.5	125.2	125.7	127.9	127.8	128.3	128.8	122.7	125.9	126.4	128.7	129.8	129.2	129.6
OTHER GOODS AND SERVICES	243.0	253.8	255.0	255.8	257.2	258.3	266.6	239.3	250.9	252.4	253.1	254.5	255.7	262.8
Tobacco products	221.7	235.1	237.4	237.8	239.2	240.1	246.8	220.9	234.0	236.6	237.0	238.3	239.3	246.1
Cigarettes	224.2	238.0	240.4	240.7	242.2	243.1	250.6	223.4	236.9	239.6	239.9	241.3	242.3	249.6
Other tobacco products and smoking accessories (12/77 = 100)	133.1	139.9	141.0	141.8	142.1	142.4	142.6	134.4	140.1	141.1	142.0	142.2	142.5	142.8
Personal care	236.3	245.9	246.5	247.8	249.4	250.6	251.1	233.6	244.1	244.7	246.0	247.5	248.8	249.3
Toilet goods and personal care appliances	231.2	243.8	244.5	246.3	247.7	249.5	249.1	231.1	244.7	245.4	247.0	248.6	250.5	250.0
Products for the hair, hairpieces, and wigs (12/77 = 100)	134.1	142.9	142.1	143.2	145.0	145.0	144.6	133.3	142.3	141.7	142.6	144.2	144.4	144.0
Dental and shaving products (12/77 = 100)	140.0	149.0	150.1	150.5	150.9	153.1	153.3	138.0	147.6	148.6	148.9	149.5	151.6	151.8
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	130.7	136.5	137.6	139.6	139.9	141.3	140.7	130.4	137.5	138.5	140.1	140.5	142.0	141.4
Other toilet goods and small personal care appliances (12/77 = 100)	134.2	140.3	140.5	140.6	141.8	142.5	142.4	137.4	143.5	144.0	144.4	145.4	146.2	146.2
Personal care services	241.5	248.7	249.2	250.1	251.8	252.5	253.8	236.3	244.0	244.4	245.4	246.9	247.6	248.9
Beauty parlor services for women	243.0	250.7	251.3	252.3	254.4	255.0	256.3	236.1	244.3	245.0	245.9	247.9	248.7	249.8
Haircuts and other barber shop services for men (12/77 = 100)	135.3	138.6	138.9	139.4	139.8	140.2	141.1	133.9	137.6	137.7	138.2	138.5	139.0	139.9
Personal and educational expenses	281.5	291.9	292.8	293.3	294.5	295.8	316.1	281.8	293.5	294.6	295.2	296.4	297.9	317.4
Schoolbooks and supplies	252.1	263.8	264.2	264.6	264.8	265.3	280.5	255.9	268.0	268.4	268.8	269.0	269.6	284.3
Personal and educational services	288.5	298.7	298.8	300.3	301.7	303.1	324.4	288.5	300.0	301.4	302.0	303.4	305.1	325.6
Tuition and other school fees	147.4	151.4	151.4	151.5	152.0	152.6	165.6	147.7	152.0	152.0	152.1	152.5	153.2	166.2
College tuition (12/77 = 100)	146.3	151.0	151.0	151.2	151.8	151.9	164.9	146.1	151.3	151.3	151.4	152.0	152.0	165.0
Elementary and high school tuition (12/77 = 100)	151.5	152.2	152.2	152.2	152.2	154.6	168.7	152.1	152.9	152.9	152.9	152.9	155.6	169.6
Personal expenses (12/77 = 100)	150.0	160.9	163.6	164.5	166.0	167.4	169.4	148.5	160.5	163.6	164.6	166.1	167.6	169.6
Special indexes:														
Gasoline, motor oil, coolant, and other products	405.4	382.6	366.1	387.3	395.0	393.2	389.2	406.5	383.7	367.2	388.6	396.2	394.4	390.3
Insurance and finance	417.6	426.3	431.5	436.5	439.1	441.3	436.0	416.4	425.9	430.9	436.0	438.8	441.7	436.3
Utilities and public transportation	293.3	305.1	311.0	316.6	318.7	320.3	323.8	292.4	304.0	309.8	315.6	317.8	319.4	322.8
Housekeeping and home maintenance services	335.7	347.5	349.8	351.2	350.3	351.4	353.8	335.5	348.2	350.4	351.8	351.0	352.2	354.6

19. Consumer Price Index for All Urban Consumers: Cross classification of region and population size class by expenditure category and commodity and service group

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000-1.250 million)			Size class C (75,000-385,000)			Size class D (75,000 or less)		
	1982			1982			1982			1982		
	Apr.	June	Aug.	Apr.	June	Aug.	Apr.	June	Aug.	Apr.	June	Aug.
	Northeast											
EXPENDITURE CATEGORY												
All items	143.6	147.7	149.0	150.0	155.5	155.8	158.8	163.5	161.2	151.9	156.9	155.3
Food and beverages	143.7	145.9	144.9	142.2	144.1	143.4	147.4	148.8	148.9	140.4	142.9	142.9
Housing	144.5	151.8	153.3	155.3	165.2	164.5	173.3	182.1	174.5	160.5	169.3	163.7
Apparel and upkeep	119.1	118.8	119.8	122.5	122.8	122.4	127.4	128.3	128.4	125.1	123.4	124.8
Transportation	153.7	157.2	159.4	160.0	164.8	166.5	158.6	162.2	164.7	158.1	161.2	163.7
Medical care	146.4	147.5	150.0	148.9	150.2	156.1	150.4	152.7	157.2	151.5	155.4	156.1
Entertainment	135.5	136.5	136.7	136.2	137.5	137.4	135.8	136.4	136.8	139.0	141.1	143.8
Other goods and services	139.0	139.8	141.7	141.1	142.1	143.2	145.3	146.7	148.1	142.9	144.0	144.6
COMMODITY AND SERVICE GROUP												
Commodities	140.8	144.8	145.3	146.6	151.6	151.6	149.6	153.8	152.3	146.5	150.6	149.8
Commodities less food and beverages	139.0	143.8	145.5	148.7	155.1	155.6	150.6	156.2	153.9	149.4	154.3	153.1
Services	147.4	151.8	153.8	155.4	161.9	162.4	173.4	179.1	175.6	160.4	166.8	163.8
	North Central Region											
EXPENDITURE CATEGORY												
All items	155.2	159.6	162.2	155.1	155.3	157.0	151.2	155.2	158.9	153.3	156.4	160.2
Food and beverages	141.9	144.1	143.7	141.7	142.8	142.7	143.1	145.0	144.9	146.2	146.7	149.2
Housing	169.8	175.1	179.8	167.2	163.3	165.8	157.2	162.1	169.4	160.7	164.0	171.4
Apparel and upkeep	114.8	114.0	117.0	122.7	123.0	124.1	125.8	124.7	126.7	123.5	120.5	120.1
Transportation	158.7	165.1	166.1	156.9	163.2	165.0	158.4	165.7	166.7	157.2	163.1	164.1
Medical care	150.9	153.0	155.8	152.8	155.2	161.2	153.8	155.6	157.7	157.0	158.3	161.0
Entertainment	137.0	137.1	138.8	130.3	129.5	131.7	138.1	139.2	139.9	130.9	131.5	131.4
Other goods and services	140.3	141.4	142.3	146.5	152.5	153.3	139.0	141.2	142.8	145.4	148.3	150.2
COMMODITY AND SERVICE GROUP												
Commodities	145.4	149.4	150.9	146.4	148.5	148.8	144.3	148.8	150.8	143.7	147.9	149.1
Commodities less food and beverages	147.0	151.9	154.2	148.3	150.9	151.3	144.8	150.5	153.4	142.6	147.6	149.0
Services	169.8	174.8	179.0	169.3	166.2	170.3	162.4	165.6	172.0	168.7	169.8	177.8
	South											
EXPENDITURE CATEGORY												
All items	152.9	156.3	156.9	155.7	158.4	159.1	152.3	157.6	158.8	153.5	156.5	158.8
Food and beverages	145.0	146.7	147.2	144.9	146.9	146.5	144.0	146.0	146.0	145.9	147.7	147.5
Housing	161.1	165.2	165.0	165.2	167.2	167.9	159.1	167.0	157.8	161.5	164.6	168.4
Apparel and upkeep	125.6	124.9	124.0	124.3	123.6	122.6	120.2	118.6	121.0	111.1	109.4	107.9
Transportation	157.5	163.4	165.3	159.7	167.0	168.6	157.1	165.1	166.4	155.8	163.3	165.6
Medical care	149.5	152.8	156.2	152.3	154.5	157.3	160.1	162.5	166.2	165.1	166.6	169.3
Entertainment	130.1	132.0	131.7	141.2	143.1	145.0	141.1	142.7	142.1	145.7	145.2	148.1
Other goods and services	142.8	144.1	145.6	142.4	143.3	143.6	143.7	144.5	145.2	150.2	150.4	152.3
COMMODITY AND SERVICE GROUP												
Commodities	146.3	149.1	149.7	147.6	150.9	150.9	144.3	149.2	149.6	146.0	149.7	149.8
Commodities less food and beverages	146.9	150.1	150.8	148.8	152.6	152.8	144.5	150.6	151.2	146.0	150.5	150.5
Services	162.1	166.5	166.9	167.8	169.8	171.5	164.5	170.6	172.4	164.8	166.8	172.6
	West											
EXPENDITURE CATEGORY												
All items	158.5	160.8	160.3	157.0	158.6	159.9	151.1	149.7	153.3	157.9	159.9	158.5
Food and beverages	144.5	146.4	147.5	147.6	148.9	148.6	143.5	145.1	144.9	148.5	149.9	150.6
Housing	169.1	170.1	167.7	164.8	165.6	166.6	150.3	150.3	155.6	163.5	165.5	160.5
Apparel and upkeep	120.6	120.0	119.8	126.6	125.2	124.9	119.7	122.3	122.8	140.4	140.5	138.5
Transportation	162.9	167.7	169.9	161.7	165.9	169.7	158.3	163.5	167.0	160.5	162.8	166.2
Medical care	160.7	164.4	167.1	156.0	159.5	163.3	157.3	159.6	167.0	162.4	166.2	169.5
Entertainment	137.7	138.5	135.8	136.8	139.4	141.0	133.9	134.2	135.7	148.9	150.6	153.1
Other goods and services	147.5	147.0	149.3	148.9	148.1	149.8	139.5	139.9	141.7	149.8	153.3	154.4
COMMODITY AND SERVICE GROUP												
Commodities	145.5	147.8	148.8	148.1	149.5	151.0	146.4	147.5	149.9	148.9	151.3	149.2
Commodities less food and beverages	145.9	148.4	149.4	148.3	149.7	152.1	147.5	148.5	152.0	149.1	152.0	148.7
Services	175.9	178.1	175.5	169.3	171.1	172.1	157.9	152.8	158.1	171.2	172.5	172.1

20. Consumer Price Index—U.S. city average, and selected areas

[1967 = 100 unless otherwise specified]

Area[1]	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
U.S. city average[2]	279.3	284.3	287.1	290.6	292.2	292.8	293.3	279.1	283.7	286.5	290.1	291.8	292.4	292.8
Anchorage, Alaska (10/67 = 100)	250.5	...	253.8	...	253.8	...	253.4	245.9	...	250.0	...	250.1	...	250.9
Atlanta, Ga.	...	280.2	...	291.1	...	295.6	...	...	282.9	...	292.9	...	297.1	...
Baltimore, Md.	279.9	...	283.6	...	286.1	...	289.2	281.6	...	283.7	...	287.0	...	288.6
Boston, Mass.	272.8	...	272.5	...	279.2	...	282.9	273.6	...	272.0	...	278.7	...	282.7
Buffalo, N.Y.	...	258.3	...	265.6	...	267.7	...	...	256.4	...	264.1	...	265.5	...
Chicago, Ill.-Northwestern Ind.	276.9	280.2	287.7	291.8	293.1	293.2	294.0	275.8	280.0	287.0	291.5	292.7	292.5	292.9
Cincinnati, Ohio-Ky.-Ind.	275.2	...	288.7	...	293.3	...	300.2	277.1	...	291.2	...	295.9	...	302.8
Cleveland, Ohio	...	286.5	...	297.8	...	312.2	...	...	285.7	...	297.0	...	310.6	...
Dallas-Ft. Worth, Tex.	...	297.2	...	304.6	...	304.3	...	...	292.7	...	300.5	...	300.2	...
Denver-Boulder, Colo.	298.9	...	313.4	...	319.9	...	324.5	304.2	...	319.5	...	326.3	...	331.3
Detroit, Mich.	284.2	283.7	285.9	289.1	292.4	292.7	294.9	280.2	280.3	282.7	286.0	288.3	289.3	291.2
Honolulu, Hawaii	...	263.8	...	269.5	...	269.9	...	...	264.7	...	269.5	...	270.1	...
Houston, Tex.	...	304.9	...	313.9	...	318.6	...	...	302.1	...	310.9	...	315.3	...
Kansas City, Mo.-Kansas	...	274.0	...	281.6	...	285.0	...	...	272.1	...	280.1	...	283.6	...
Los Angeles-Long Beach, Anaheim, Calif.	279.3	286.8	287.1	290.1	289.3	289.1	289.2	282.9	290.5	290.6	293.9	293.0	292.8	291.7
Miami, Fla. (11/77 = 100)	150.2	...	155.7	...	155.1	...	156.1	151.0	...	157.0	...	158.9	...	157.5
Milwaukee, Wis.	289.9	...	292.9	...	296.5	...	302.4	292.1	...	296.0	...	299.6	...	306.3
Minneapolis-St. Paul, Minn.-Wis.	...	301.7	...	304.1	...	313.8	...	...	301.2	...	303.6	...	313.3	...
New York, N.Y.-Northeastern N.J.	268.8	268.2	270.9	276.7	277.3	278.5	280.7	267.8	268.5	269.4	275.3	276.1	277.1	278.9
Northeast, Pa. (Scranton)	271.5	...	270.2	...	275.1	...	276.0	275.0	...	272.1	...	277.3	...	277.1
Philadelphia, Pa.-N.J.	274.4	275.1	275.1	279.7	281.1	281.3	283.0	274.5	274.5	274.7	279.1	280.9	280.7	282.1
Pittsburgh, Pa.	...	275.3	...	285.1	...	291.4	...	...	276.7	...	285.9	...	291.8	...
Portland, Oreg.-Wash.	291.1	...	282.1	...	292.5	...	289.2	288.6	...	279.7	...	290.6	...	285.8
St. Louis, Mo.-Ill.	273.4	...	285.7	...	290.2	...	294.1	273.0	...	284.5	...	289.2	...	293.1
San Diego, Calif.	313.9	...	329.2	...	334.8	...	325.6	308.0	...	323.3	...	329.4	...	321.1
San Francisco-Oakland, Calif.	...	298.8	...	304.6	...	304.3	...	...	297.8	...	303.4	...	302.6	...
Seattle-Everett, Wash.	288.6	...	301.2	...	298.6	...	302.2	284.3	...	297.1	...	292.9	...	298.3
Washington, D.C.-Md.-Va.	271.8	...	278.4	...	281.3	...	286.5	275.7	...	283.3	...	286.3	...	291.9

[1] The areas listed include not only the central city but the entire portion of the Standard Metropolitan Statistical Area, as defined for the 1970 Census of Population, except that the Standard Consolidated Area is used for New York and Chicago.

[2] Average of 85 cities.

21. Producer Price Indexes, by stage of processing

[1967 = 100]

Commodity grouping	Annual average 1981	1981			1982									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June[1]	July	Aug.	Sept.	Oct.
FINISHED GOODS														
Finished goods	269.8	274.3	274.7	275.4	277.9	277.9	277.3	277.3	277.8	279.9	281.7	282.4	281.4	284.1
Finished consumer goods	271.3	275.1	275.2	275.8	278.3	278.6	277.7	277.3	277.7	r280.1	282.0	282.7	282.0	284.2
Finished consumer foods	253.6	254.0	252.7	252.9	256.4	256.2	257.1	260.0	262.3	263.4	260.7	259.8	259.9	257.8
Crude	263.8	253.8	260.0	273.9	280.6	282.5	283.3	286.6	259.9	r254.7	240.6	238.6	227.8	232.0
Processed	250.8	252.0	249.9	249.0	252.1	254.0	254.5	257.3	260.3	262.0	260.4	259.6	260.6	258.0
Nondurable goods less foods	319.6	324.3	325.4	326.3	329.3	330.3	328.8	325.7	324.3	r328.7	334.7	336.7	338.4	339.7
Durable goods	218.6	224.5	224.7	225.4	226.2	224.0	223.9	224.1	225.0	r225.9	227.0	227.7	223.2	231.1
Consumer nondurable goods less food and energy	208.8	212.6	213.6	213.9	217.4	218.6	220.5	222.3	223.1	r223.5	223.3	224.0	225.4	227.4
Capital equipment	264.3	271.5	273.0	274.1	276.2	275.0	275.8	277.2	278.1	r279.2	280.9	281.4	279.5	283.8
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	306.0	309.4	309.0	309.4	311.0	311.1	310.6	309.9	309.8	r309.9	311.4	311.0	310.7	310.0
Materials and components for manufacturing	286.1	290.2	289.5	289.3	290.4	290.9	290.4	290.6	291.4	r289.8	289.6	289.1	290.2	289.5
Materials for food manufacturing	260.4	250.9	248.6	245.6	250.7	252.8	252.0	254.4	260.0	r260.7	260.0	258.3	257.6	254.7
Materials for nondurable manufacturing	285.8	290.9	290.4	288.8	289.0	289.3	288.8	287.6	287.8	r285.4	283.6	282.9	282.4	280.3
Materials for durable manufacturing	312.1	316.7	314.9	314.0	313.6	313.1	310.9	311.0	311.0	r307.5	308.2	307.2	310.2	310.0
Components for manufacturing	259.3	265.1	266.9	267.8	269.8	270.9	271.8	272.6	273.6	r273.6	274.2	274.6	276.1	276.9
Materials and components for construction	287.6	290.1	290.2	291.1	292.0	293.0	293.3	294.0	293.7	r294.5	294.0	293.3	293.4	293.2
Processed fuels and lubricants	585.4	596.9	595.1	598.1	604.4	596.8	583.0	579.9	570.9	r581.1	601.6	603.8	593.2	590.2
Manufacturing industries	496.6	497.5	496.4	499.0	505.9	497.8	486.1	487.5	481.4	r491.7	508.4	511.0	497.4	496.9
Nonmanufacturing industries	680.8	684.7	682.2	685.6	691.3	684.2	678.3	661.1	649.5	r659.5	683.4	685.2	677.5	672.1
Containers	276.1	280.9	280.6	280.2	282.5	285.5	286.3	287.0	287.0	r286.5	286.4	285.6	285.5	285.1
Supplies	263.8	266.6	267.2	268.3	269.8	270.4	270.6	272.1	273.4	r273.4	273.5	272.9	272.5	272.3
Manufacturing industries	253.1	258.2	259.2	261.0	262.6	263.3	264.5	265.3	266.7	r266.7	267.3	267.1	267.3	267.4
Nonmanufacturing industries	269.6	271.2	271.6	272.4	273.8	274.4	274.1	276.0	277.2	r277.1	277.0	276.2	275.5	275.1
Feeds	230.4	215.9	212.0	214.6	214.8	212.0	208.1	213.1	214.2	213.1	211.1	203.7	198.4	193.3
Other supplies	276.4	282.3	283.7	284.1	285.7	287.3	287.9	288.9	290.1	290.4	290.7	291.3	291.5	292.1
CRUDE MATERIALS														
Crude materials for further processing	329.0	319.9	313.9	311.5	318.4	321.6	320.0	322.6	328.3	r325.8	323.4	320.5	318.3	312.2
Foodstuffs and feedstuffs	257.4	245.7	238.3	239.7	242.6	248.3	247.9	254.4	262.6	r259.9	255.5	250.7	242.9	238.3
Nonfood materials	482.3	479.2	476.3	478.6	481.5	479.3	475.2	469.9	470.2	r467.7	470.0	471.1	474.3	475.4
Nonfood materials except fuel	413.7	404.1	397.8	390.2	390.5	394.8	387.1	378.8	376.6	370.0	369.1	369.6	369.6	372.2
Manufacturing industries	429.4	418.6	411.7	400.8	413.2	407.5	398.4	390.0	386.3	378.9	378.4	378.9	379.1	382.4
Construction	261.8	264.7	264.8	265.2	267.6	270.5	273.2	273.3	274.5	r274.2	270.4	270.7	269.1	267.1
Crude fuel	751.2	779.0	792.5	813.0	812.9	824.5	839.7	851.2	884.8	r883.9	903.1	906.9	926.3	918.4
Manufacturing industries	864.9	889.4	915.8	942.5	940.3	954.4	974.7	989.1	1006.7	r1,032.0	1,056.0	1,060.9	1,086.1	1,077.5
Nonmanufacturing industries	674.0	687.8	708.2	724.0	725.6	735.4	746.6	755.8	786.4	r780.5	796.0	798.9	813.9	808.3
SPECIAL GROUPINGS														
Finished goods excluding foods	273.3	279.1	280.0	280.9	283.0	282.4	281.9	281.1	281.0	283.4	286.7	287.6	286.6	290.8
Finished consumer goods excluding foods	278.5	281.6	282.4	283.2	285.2	284.9	284.0	282.3	281.8	r284.8	288.7	290.1	289.1	293.3
Finished consumer goods less energy	233.6	237.2	237.2	237.6	240.5	241.3	241.3	243.0	244.3	r245.1	244.5	244.7	243.8	246.4
Intermediate materials less foods and feeds	310.1	314.6	314.5	314.9	316.4	316.4	316.0	315.1	314.6	r314.7	316.4	316.3	316.0	315.5
Intermediate materials less energy	285.2	288.8	288.5	288.7	289.9	290.7	290.5	291.0	291.6	r290.8	290.6	290.0	290.6	290.1
Intermediate foods and feeds	250.3	238.3	235.2	235.2	238.8	239.4	237.7	240.9	245.0	r245.1	244.1	240.6	238.4	234.8
Crude materials less agricultural products	545.6	543.4	540.7	543.5	546.1	543.9	538.4	531.6	531.5	r529.1	531.8	532.2	536.2	537.9
Crude materials less energy	254.0	243.2	235.8	231.6	238.1	243.4	242.8	247.3	252.8	r248.7	245.0	241.5	235.6	230.0

[1] Data for June 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

22. Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981			1982									
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June[1]	July	Aug.	Sept.	Oct.
	All commodities	293.4	296.1	295.5	295.8	298.3	298.6	298.0	298.0	298.6	[1]299.3	300.6	300.4	299.5	299.9
	All commodities (1957-59 = 100)	311.3	314.2	313.5	313.8	316.5	316.8	316.2	316.2	316.8	[1]317.6	318.9	318.7	317.8	318.2
	Farm products and processed foods and feeds	251.5	249.0	242.5	241.0	246.0	248.4	247.5	251.8	256.8	[1]256.3	252.5	250.1	247.5	243.0
	Industrial commodities	304.1	308.0	309.3	310.0	311.8	311.6	311.0	309.9	309.6	[1]310.6	313.0	313.4	312.9	314.4
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	254.9	243.1	237.4	234.6	242.2	247.1	244.7	250.6	258.5	252.7	248.5	242.0	234.4	229.1
01-1	Fresh and dried fruits and vegetables	257.3	248.8	254.0	260.5	269.2	260.1	257.3	267.6	271.5	[1]284.5	258.4	257.7	230.3	222.3
01-2	Grains	248.4	227.6	226.5	213.6	225.2	222.2	220.9	226.0	228.2	225.7	212.8	197.2	187.3	183.2
01-3	Livestock	248.0	244.5	231.1	225.0	236.6	251.2	256.6	267.6	282.9	277.5	270.3	268.4	258.0	248.5
01-4	Live poultry	201.2	185.7	175.0	171.4	188.8	187.3	187.7	188.2	182.7	207.2	212.5	189.3	188.5	177.1
01-5	Plant and animal fibers	242.0	211.7	199.5	198.4	199.2	199.5	199.5	207.4	214.1	203.1	220.8	207.5	198.8	198.1
01-6	Fluid milk	287.4	294.3	299.2	298.7	287.6	285.0	282.5	280.3	278.8	278.8	279.0	278.8	281.9	285.0
01-7	Eggs	187.1	193.8	209.7	195.5	187.0	202.6	204.0	192.1	184.3	189.3	171.7	171.7	173.3	177.8
01-8	Hay, hayseeds, and oilseeds	274.1	230.4	221.1	218.8	218.4	217.6	213.7	222.8	227.3	219.3	220.0	218.1	201.8	194.3
01-9	Other farm products	273.6	263.3	273.1	260.2	260.1	273.7	273.8	274.2	273.9	271.8	265.5	274.4	276.8	274.0
02	Processed foods and feeds	248.7	248.6	244.3	243.6	247.1	248.1	248.1	251.1	254.4	255.6	254.8	253.6	253.6	251.0
02-1	Cereal and bakery products	255.5	256.9	256.5	255.1	256.6	253.3	253.3	253.5	252.6	[1]252.7	253.6	253.2	254.1	253.2
02-2	Meats, poultry, and fish	248.2	248.6	240.0	236.1	243.7	247.9	250.0	259.2	267.6	[1]271.2	266.1	262.3	265.7	258.9
02-3	Dairy products	245.6	246.8	246.9	247.2	247.7	248.0	248.0	248.4	248.5	248.7	248.8	249.0	249.3	250.0
02-4	Processed fruits and vegetables	261.2	271.7	270.5	271.8	273.2	276.3	275.9	276.2	273.8	[1]275.6	275.9	274.8	273.2	273.7
02-5	Sugar and confectionery	275.9	248.7	244.1	247.6	258.8	257.2	258.0	258.0	265.3	[1]269.1	276.1	269.0	279.1	278.7
02-6	Beverages and beverage materials	248.0	250.0	251.4	251.9	253.9	256.1	256.4	256.6	256.5	[1]256.7	256.7	257.3	256.8	258.4
02-7	Fats and oils	227.4	223.4	221.5	219.1	216.6	216.8	213.7	218.1	222.3	[1]221.8	221.4	218.0	211.8	214.9
02-8	Miscellaneous processed foods	250.1	249.9	250.1	250.1	251.0	250.9	249.5	249.6	248.0	249.6	249.0	245.9	248.9	247.7
02-9	Prepared animal feeds	230.2	218.1	214.7	217.2	217.4	214.8	211.4	216.3	217.4	216.4	214.6	207.9	204.5	200.1
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	199.7	204.0	203.6	203.4	205.0	205.6	205.0	205.4	205.4	[1]205.0	204.1	203.9	203.8	202.8
03-1	Synthetic fibers (12/75 = 100)	158.3	162.7	161.6	161.5	162.9	163.2	161.3	163.0	163.4	[1]162.8	162.4	163.1	163.4	162.0
03-2	Processed yarns and threads (12/75 = 100)	139.0	144.4	140.3	139.6	139.2	140.7	140.5	140.4	141.0	139.4	139.2	135.9	136.8	128.5
03-3	Gray fabrics (12/75 = 100)	148.8	148.0	147.4	147.2	148.2	147.3	148.8	148.3	145.8	[1]149.9	144.8	144.5	143.5	143.6
03-4	Finished fabrics (12/75 = 100)	125.2	126.7	126.5	125.6	128.8	127.1	125.8	125.4	125.2	124.0	123.9	124.4	123.8	123.4
03-81	Apparel	188.0	189.9	190.6	191.0	192.7	193.2	193.4	194.1	194.5	[1]195.9	193.1	193.5	193.5	193.5
03-82	Textile housefurnishings	226.7	233.0	233.4	233.6	237.6	240.8	241.4	241.8	239.5	[1]239.7	243.0	240.7	242.5	240.5
04	Hides, skins, leather, and related products	260.9	260.0	259.6	260.7	261.8	261.6	260.8	260.4	263.2	[1]261.8	261.3	263.2	264.8	264.7
04-2	Leather	319.8	313.7	311.3	312.3	319.0	317.7	313.3	310.6	308.8	[1]307.7	307.4	304.7	309.2	309.5
04-3	Footwear	240.9	238.6	238.6	240.1	238.9	238.6	238.8	244.8	244.5	[1]244.2	241.7	247.3	249.2	249.2
04-4	Other leather and related products	241.8	245.0	245.4	245.4	247.5	248.1	248.1	248.1	248.1	[1]249.6	252.0	249.9	252.9	252.4
05	Fuels and related products and power	694.5	698.1	698.1	702.5	705.1	687.8	689.7	670.6	662.2	[1]677.2	701.8	705.7	701.8	699.8
05-1	Coal	497.2	510.8	512.7	515.2	525.3	529.9	529.6	532.6	534.0	[1]533.6	538.6	538.1	541.4	539.7
05-2	Coke	458.4	469.7	469.7	469.7	469.7	469.7	467.5	467.5	467.5	[1]462.0	463.0	460.0	462.7	453.0
05-3	Gas fuels[2]	939.4	965.8	983.0	1,003.7	987.9	987.6	990.5	982.7	1,001.2	[1]1,027.5	1,056.4	1,073.7	1,118.6	1,133.6
05-4	Electric power	367.2	378.4	378.3	384.2	392.8	392.9	403.7	408.3	407.1	[1]405.7	418.9	415.3	415.4	409.1
05-61	Crude petroleum[3]	803.5	788.2	785.9	787.2	787.2	770.3	744.8	717.9	717.8	[1]718.2	718.7	718.7	718.8	735.8
05-7	Petroleum products, refined[4]	805.9	802.3	798.3	798.6	801.9	789.7	770.8	732.5	713.2	[1]739.4	777.1	781.8	783.1	754.9
06	Chemicals and allied products	287.6	292.4	292.0	291.8	292.9	293.8	294.6	294.3	295.0	[1]293.2	291.6	291.6	291.4	289.4
06-1	Industrial chemicals[5]	363.3	367.9	363.7	362.8	362.9	362.2	361.4	357.8	357.1	[1]351.2	349.7	349.7	349.3	347.6
06-21	Prepared paint	249.8	250.7	254.5	256.4	258.9	258.0	258.9	258.9	264.7	[1]264.7	265.1	265.1	265.1	265.1
06-22	Paint materials	300.1	308.1	308.3	305.8	308.6	308.4	308.8	308.7	308.9	[1]304.8	304.3	302.3	303.0	303.0
06-3	Drugs and pharmaceuticals	193.5	198.5	199.2	198.9	202.2	204.4	205.9	208.8	208.9	[1]209.7	209.9	211.1	212.6	214.7
06-4	Fats and oils, inedible	295.6	277.7	282.5	280.4	272.8	274.2	280.1	282.6	288.4	287.5	276.2	254.2	254.1	242.3
06-5	Agricultural chemicals and chemical products	285.0	293.1	295.7	294.9	296.6	298.0	297.1	295.6	294.8	[1]294.1	291.5	290.6	290.1	289.4
06-6	Plastic resins and materials	298.2	298.5	293.2	294.2	288.1	287.3	285.5	288.0	283.2	[1]282.1	280.6	282.4	281.5	281.6
06-7	Other chemicals and allied products	254.2	256.9	258.9	260.0	263.6	264.9	268.5	270.0	272.7	[1]273.6	270.7	271.8	270.7	268.1
07	Rubber and plastic products	232.6	237.3	238.0	238.3	237.3	239.3	240.8	241.1	242.1	[1]242.5	243.1	243.6	243.3	243.0
07-1	Rubber and rubber products	254.2	262.9	264.4	264.6	262.5	266.0	268.7	268.6	269.0	[1]269.3	271.8	272.5	271.7	271.1
07-11	Crude rubber	261.8	270.8	270.0	260.8	261.8	262.1	263.5	263.3	263.7	[1]262.5	269.2	276.6	276.5	272.4
07-12	Tires and tubes	250.6	257.1	255.9	255.4	253.6	250.7	253.7	250.4	254.9	255.3	255.6	257.9	256.7	255.8
07-13	Miscellaneous rubber products	251.4	261.1	260.7	267.2	263.6	268.8	274.3	274.7	278.8	[1]279.5	286.1	288.0	287.5	287.1
07-2	Plastic products (6/78 = 100)	128.5	130.3	130.3	130.6	130.5	131.0	132.3	132.6	132.5	[1]132.6	132.3	132.3	132.5	132.4
08	Lumber and wood products	292.8	284.3	282.1	285.4	285.5	285.2	285.3	288.5	284.6	[1]289.0	288.3	284.4	283.0	279.8
08-1	Lumber	325.1	311.7	306.6	309.9	310.0	306.1	309.2	312.4	310.5	[1]315.8	319.2	312.7	311.3	308.8
08-2	Millwork	273.4	271.3	271.8	273.7	277.1	278.8	276.5	278.6	276.3	[1]280.5	281.8	280.2	279.5	278.8
08-3	Plywood	245.7	234.3	233.5	238.7	237.4	235.1	236.5	234.0	230.5	[1]239.2	232.4	229.3	228.4	224.0
08-4	Other wood products	239.1	239.9	239.3	239.4	238.2	238.7	238.6	237.7	237.4	[1]236.8	236.0	235.8	235.6	235.8

See footnotes at end of table.

22. Continued—Producer Price Indexes, by commodity groupings

[1967=100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981 Oct.	1981 Nov.	1981 Dec.	1982 Jan.	1982 Feb.	1982 Mar.	1982 Apr.	1982 May	1982 June[1]	1982 July	1982 Aug.	1982 Sept.	1982 Oct.
	INDUSTRIAL COMMODITIES—Continued														
09	Pulp, paper, and allied products	273.8	279.2	280.4	281.0	285.5	286.3	287.4	288.5	288.6	r288.5	288.9	289.1	289.2	289.2
09-1	Pulp, paper, and products, excluding building paper and board	270.8	275.7	275.8	275.6	276.1	276.8	276.6	275.3	274.8	r274.1	272.9	272.8	271.8	270.4
09-11	Woodpulp	397.1	402.3	413.7	413.7	410.3	410.3	411.6	398.9	393.3	r380.0	370.5	369.2	367.2	352.5
09-12	Wastepaper	175.7	165.1	144.5	143.4	135.2	128.8	129.2	126.1	121.5	115.2	115.6	116.0	116.0	116.0
09-13	Paper	279.8	287.8	287.4	287.2	289.2	289.8	289.6	289.4	289.2	r287.8	287.0	288.1	288.0	285.8
09-14	Paperboard	258.1	261.7	261.6	260.0	258.7	261.4	261.1	261.2	258.8	255.9	255.0	255.5	250.7	248.0
09-15	Converted paper and paperboard products	258.8	263.2	263.1	263.2	263.9	264.7	264.5	264.3	264.3	r264.5	264.8	264.4	264.2	263.9
09-2	Building paper and board	231.7	233.3	232.1	230.3	233.8	231.4	236.6	238.3	240.2	r240.0	239.2	243.8	242.8	241.5
10	Metals and metal products	300.4	305.3	304.2	303.3	304.7	304.2	302.9	303.1	302.8	r299.3	300.2	300.2	301.8	302.1
10-1	Iron and steel	333.8	341.3	340.0	339.9	343.1	342.9	342.5	342.8	341.3	338.3	337.4	337.4	336.6	337.6
10-17	Steel mill products	337.6	348.7	348.6	348.9	350.6	350.3	350.5	352.2	352.1	349.9	349.1	348.7	348.4	349.8
10-2	Nonferrous metals	285.8	285.4	281.1	277.1	274.4	273.6	267.2	266.1	263.6	r253.4	256.1	256.1	263.4	263.2
10-3	Metal containers	315.6	318.2	318.1	318.8	324.3	326.2	327.2	330.0	330.2	r329.0	329.9	328.8	328.7	328.7
10-4	Hardware	263.2	268.5	271.5	272.0	274.1	274.8	278.2	278.5	278.9	r280.3	278.9	280.3	280.4	280.8
10-5	Plumbing fixtures and brass fittings	267.5	272.9	273.1	274.0	274.8	276.4	279.1	280.3	281.0	r282.8	282.0	274.7	277.0	277.8
10-6	Heating equipment	224.2	229.0	228.8	229.9	233.4	233.1	235.4	236.0	237.2	r238.5	238.1	238.6	239.3	238.7
10-7	Fabricated structural metal products	295.5	302.6	303.2	303.0	303.4	304.0	304.5	305.2	304.9	r305.3	303.8	304.4	304.2	303.7
10-8	Miscellaneous metal products	270.5	276.1	278.0	278.3	281.2	278.7	279.0	279.7	284.5	r283.9	288.8	288.9	289.3	289.7
11	Machinery and equipment	263.3	269.3	270.4	272.0	274.1	275.4	276.2	277.6	278.2	r278.6	279.4	279.7	280.3	280.9
11-1	Agricultural machinery and equipment	288.3	295.5	300.8	302.8	303.1	304.6	306.4	306.8	308.2	r309.7	310.2	311.4	313.6	317.0
11-2	Construction machinery and equipment	320.8	328.3	329.6	332.0	337.0	337.9	339.2	341.5	343.5	r343.9	346.1	346.4	347.5	348.6
11-3	Metalworking machinery and equipment	301.3	306.6	307.9	312.9	315.9	317.2	317.8	318.6	320.7	r321.2	321.9	322.4	322.6	322.4
11-4	General purpose machinery and equipment	288.7	295.1	298.2	297.9	300.0	301.3	302.0	303.4	303.8	r303.5	304.4	304.5	304.5	305.5
11-6	Special industry machinery and equipment	307.9	314.6	315.0	318.4	320.4	320.7	321.3	322.9	323.9	r325.0	327.1	326.9	327.0	327.9
11-7	Electrical machinery and equipment	220.2	225.3	226.0	227.0	229.7	229.5	230.3	231.7	231.3	r231.5	232.0	232.0	232.5	233.0
11-9	Miscellaneous machinery	252.6	259.0	259.8	260.4	261.4	264.0	264.9	266.1	267.9	r269.5	269.9	270.3	271.1	270.9
12	Furniture and household durables	198.5	201.3	202.1	202.9	203.5	204.6	205.5	206.0	206.5	r207.0	206.8	207.4	207.7	208.4
12-1	Household furniture	219.7	222.8	225.1	226.6	227.5	227.4	227.6	229.7	230.0	r230.2	230.9	231.4	231.6	231.3
12-2	Commercial furniture	257.5	262.1	263.3	263.9	268.7	271.2	273.6	274.2	275.2	r276.0	277.8	278.0	278.6	278.8
12-3	Floor coverings	178.7	180.9	182.3	181.4	180.3	180.6	180.6	181.1	181.3	r181.9	180.1	179.4	180.3	180.3
12-4	Household appliances	187.3	190.8	190.9	191.3	193.4	195.3	197.3	197.8	198.9	r198.6	199.3	200.1	200.4	200.5
12-5	Home electronic equipment	89.2	89.1	89.0	89.6	89.3	89.6	89.1	87.9	88.0	r88.4	88.2	88.0	87.7	88.0
12-6	Other household durable goods	281.0	285.8	285.3	286.2	283.4	283.7	285.0	285.9	285.4	r286.1	283.6	287.4	288.1	283.8
13	Nonmetallic mineral products	309.5	313.3	313.7	313.5	315.6	318.0	318.9	320.2	321.2	r320.8	320.3	320.4	320.2	321.2
13-11	Flat glass	212.8	218.5	218.5	216.1	216.2	216.2	216.2	216.2	226.4	r226.4	226.1	226.1	221.1	221.1
13-2	Concrete ingredients	296.3	298.4	298.5	298.7	306.2	308.4	308.8	309.5	312.5	r312.7	310.6	311.7	311.2	311.9
13-3	Concrete products	291.2	293.3	293.4	293.6	295.5	295.9	296.3	297.7	298.2	r298.5	298.2	298.3	298.6	298.7
13-4	Structural clay products, excluding refractories	249.8	256.2	256.5	257.5	257.5	257.7	257.7	258.1	258.6	r258.9	258.8	258.8	259.5	259.5
13-5	Refractories	302.4	307.8	308.9	311.3	316.8	335.1	337.4	338.7	338.5	r340.4	340.9	341.2	341.3	341.3
13-6	Asphalt roofing	407.5	402.9	410.2	405.6	401.3	400.4	394.4	396.7	385.5	r388.4	392.3	392.5	400.2	405.1
13-7	Gypsum products	256.2	252.4	251.3	249.7	250.4	255.0	260.7	263.2	259.4	256.4	255.8	253.9	253.9	255.1
13-8	Glass containers	328.7	335.5	335.5	335.5	335.4	362.2	358.0	358.1	358.1	r358.1	357.4	357.3	357.9	358.4
13-9	Other nonmetallic minerals	463.8	473.3	473.5	474.7	474.7	478.7	479.6	479.1	471.3	465.2	466.4	466.2	466.2	470.4
14	Transportation equipment (12/68 = 100)	235.4	244.5	246.3	246.8	248.6	245.2	245.2	245.8	247.5	r249.1	250.4	251.2	245.0	258.4
14-1	Motor vehicles and equipment	237.6	247.8	248.9	249.5	250.8	248.8	248.8	247.2	249.2	r251.1	252.5	253.3	245.0	258.1
14-4	Railroad equipment	336.1	338.7	341.3	340.1	345.8	345.8	346.3	343.5	342.8	r342.8	349.3	354.7	354.7	357.5
15	Miscellaneous products	265.7	268.5	269.5	267.6	268.3	273.5	272.7	273.2	272.2	r271.5	273.8	272.4	280.3	285.9
15-1	Toys, sporting goods, small arms, ammunition	211.9	213.0	212.7	213.3	218.4	220.1	220.7	221.0	221.8	r221.9	222.9	224.4	224.7	223.7
15-2	Tobacco products	268.3	278.2	278.2	278.2	278.2	306.6	306.6	306.7	307.0	r307.0	311.3	311.3	328.8	366.0
15-3	Notions	258.8	269.7	269.7	269.7	270.3	270.4	271.5	271.5	280.1	r280.1	280.3	280.3	280.3	280.3
15-4	Photographic equipment and supplies	210.0	208.9	209.0	209.1	208.9	210.5	212.1	214.2	210.6	r210.4	210.6	210.6	211.6	210.2
15-5	Mobile homes (12/74 = 100)	156.8	158.1	158.3	158.3	158.5	158.6	161.9	162.2	162.5	r162.4	162.5	162.5	162.8	161.5
15-9	Other miscellaneous products	347.4	348.5	344.8	344.6	342.2	341.1	334.5	334.1	331.3	r329.6	333.1	326.5	344.7	344.7

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[1] Data for June 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Prices for natural gas are lagged 1 month.

[3] Includes only domestic production.

[4] Most prices for refined petroleum products are lagged 1 month.

[5] Some prices for industrial chemicals are lagged 1 month.

r = revised.

23. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1981	1981			1982									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June[1]	July	Aug.	Sept.	Oct.
All commodities — less farm products	295.7	299.5	299.4	300.0	302.0	301.9	301.4	300.9	301.2	r302.2	304.1	304.3	303.9	304.7
All foods	251.8	249.1	247.4	247.6	251.6	253.2	251.6	254.7	257.9	258.0	258.8	256.9	255.4	252.9
Processed foods	252.1	250.0	247.8	248.5	250.5	251.9	252.1	255.1	259.0	r260.8	259.8	258.9	258.3	256.5
Industrial commodities less fuels	263.7	268.7	269.0	269.4	271.1	271.5	271.7	272.3	272.8	r272.4	272.7	272.7	272.6	274.4
Selected textile mill products (Dec. 1975 = 100)	135.6	138.2	138.4	137.9	139.3	139.7	139.0	139.0	138.7	r138.2	137.5	137.6	137.7	137.3
Hosiery	134.3	136.5	136.5	136.7	136.9	136.9	137.5	138.0	138.5	138.5	138.5	138.5	138.7	138.7
Underwear and nightwear	203.4	204.7	205.7	206.3	213.9	215.6	215.9	215.9	215.9	r217.4	218.0	218.1	218.0	219.2
Chemicals and allied products, including synthetic rubber and fibers and yarns	278.4	283.8	283.2	283.1	284.3	285.1	285.6	285.6	286.1	r284.5	283.0	283.4	283.2	282.3
Pharmaceutical preparations	188.9	192.8	192.5	193.3	198.8	199.3	201.1	204.5	205.8	r205.4	205.7	207.2	209.3	211.5
Lumber and wood products, excluding millwork	303.0	290.1	288.4	290.7	289.9	287.9	288.5	290.5	288.1	r294.5	294.6	289.2	287.9	283.4
Steel mill products, including fabricated wire products	337.6	348.7	348.8	348.9	350.6	350.3	350.5	352.2	352.1	349.9	348.7	348.4	348.1	349.4
Finished steel mill products, excluding fabricated wire products	336.2	347.4	347.2	347.5	349.3	348.9	349.2	351.0	350.9	348.6	347.7	347.3	347.0	348.6
Finished steel mill products, including fabricated wire products	336.2	347.4	347.2	347.5	349.3	348.9	349.2	351.0	350.9	348.6	347.4	347.0	346.7	348.2
Special metals and metal products	279.4	286.7	286.8	286.6	287.9	286.0	285.3	285.6	286.3	r285.2	286.3	286.6	284.2	280.9
Fabricated metal products	280.0	286.0	287.0	287.1	288.4	289.0	289.9	290.8	292.6	r292.8	294.0	293.9	294.1	294.1
Copper and copper products	203.6	201.9	188.9	185.4	184.5	184.1	190.8	191.6	193.0	r179.7	179.5	180.1	181.4	179.2
Machinery and motive products	256.7	264.3	265.8	266.9	268.9	269.1	269.5	269.6	270.7	r271.7	272.8	273.3	270.8	276.3
Machinery and equipment, except electrical	288.5	295.0	298.4	298.4	300.7	302.3	303.1	304.6	305.7	r306.2	307.2	307.7	308.3	308.9
Agricultural machinery, including tractors	297.3	305.7	312.5	314.7	315.1	316.0	318.4	319.0	319.9	r321.3	320.5	321.5	324.6	329.8
Metalworking machinery	329.7	336.7	338.3	341.2	343.8	344.9	346.4	348.6	349.3	r350.1	352.7	353.2	353.6	354.2
Numerically controlled machine tools (Dec. 1971 = 100)	236.3	241.8	242.2	242.0	240.1	239.8	238.9	238.9	238.9	r240.0	239.6	239.6	238.8	238.8
Total tractors	324.7	338.3	342.2	342.3	346.9	346.9	349.1	352.4	353.6	r354.1	354.2	354.8	358.9	360.8
Agricultural machinery and equipment less parts	289.8	297.8	303.5	305.8	308.5	307.4	309.7	310.3	311.0	r312.2	311.8	312.5	315.1	318.5
Farm and garden tractors less parts	300.1	313.0	318.6	318.7	318.7	318.7	323.5	323.5	325.0	r325.8	324.2	324.8	331.8	334.9
Agricultural machinery, excluding tractors less parts	295.2	299.9	303.5	310.9	311.6	313.2	314.6	315.6	316.1	r317.9	317.7	319.0	319.1	325.9
Industrial valves	315.9	322.4	323.4	325.3	326.6	330.2	330.5	331.1	331.2	r330.6	329.2	329.2	329.4	329.3
Industrial fittings	302.1	304.1	304.1	304.1	304.1	304.1	304.1	309.1	309.1	309.1	310.2	310.2	309.2	307.3
Construction materials	283.0	284.6	284.1	285.2	285.6	286.9	287.5	289.2	289.2	r290.5	290.0	289.2	287.9	287.7

[1] Data for June 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

24. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1981	1981			1982									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June[1]	July	Aug.	Sept.	Oct.
Total durable goods	269.8	275.0	275.4	276.0	277.6	277.4	277.4	278.1	278.5	r278.3	279.1	279.1	278.7	281.4
Total nondurable goods	312.4	312.8	311.4	311.4	314.7	315.4	314.2	313.6	314.5	316.0	317.7	317.3	315.9	314.3
Total manufactures	286.0	289.8	289.7	289.9	291.9	292.0	291.4	291.1	291.3	292.4	293.9	293.9	293.1	293.9
Durable	269.7	275.1	275.8	276.5	278.0	277.8	277.8	278.7	279.2	r279.3	280.1	280.1	279.7	282.4
Nondurable	303.6	305.5	304.5	304.3	306.8	307.2	305.9	304.1	304.0	r306.3	308.6	308.6	307.3	305.9
Total raw or slightly processed goods	330.7	326.4	323.3	323.6	328.9	330.6	329.7	331.9	335.1	r333.4	333.3	331.8	330.3	328.2
Durable	271.2	263.7	253.4	247.8	253.8	253.7	250.1	245.3	238.7	r225.4	225.0	225.7	227.0	225.1
Nondurable	334.0	330.0	327.4	328.2	333.4	335.2	334.5	337.2	341.1	r340.3	340.2	338.6	336.9	334.8

[1] Data for June 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

25. Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981			1982									
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June[1]	July	Aug.	Sept.	Oct.
	MINING														
1011	Iron ores (12/75 = 100)	167.6	168.1	171.3	171.3	171.3	171.3	171.3	171.3	177.1	177.1	177.1	177.1	177.1	177.1
1092	Mercury ores (12/75 = 100)	348.0	354.1	354.1	343.7	347.9	313.7	325.0	327.0	308.3	307.5	306.2	287.5	289.4	312.5
1211	Bituminous coal and lignite	483.7	506.2	507.8	510.3	520.9	525.6	524.9	527.9	529.9	r530.0	533.5	534.7	536.3	536.0
1311	Crude petroleum and natural gas	898.6	900.8	907.5	921.7	919.7	913.9	905.4	893.3	901.2	r914.3	925.3	926.7	938.4	946.7
1442	Construction sand and gravel	277.4	279.7	279.8	280.7	287.4	289.9	293.1	292.6	295.0	r295.8	295.3	296.5	296.0	297.3
1455	Kaolin and ball clay (6/76 = 100)	138.7	143.4	143.4	143.4	149.6	149.6	149.6	151.7	151.7	151.7	151.7	151.7	151.7	151.7
	MANUFACTURING														
2011	Meatpacking plants	243.1	244.1	237.0	234.1	237.6	244.4	247.3	254.0	264.7	r265.6	258.4	253.0	253.1	242.6
2013	Sausages and other prepared meats	241.4	252.2	248.9	247.0	245.6	251.0	248.6	253.0	266.2	r274.0	272.2	275.4	282.3	277.5
2016	Poultry dressing plants	182.0	175.5	172.8	169.7	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
2021	Creamery butter	274.8	279.2	279.5	275.0	275.0	276.4	276.8	275.3	274.9	274.9	275.0	276.3	276.8	276.8

See footnotes at end of table.

25. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981			1982									
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June[1]	July	Aug.	Sept.	Oct.
	MANUFACTURING—Continued														
2022	Cheese, natural and processed (12/72 = 100)	215.7	215.4	215.9	218.4	218.6	217.9	216.7	216.5	217.1	r218.1	218.6	218.8	218.7	221.2
2024	Ice cream and frozen desserts (12/72 = 100)	211.9	212.5	212.5	212.7	212.8	212.8	210.9	214.2	214.2	214.2	213.6	213.6	216.5	218.5
2033	Canned fruits and vegetables	248.5	257.0	258.4	258.9	260.8	262.6	262.4	262.3	262.6	r265.1	265.5	263.2	260.1	261.1
2034	Dehydrated food products (12/73 = 100)	177.6	182.1	181.4	182.1	184.0	181.8	181.5	181.5	178.5	178.5	180.4	180.0	179.8	181.0
2041	Flour mills (12/71 = 100)	196.0	191.1	191.5	189.2	191.5	187.5	187.3	192.5	188.4	189.1	185.5	180.2	182.2	179.8
2044	Rice milling	277.2	247.3	235.4	215.1	205.9	192.2	183.5	177.9	183.0	180.3	177.6	183.0	183.0	183.0
2048	Prepared foods, n.e.c. (12/75 = 100)	124.5	117.3	116.4	116.0	116.0	115.9	114.6	115.4	116.7	r115.6	115.4	113.3	109.6	107.6
2061	Raw cane sugar	273.5	219.9	224.3	230.8	247.6	245.1	233.0	242.9	269.2	286.7	311.5	318.1	295.6	291.3
2063	Beet sugar	314.3	250.3	230.4	250.5	268.4	272.2	272.2	269.7	277.3	r277.3	290.5	297.4	300.8	298.1
2067	Chewing gum	309.8	303.2	303.2	303.2	303.3	303.3	303.3	303.4	303.4	303.4	303.3	304.7	304.7	304.8
2074	Cottonseed oil mills	190.0	172.0	167.2	182.4	184.9	170.5	158.1	164.7	167.9	170.2	174.6	173.1	164.5	157.6
2075	Soybean oil mills	245.8	229.7	221.2	221.9	223.1	220.4	216.6	225.8	232.0	226.4	224.1	205.5	200.6	198.3
2077	Animal and marine fats and oils	288.0	274.0	272.3	266.6	260.4	262.6	271.8	273.3	271.5	272.3	264.3	242.4	241.2	232.1
2083	Malt	262.5	275.4	275.4	275.4	267.1	267.1	267.1	259.1	259.8	259.8	259.8	259.8	251.2	251.2
2085	Distilled liquor, except brandy (12/75 = 100)	134.7	135.5	137.9	137.9	140.1	137.9	140.2	140.2	139.8	139.8	139.8	140.4	140.4	140.4
2091	Canned and cured seafoods (12/73 = 100)	187.8	188.2	188.3	188.5	187.2	187.0	187.7	188.2	188.0	188.4	187.8	184.3	186.2	186.3
2092	Fresh or frozen packaged fish	369.1	356.9	360.8	380.5	398.8	389.2	419.1	432.2	425.9	r441.3	418.9	426.2	446.7	453.9
2095	Roasted coffee (12/72 = 100)	238.1	238.2	239.2	240.4	245.1	247.7	248.8	250.6	248.0	r247.8	247.0	246.4	244.7	246.0
2098	Macaroni and spaghetti	252.0	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	255.5
2111	Cigarettes	277.7	288.4	288.4	288.4	288.4	319.7	319.7	319.8	319.9	r319.9	324.9	324.9	345.1	387.4
2121	Cigars	170.0	174.5	174.5	174.5	174.5	178.6	178.6	179.6	179.6	r179.6	176.6	176.6	176.8	176.8
2131	Chewing and smoking tobacco	320.7	326.1	326.1	326.1	326.1	349.4	349.4	349.4	353.6	353.6	358.3	358.3	358.5	375.1
2211	Weaving mills, cotton (12/72 = 100)	232.7	233.2	229.8	227.6	227.3	227.1	226.4	226.3	226.4	r224.4	222.0	221.7	218.6	215.4
2221	Weaving mills, synthetic (12/77 = 100)	136.7	139.4	139.8	139.5	139.8	139.7	140.0	139.2	138.5	r137.9	137.5	137.1	136.4	136.3
2251	Women's hosiery, except socks (12/75 = 100)	113.5	115.2	115.1	115.2	115.6	115.6	116.1	116.2	116.9	r116.9	117.0	117.0	117.0	116.8
2254	Knit underwear mills	210.2	210.9	212.8	213.0	225.2	225.2	225.9	226.0	226.1	r228.8	230.8	231.1	231.2	231.4
2257	Circular knit fabric mills (6/76 = 100)	110.9	112.0	112.4	111.8	112.4	113.2	110.7	110.2	109.9	r108.3	108.6	108.7	108.6	108.0
2261	Finishing plants, cotton (6/76 = 100)	144.9	144.9	143.5	141.4	140.5	140.3	140.8	141.6	141.5	r141.4	140.2	139.8	138.4	136.8
2262	Finishing plants, synthetics, silk (6/76 = 100)	129.5	129.1	129.1	128.6	129.4	129.0	128.5	128.5	128.4	r127.6	126.7	128.7	128.1	127.4
2272	Tufted carpets and rugs	154.2	155.7	157.0	156.7	155.5	155.7	155.7	156.1	156.4	r157.2	156.1	155.4	156.1	156.1
2281	Yarn mills, except wool (12/71= 100)	221.7	222.4	219.9	217.2	216.3	215.7	215.4	214.4	214.7	r213.8	213.7	213.2	213.1	211.8
2282	Throwing and winding mills (6/76 = 100)	139.3	154.5	145.6	146.0	145.7	150.3	150.0	151.0	152.7	r149.4	149.0	140.4	142.5	124.4
2284	Thread mills (6/76 = 100)	151.4	157.0	157.0	156.8	156.8	156.8	156.8	156.7	156.6	r156.6	156.5	158.0	158.0	157.9
2298	Cordage and twine (12/77 = 100)	134.8	139.3	139.3	140.7	141.0	141.0	141.0	141.0	141.0	141.0	141.0	141.0	142.6	142.6
2311	Men's and boys' suits and coats	224.0	227.4	228.4	230.5	233.7	233.6	233.8	234.4	234.6	r236.3	237.2	239.8	240.0	240.0
2321	Men's and boys' shirts and nightwear	209.5	212.4	212.6	213.4	173.4	215.9	216.9	217.3	217.5	r217.8	216.0	216.1	219.4	219.4
2322	Men's and boys' underwear	230.6	230.8	233.0	233.0	246.9	246.9	247.4	247.4	247.4	251.2	251.2	251.2	250.7	251.3
2323	Men's and boys' neckwear (12/75 = 100)	114.6	113.9	113.9	113.9	115.3	117.3	117.3	117.3	117.3	121.3	121.3	121.3	121.3	121.3
2327	Men's and boys' separate trousers	186.2	186.8	186.9	187.1	188.4	188.4	188.4	194.1	195.8	r195.9	195.6	195.6	195.6	195.5
2328	Men's and boys' work clothing	248.6	253.1	253.2	253.3	252.5	254.2	254.9	255.2	254.7	254.1	252.9	253.1	252.3	252.0
2331	Women's and misses' blouses and waists (6/78 = 100)	120.6	126.4	126.7	126.7	126.5	126.5	126.5	126.5	126.5	r126.6	123.6	123.8	123.8	123.8
2335	Women's and misses' dresses (12/77 = 100)	121.3	123.4	124.1	122.7	123.0	123.0	123.1	122.9	122.9	r123.7	123.7	123.6	122.7	122.8
2341	Women's and children's underwear (12/72 = 100)	169.7	170.6	171.6	171.6	174.7	174.8	175.0	175.0	176.6	r178.8	179.4	179.4	178.1	178.6
2342	Brassieres and allied garments (12/75 = 100)	136.7	138.8	138.9	140.1	145.1	148.8	148.8	148.8	148.1	r148.1	148.4	148.4	150.2	149.8
2361	Children's dresses and blouses (12/77 = 100)	120.9	122.0	122.5	123.2	123.2	123.2	123.2	122.2	122.2	r122.2	119.4	120.3	118.6	118.6
2381	Fabric dress and work gloves	289.3	289.2	289.2	289.2	293.8	297.4	295.5	295.5	295.5	294.5	294.5	288.2	288.2	287.4
2394	Canvas and related products (12/77 = 100)	132.0	137.6	137.6	139.7	144.9	144.9	147.2	145.7	145.9	r143.1	143.8	143.8	145.4	148.0
2396	Automotive and apparel trimmings (12/77 = 100)	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
2421	Sawmills and planing mills (12/71 = 100)	228.2	219.5	216.5	218.6	218.0	216.9	216.9	218.8	217.4	r220.1	221.6	217.5	216.3	213.5
2436	Softwood veneer and plywood (12/75 = 100)	142.0	129.3	129.0	134.5	132.5	130.5	131.8	129.1	125.9	133.6	129.6	126.7	128.6	124.7
2439	Structural wood members, n.e.c. (12/75 = 100)	156.6	154.8	154.2	153.2	153.9	153.5	152.6	153.4	152.8	r154.2	154.5	155.1	154.4	154.1
2448	Wood pallets and skids (12/75 = 100)	152.5	152.0	150.4	149.9	149.8	149.0	148.2	145.9	144.7	144.2	144.1	143.8	143.8	144.3
2451	Mobile homes (12/74 = 100)	156.9	159.2	159.3	160.3	160.4	160.5	162.7	163.0	163.3	r163.2	163.4	163.4	163.7	162.6
2492	Particleboard (12/75 = 100)	173.6	168.0	166.9	170.3	172.6	170.7	177.7	178.2	178.0	r178.1	175.4	174.5	175.3	173.4
2511	Wood household furniture (12/71 = 100)	197.4	201.0	202.0	202.8	203.6	204.3	205.1	207.4	207.7	r208.0	208.1	208.0	208.0	208.8
2512	Upholstered household furniture (12/71 = 100)	174.0	175.6	179.5	182.1	184.4	179.3	179.3	181.8	182.3	r182.3	184.1	185.5	185.9	183.2
2515	Mattresses and bedsprings	192.3	195.2	197.5	198.0	204.4	205.6	205.6	205.7	205.9	r205.9	210.1	210.4	210.4	210.3
2521	Wood office furniture	254.2	257.1	257.0	257.6	261.9	270.7	270.8	270.8	270.8	r270.8	272.0	272.4	272.4	272.4
2611	Pulp mills (12/73 = 100)	252.4	255.0	262.5	262.5	258.6	258.6	260.7	253.6	249.7	r244.3	238.5	237.2	235.4	232.6
2621	Paper mills, except building (12/74 = 100)	156.2	159.8	159.7	159.6	162.0	162.0	162.0	161.3	160.3	r160.6	160.7	159.9	159.8	159.8
2631	Paperboard mills (12/74 = 100)	151.7	153.6	153.5	152.7	152.5	153.4	153.0	152.8	151.3	r149.8	149.1	149.4	148.5	144.8
2647	Sanitary paper products	343.4	344.0	344.1	344.6	344.6	344.6	344.5	344.5	343.6	r346.2	346.4	349.2	350.0	349.5
2654	Sanitary food containers	244.8	253.4	253.3	253.3	254.0	256.9	260.0	259.9	259.9	r259.9	261.4	261.4	262.2	263.2
2655	Fiber cans, drums, and similar products (12/75 = 100)	163.0	167.6	167.6	170.0	176.4	176.5	176.5	176.5	176.7	176.7	176.7	177.5	177.5	177.8
2812	Alkalies and chlorine (12/73 = 100)	305.9	317.7	317.0	324.8	329.4	335.2	335.6	322.0	341.1	r334.8	324.4	325.8	324.3	313.4
2821	Plastics materials and resins (6/76 = 100)	150.8	156.3	153.7	154.3	150.7	152.6	151.0	152.6	150.9	r150.3	150.2	150.8	151.1	150.7
2822	Synthetic rubber	293.3	301.0	301.4	302.7	303.9	306.1	306.7	306.6	307.1	303.8	301.8	299.9	298.8	296.6
2824	Organic fiber, noncellulosic	155.6	164.2	162.5	161.9	161.8	162.9	161.6	162.5	161.6	161.3	160.5	159.5	160.1	157.6
2873	Nitrogenous fertilizers (12/75 = 100)	142.8	142.9	144.2	142.9	142.4	142.6	142.2	141.7	140.5	139.5	138.1	136.0	135.6	134.6
2874	Phosphatic fertilizers	254.1	259.4	258.5	259.0	261.0	263.5	261.6	258.2	258.2	r257.3	256.6	248.7	245.9	247.1
2875	Fertilizers, mixing only	270.7	273.8	273.7	270.5	274.3	276.8	278.4	278.7	278.6	r279.0	278.6	277.9	275.4	274.7
2892	Explosives	311.9	318.7	316.5	315.6	314.9	317.6	320.5	327.2	326.1	r326.5	318.4	324.8	337.3	335.6
2911	Petroleum refining (6/76 = 100)	294.4	294.6	293.3	293.1	293.0	289.1	281.7	267.4	259.2	r267.9	281.4	283.7	280.3	278.5
2951	Paving mixtures and blocks (12/75 = 100)	194.3	196.3	198.4	196.0	197.0	198.0	198.1	197.1	196.3	r195.0	194.8	194.4	194.8	196.7
2952	Asphalt felts and coatings (12/75 = 100)	176.9	174.9	178.1	178.1	174.2	173.8	171.2	168.1	168.4	r173.1	171.3	171.1	174.5	178.5
3011	Tires and inner tubes (12/73 = 100)	215.8	221.0	220.1	221.2	222.0	222.4	220.3	216.7	221.3	221.5	221.7	226.2	221.7	221.9

25. Continued—Producer Price Indexes for the output of selected SIC industries

[1967=100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981			1982									
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June[1]	July	Aug.	Sept.	Oct.
3021	Rubber and plastic footwear (12/71 = 100)	184.4	185.0	185.0	185.2	186.1	186.4	186.1	186.0	186.6	187.0	187.0	186.8	185.9	185.9
3031	Reclaimed rubber (12/73 = 100)	194.1	200.3	200.3	200.3	200.3	200.4	207.2	209.2	209.5	r210.7	207.7	207.4	207.8	207.5
3079	Miscellaneous plastic products (6/78 = 100)	128.9	130.8	130.8	131.0	131.1	131.8	132.8	133.2	133.0	r133.1	132.8	132.7	132.7	132.7
3111	Leather tanning and finishing (12/77 = 100)	150.7	148.2	148.8	147.5	150.8	149.3	147.9	146.8	147.4	r147.3	147.5	148.5	148.5	148.7
3143	Men's footwear, except athletic (12/75 = 100)	168.3	170.5	170.8	171.3	173.1	172.2	173.5	174.9	175.1	r171.6	171.6	175.5	175.7	175.8
3144	Women's footwear, except athletic	217.1	212.5	212.7	212.4	208.5	208.8	210.3	217.0	216.2	r220.1	218.3	220.6	222.2	223.3
3171	Women's handbags and purses (12/75 = 100)	155.5	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.5	157.8	159.0	159.0
3211	Flat glass (12/71 = 100)	175.3	180.1	180.1	177.4	177.5	177.5	177.5	177.5	187.9	r187.9	187.7	187.7	188.3	188.3
3221	Glass containers	328.6	335.4	335.4	335.4	335.3	352.1	355.8	358.0	358.0	r358.0	357.3	357.2	357.7	358.3
3241	Cement, hydraulic	329.6	330.3	330.3	330.3	339.6	341.5	341.5	341.1	341.9	r341.9	337.8	336.0	335.1	336.2
3251	Brick and structural clay tile	296.5	299.9	300.5	300.5	298.9	299.4	299.4	303.4	304.5	r305.0	307.2	307.2	307.5	307.5
3253	Ceramic wall and floor tile (12/75 = 100)	133.4	140.4	140.4	140.4	140.4	140.4	140.4	140.6	140.6	r140.6	138.0	138.0	138.0	138.0
3255	Clay refractories	310.2	313.9	315.2	319.9	329.6	354.4	355.6	356.2	356.5	r358.2	357.2	357.7	357.9	357.9
3259	Structural clay products, n.e.c.	222.6	231.7	231.7	236.6	225.6	226.0	225.9	215.9	215.8	r215.9	216.4	216.5	219.5	219.5
3261	Vitreous plumbing fixtures	254.9	259.0	259.3	260.1	261.1	260.6	260.8	261.8	265.4	265.5	264.2	263.9	267.1	269.1
3262	Vitreous china food utensils	335.0	338.8	344.7	344.7	347.7	347.7	347.3	346.5	355.5	r360.2	349.8	349.8	349.8	350.3
3263	Fine earthenware food utensils	309.1	313.8	315.0	315.0	315.1	315.1	315.0	314.9	316.2	r316.9	314.8	314.8	314.8	321.3
3269	Pottery products, n.e.c. (12/75 = 100)	160.1	161.8	163.7	163.7	164.3	164.3	164.2	164.0	166.3	r167.4	164.7	164.7	164.8	166.9
3271	Concrete block and brick	270.4	274.3	274.2	275.1	274.9	276.4	276.4	276.5	276.7	277.0	277.1	277.4	276.8	276.9
3273	Ready-mixed concrete	298.7	299.5	299.4	299.6	301.9	301.9	302.5	303.9	305.5	r305.5	305.4	304.8	305.4	306.1
3274	Lime (12/75 = 100)	172.5	173.7	173.5	173.8	178.8	183.7	185.7	186.3	188.0	r188.3	188.1	188.3	188.2	188.1
3275	Gypsum products	256.9	251.5	252.5	250.6	250.9	253.9	260.5	262.5	258.8	256.2	256.5	254.3	254.7	256.8
3291	Abrasive products (12/71 = 100)	232.9	237.6	241.0	241.0	241.3	248.3	248.8	250.2	251.7	252.1	252.0	252.3	252.3	252.3
3297	Nonclay refractories (12/74 = 100)	185.3	189.7	190.2	190.3	191.2	198.3	200.4	202.3	203.2	r203.8	203.8	203.8	203.8	203.8
3312	Blast furnaces and steel mills	342.8	353.1	353.0	353.3	354.7	354.4	354.4	356.1	355.9	r353.7	352.9	352.8	352.3	354.0
3313	Electrometallurgical products (12/75 = 100)	121.8	125.4	125.4	125.3	125.3	123.4	120.3	120.3	120.3	120.4	120.4	121.4	121.4	121.3
3316	Cold finishing of steel shapes	316.2	326.4	326.4	326.7	327.0	327.0	327.0	327.1	327.3	325.6	325.2	325.6	325.1	324.3
3317	Steel pipes and tubes	341.5	362.0	362.3	363.0	363.7	364.1	365.8	365.9	365.9	365.7	364.0	361.6	361.0	361.0
3321	Gray iron foundries (12/68 = 100)	299.7	303.3	305.2	306.1	307.9	310.0	311.5	311.9	311.1	r311.5	311.3	311.3	309.7	314.4
3333	Primary zinc	326.3	337.0	337.5	315.7	306.6	311.2	292.0	273.4	256.6	259.7	266.4	277.0	291.6	302.9
3334	Primary aluminum	333.1	333.5	332.5	332.8	324.1	320.2	320.8	312.4	308.8	r307.9	305.7	306.0	304.4	303.5
3351	Copper rolling and drawing	212.3	212.3	209.2	207.1	204.6	203.9	198.4	196.4	197.4	r190.0	189.2	190.1	190.9	191.3
3353	Aluminum sheet, plate, and foil (12/75 = 100)	175.8	179.9	180.2	180.8	181.8	181.7	181.2	179.9	178.6	178.0	178.2	177.1	177.2	178.3
3354	Aluminum extruded products (12/75 = 100)	180.1	181.3	181.4	181.1	180.8	180.8	180.5	180.2	180.2	180.1	179.5	178.9	178.0	177.7
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	159.1	163.0	166.2	166.1	166.1	166.5	166.3	162.9	163.0	165.4	164.7	164.5	165.9	160.0
3411	Metal cans	305.1	307.0	306.0	304.9	310.8	314.0	313.6	318.6	318.7	r318.7	318.6	318.0	318.1	318.0
3425	Hand saws and saw blades (12/72 = 100)	201.4	204.8	206.0	206.0	211.6	214.8	214.9	215.3	221.3	r221.4	221.0	221.2	221.2	221.2
3431	Metal sanitary ware	265.5	270.3	271.6	271.8	271.3	272.8	275.1	275.8	275.5	r276.1	276.1	276.9	276.4	276.1
3465	Automotive stampings (12/75 = 100)	146.0	147.4	149.7	149.1	150.1	144.7	144.2	144.3	144.5	r144.5	153.0	153.3	153.5	154.1
3482	Small arms ammunition (12/75 = 100)	159.0	159.9	159.9	163.9	167.5	167.5	167.5	166.3	166.3	r170.3	175.9	175.9	175.9	175.9
3493	Steel springs, except wire	245.9	253.9	254.1	256.1	255.8	257.4	256.4	254.3	254.5	r254.4	253.1	253.5	253.5	253.7
3494	Valves and pipe fittings (12/71 = 100)	248.9	252.9	253.5	255.7	257.7	258.9	259.1	260.3	260.9	r260.6	260.1	260.1	260.0	258.8
3498	Fabricated pipe and fittings	361.3	377.7	378.6	379.3	378.6	377.7	379.8	385.5	385.4	385.4	383.8	385.6	382.4	383.2
3519	Internal combustion engines, n.e.c.	311.9	323.2	326.4	325.4	329.4	332.0	332.6	334.2	338.4	r339.1	339.6	343.8	347.1	347.3
3531	Construction machinery (12/76 = 100)	156.8	161.0	161.6	159.7	162.5	162.4	163.3	164.3	165.2	r165.4	166.5	166.7	166.8	166.2
3532	Mining machinery (12/72 = 100)	282.5	288.5	290.8	292.9	295.5	297.8	300.9	302.4	304.0	r304.2	304.0	303.4	304.5	305.4
3533	Oilfield machinery and equipment	395.8	415.6	418.2	420.3	427.2	429.2	435.8	439.3	438.4	r438.7	438.4	439.6	439.1	436.9
3534	Elevators and moving stairways	253.9	257.0	260.7	265.6	264.3	269.8	271.6	271.8	275.5	r275.5	275.5	275.5	275.3	274.2
3542	Machine tools, metal forming types (12/71 = 100)	306.9	311.7	312.3	319.3	319.7	322.8	324.5	325.2	325.5	326.5	333.6	333.6	333.3	333.5
3546	Power driven hand tools (12/76 = 100)	147.3	149.5	149.5	150.0	153.3	153.2	153.9	154.7	156.3	r156.3	157.4	157.5	157.2	157.5
3552	Textile machinery (12/69 = 100)	243.5	248.0	247.9	249.5	252.3	253.5	255.0	256.2	257.3	r259.2	259.8	258.9	259.3	261.3
3553	Woodworking machinery (12/72 = 100)	225.0	228.9	229.1	229.1	233.7	232.9	233.4	234.7	234.7	r234.9	230.0	230.6	230.6	230.7
3576	Scales and balances, excluding laboratory	226.2	226.2	226.3	226.5	228.3	228.8	229.8	229.6	229.5	230.6	231.9	231.9	231.9	232.0
3592	Carburetors, pistons, rings, valves (6/76 = 100)	178.0	185.4	187.2	187.2	185.3	189.6	190.4	192.8	195.4	r195.9	196.6	197.2	197.6	198.2
3612	Transformers	209.9	217.3	222.0	222.0	220.5	222.2	222.4	223.3	224.7	r225.2	224.7	226.0	224.6	223.9
3623	Welding apparatus, electric (12/72 = 100)	227.5	232.5	233.2	236.8	236.8	236.9	232.3	237.6	237.6	r237.8	236.9	237.5	237.7	237.8
3631	Household cooking equipment (12/75 = 100)	141.2	141.6	141.9	142.6	146.0	146.8	147.2	146.2	147.1	146.9	148.2	150.4	151.0	151.1
3632	Household refrigerators, freezers (6/76 = 100)	132.8	137.8	137.9	137.9	140.1	141.1	142.3	142.5	143.2	144.3	145.5	145.9	145.9	145.4
3633	Household laundry equipment (12/73 = 100)	174.3	177.0	178.4	178.8	180.1	180.5	186.2	186.9	188.6	189.0	189.1	189.7	190.1	190.5
3635	Household vacuum cleaners	159.1	161.3	161.0	160.8	165.6	165.2	165.7	165.4	165.5	r165.6	159.4	159.4	159.5	159.2
3636	Sewing machines (12/75 = 100)	146.8	156.0	156.0	156.0	156.0	155.8	155.8	154.3	154.3	r154.3	153.7	153.0	153.0	153.6
3641	Electric lamps	277.3	285.9	284.8	281.3	282.1	286.1	283.6	296.6	294.5	293.9	291.9	291.9	296.3	302.9
3644	Noncurrent-carrying wiring devices (12/72 = 100)	249.6	258.7	262.1	262.1	257.9	259.0	258.1	260.0	262.7	r260.8	260.7	260.3	261.3	261.9
3646	Commercial lighting fixtures (12/75 = 100)	154.8	159.9	159.3	159.2	159.2	161.1	162.4	163.5	167.7	r166.5	166.5	165.9	165.4	165.7
3648	Lighting equipment, n.e.c. (12/75 = 100)	155.9	162.0	162.4	163.1	162.8	167.8	168.8	170.9	171.2	r171.1	171.1	171.2	171.2	171.2
3671	Electron tubes receiving type	309.7	327.5	327.8	342.2	374.1	374.2	374.4	374.5	374.4	r374.5	376.0	376.0	380.7	380.8
3674	Semiconductors and related devices	r90.9	91.8	92.0	91.7	90.9	90.2	90.0	89.5	89.3	r89.5	90.8	90.5	90.8	88.4
3675	Electronic capacitors (12/75 = 100)	170.3	171.5	168.1	166.6	167.4	169.7	168.4	167.6	166.6	166.8	166.7	166.2	165.5	164.4
3676	Electronic resistors (12/75 = 100)	141.4	142.7	143.0	142.8	143.7	144.0	143.4	144.4	145.2	144.9	144.4	144.6	144.8	145.2
3678	Electronic connectors (12/75 = 100)	154.9	156.8	155.8	155.8	155.9	158.2	156.7	156.4	158.3	r159.8	157.6	160.9	159.8	160.9
3692	Primary batteries, dry and wet	182.2	182.7	182.7	182.7	182.0	184.3	190.5	195.5	195.8	r196.2	196.3	196.3	196.8	196.1
3711	Motor vehicles and car bodies (12/75 = 100)	150.3	158.6	158.7	158.1	159.8	155.0	154.9	154.9	157.0	r159.0	159.7	160.3	151.4	162.8
3942	Dolls (12/75 = 100)	131.3	130.9	130.9	130.9	135.5	136.6	136.6	136.8	136.8	r136.8	136.5	136.5	136.5	136.5
3944	Games, toys, and children's vehicles	221.3	222.2	222.6	223.9	228.4	232.5	234.1	234.1	234.3	r234.3	231.8	231.8	232.1	232.6
3955	Carbon paper and inked ribbons (12/75 = 100)	138.5	140.2	140.2	140.3	140.3	140.3	140.3	140.3	140.5	140.6	140.5	140.5	139.3	139.3
3995	Burial caskets (6/76 = 100)	133.5	143.4	143.4	142.7	142.7	143.8	145.3	145.3	149.3	149.3	150.8	150.8	150.8	150.8
3996	Hard surface floor coverings (12/75 = 100)	151.8	153.7	153.7	153.7	155.1	155.2	156.1	156.1	156.3	154.3	155.0	155.7	156.9	156.9

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[1] Data for June 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

r = revised.

PRODUCTIVITY DATA

PRODUCTIVITY DATA are compiled by the Bureau of Labor Statistics from establishment data and from estimates of compensation and output supplied by the U.S. Department of Commerce and the Federal Reserve Board.

Definitions

Output is the constant dollar gross domestic product produced in a given period. Indexes of **output per hour of labor input,** or labor productivity, measure the value of goods and services produced per hour of labor. **Compensation per hour** includes wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. The data also include an estimate of wages, salaries, and supplementary payments for the self-employed, except for nonfinancial corporations, in which there are no self-employed. **Real compensation per hour** is compensation per hour adjusted by the Consumer Price Index for All Urban Consumers.

Unit labor cost measures the labor compensation cost required to produce one unit of output and is derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from the current dollar gross domestic product and dividing by output. In these tables, **unit nonlabor costs** contain all the components of unit nonlabor payments except unit profits. **Unit profits** include corporate profits and inventory valuation adjustments per unit of output.

The **implicit price deflator** is derived by dividing the current dollar estimate of gross product by the constant dollar estimate, making the deflator, in effect, a price index for gross product of the sector reported.

The use of the term "man hours" to identify the labor component of productivity and costs, in tables 26 through 29, has been discontinued. **Hours of all persons** is now used to describe the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all-employee hour** is now used to describe labor productivity in nonfinancial corporations where there are no self-employed.

Notes on the data

In the business sector and the nonfarm business sector, the basis for the output measure employed in the computation of output per hour is Gross Domestic Product rather than Gross National Product. Computation of hours includes estimates of nonfarm and farm proprietor hours.

Output data are supplied by the Bureau of Economic Analysis, U.S. Department of Commerce, and the Federal Reserve Board. Quarterly manufacturing output indexes are adjusted by the Bureau of Labor Statistics to annual estimates of output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are from the Bureau of Economic Analysis and the Bureau of Labor Statistics.

Beginning with the September 1982 issue of the *Review*, all of the productivity and cost measures contained in these tables are based on revised output and compensation measures released by the Bureau of Economic Analysis in July as part of the regular revision cycle of the National Income and Product Accounts. Measures of labor input have been revised to reflect results of the 1980 census, and seasonal factors have been recomputed for use in the preparation of quarterly measures. The word "private" is no longer being used as part of the series title of one of the two business sector measures prepared by BLS; no change has been made in the definition or content of the measures as a result of this change.

26. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950–81

[1977=100]

Item	1950	1955	1960	1965	1970	1974	1975	1976	1977	1978	1979	1980	1981
Business sector:													
Output per hour of all persons	50.4	58.3	65.2	78.3	86.2	92.5	94.5	97.6	100.0	100.6	99.6	98.9	100.7
Compensation per hour	20.0	26.4	33.9	41.7	58.2	78.0	85.5	92.9	100.0	108.6	119.1	131.4	144.1
Real compensation per hour	50.5	59.6	69.5	80.1	90.8	95.9	96.3	98.9	100.0	100.9	99.4	96.7	96.0
Unit labor cost	39.7	45.2	52.0	53.3	67.5	84.4	90.5	95.1	100.0	108.0	119.5	132.9	143.1
Unit nonlabor payments	43.4	47.8	50.6	57.6	63.2	78.5	90.4	94.0	100.0	106.7	112.8	119.3	135.2
Implicit price deflator	41.0	46.0	51.6	54.7	66.0	82.4	90.5	94.7	100.0	107.5	117.2	128.3	140.4
Nonfarm business sector:													
Output per hour of all persons	58.3	62.8	68.3	80.5	86.8	92.9	94.7	97.8	100.0	100.6	99.3	98.5	99.9
Compensation per hour	21.8	28.3	35.7	42.8	58.7	78.5	86.0	93.0	100.0	108.6	118.8	130.9	143.6
Real compensation per hour	55.0	64.0	73.0	82.2	91.5	96.4	96.8	99.0	100.0	100.9	99.2	96.3	95.7
Unit labor cost	38.8	45.0	52.2	53.2	67.6	84.5	90.8	95.1	100.0	108.0	119.6	133.0	143.8
Unit nonlabor payments	42.7	47.8	50.4	58.0	63.7	75.8	88.5	93.5	100.0	105.3	110.3	119.1	134.8
Implicit price deflator	40.1	46.0	51.6	54.8	66.3	81.6	90.0	94.6	100.0	107.1	116.5	128.3	140.8
Nonfinancial corporations:													
Output per hour of all employees	(1)	(1)	66.6	80.2	85.7	91.7	94.8	97.8	100.0	101.0	101.2	100.8	102.7
Compensation per hour	(1)	(1)	36.2	43.0	58.3	77.6	85.5	92.5	100.0	108.6	119.2	131.6	144.4
Real compensation per hour	(1)	(1)	74.2	82.5	90.9	95.4	96.2	98.5	100.0	100.8	99.5	98.8	98.2
Unit labor cost	(1)	(1)	54.4	53.5	68.0	84.7	90.2	94.6	100.0	107.5	117.8	130.5	140.6
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	75.6	90.8	95.0	100.0	104.2	106.9	117.7	134.8
Implicit price deflator	(1)	(1)	54.5	56.1	66.3	81.6	90.4	94.7	100.0	106.4	114.1	126.1	138.6
Manufacturing:													
Output per hour of all persons	49.4	56.4	60.0	74.5	79.1	90.6	93.4	97.5	100.0	100.9	101.5	101.7	104.5
Compensation per hour	21.5	28.8	36.7	42.8	57.6	76.3	85.4	92.3	100.0	108.3	118.9	132.8	146.4
Real compensation per hour	54.0	65.1	75.1	82.3	89.8	93.8	96.2	98.3	100.0	100.6	99.2	97.7	97.5
Unit labor cost	43.4	51.0	61.1	57.5	72.7	84.1	91.5	94.6	100.0	107.4	117.1	130.6	140.0
Unit nonlabor payments	54.3	58.5	61.1	69.3	65.0	69.3	87.3	93.7	100.0	102.5	99.9	97.1	108.8
Implicit price deflator	46.6	53.2	61.1	61.0	70.5	79.8	90.3	94.4	100.0	106.0	112.0	120.8	130.8

[1] Not available.

27. Annual changes in productivity, hourly compensation, unit costs, and prices, 1971-81

Item	Year											Annual rate of change	
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1950-81	1960-81
Business sector:													
Output per hour of all persons	3.6	3.5	[c]2.6	−2.4	2.2	3.3	2.4	0.6	−0.9	−0.7	1.8	[r]2.5	2.1
Compensation per hour	6.6	6.5	8.0	9.4	9.6	8.6	7.7	8.6	9.7	10.4	9.6	6.2	[r]7.3
Real compensation per hour	2.2	3.1	1.6	−1.4	0.5	2.6	1.2	0.9	−1.4	−2.8	−0.7	[r]2.4	1.8
Unit labor cost	2.9	2.9	5.3	12.1	7.3	5.1	5.1	8.0	10.7	11.2	7.7	3.6	5.0
Unit nonlabor payments	7.8	4.5	5.9	4.4	15.1	4.0	6.4	6.7	5.7	5.8	13.3	[r]3.5	[r]4.7
Implicit price deflator	4.4	3.4	5.5	9.5	9.8	4.7	5.6	7.5	9.0	9.4	9.5	[r]3.6	4.9
Nonfarm business sector:													
Output per hour of all persons	3.3	3.7	2.4	−2.5	2.0	3.2	2.2	0.6	−1.3	−0.9	1.4	[r]2.2	[r]1.9
Compensation per hour	6.6	6.7	7.6	9.4	9.6	8.1	7.5	8.6	9.3	10.2	9.7	5.9	7.0
Real compensation per hour	2.2	3.3	1.3	−1.4	0.4	2.2	1.0	0.9	−1.7	−2.9	−0.7	[r]2.1	1.5
Unit labor cost	3.2	2.9	5.0	12.2	7.5	4.7	5.2	8.0	10.7	11.2	8.1	3.7	5.0
Unit nonlabor payments	7.4	3.2	1.3	5.9	16.7	5.7	6.9	5.3	4.7	8.0	13.1	[r]3.5	[r]4.6
Implicit price deflator	4.5	3.0	3.8	10.2	10.3	5.0	5.7	7.1	8.8	10.2	9.7	3.6	4.9
Nonfinancial corporations:													
Output per hour of all employees	4.8	3.0	2.6	−3.4	3.4	3.2	2.3	1.0	0.2	−0.3	1.8	(1)	2.0
Compensation per hour	6.5	5.8	7.7	9.7	10.1	8.2	8.1	8.6	9.8	10.4	9.7	(1)	6.9
Real compensation per hour	2.1	2.5	1.4	−1.1	0.9	2.3	1.6	0.8	−1.3	−2.8	−0.6	(1)	1.4
Unit labor cost	1.6	2.8	4.9	13.6	6.5	4.9	5.7	7.5	9.6	10.7	7.8	(1)	4.8
Unit nonlabor payments	7.4	2.7	1.5	7.1	20.1	4.6	5.3	4.2	2.6	10.1	14.8	(1)	4.1
Implicit price deflator	3.5	2.8	3.8	11.4	10.9	4.8	5.6	6.4	7.2	10.5	10.0	(1)	4.6
Manufacturing:													
Output per hour of all persons	6.1	5.0	5.4	−2.4	2.9	4.4	2.5	0.9	0.7	0.2	2.8	2.6	2.7
Compensation per hour	6.1	5.4	7.2	10.6	11.9	6.0	8.3	8.3	9.7	11.8	10.2	5.8	6.9
Real compensation per hour	1.8	2.0	0.9	−0.3	2.5	2.1	1.8	0.6	−1.4	−1.6	−0.2	2.0	1.4
Unit labor cost	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.4	9.0	11.6	7.2	3.1	4.1
Unit nonlabor payments	11.2	0.8	−3.3	−1.8	25.9	7.4	6.7	2.5	−2.6	−2.7	12.0	2.1	2.7
Implicit price deflator	3.1	0.5	0.3	9.0	13.1	4.6	6.0	6.0	5.7	7.8	8.4	2.8	3.7

[1] Not available. r = revised. c= corrected.

28. Quarterly indexes of productivity, hourly compensation, unit costs, and prices, seasonally adjusted

[1977=100]

Item	Annual average		Quarterly indexes										
			1980				1981				1982		
	1980	1981	I	II	III	IV	I	II	III	IV	I	II	III
Business sector:													
Output per hour of all persons	98.9	100.7	99.3	98.2	98.9	99.3	100.7	100.7	101.0	100.2	100.0	100.3	[p]101.3
Compensation per hour	131.4	144.1	126.7	130.0	133.1	136.1	140.0	142.5	145.6	148.2	150.9	153.4	[p]155.7
Real compensation per hour	96.7	96.0	97.0	96.4	96.9	96.2	96.2	96.4	95.7	95.6	96.5	97.1	[p]96.8
Unit labor cost	132.9	143.1	127.6	132.3	134.7	137.0	139.0	141.5	144.2	147.9	150.9	[r]152.9	[p]153.7
Unit nonlabor payments	119.3	135.2	116.0	116.2	120.6	124.6	131.8	133.4	137.4	138.3	136.4	[r]137.0	[p]140.8
Implicit price deflator	128.3	140.4	123.7	126.9	129.9	132.8	136.5	138.8	141.9	144.6	146.0	[r]147.5	[p]149.3
Nonfarm business sector:													
Output per hour of all persons	98.5	99.9	98.7	97.6	98.4	99.2	100.4	100.0	100.0	99.1	99.2	[r]99.4	[p]100.3
Compensation per hour	130.9	143.6	126.2	129.3	132.6	135.7	139.5	142.0	145.1	147.7	150.4	[r]152.7	[p]155.1
Real compensation per hour	96.3	95.7	96.6	96.0	96.5	95.9	96.0	96.0	95.4	95.3	96.3	96.6	[p]96.4
Unit labor cost	133.0	143.8	127.8	132.5	134.7	136.8	139.0	141.9	145.1	149.0	151.6	[r]153.5	[p]154.6
Unit nonlabor payments	119.1	134.8	115.2	116.7	120.3	124.4	131.5	132.8	136.7	138.4	136.7	[r]137.2	[p]140.9
Implicit price deflator	129.3	140.8	123.6	127.2	129.9	132.7	136.5	138.9	142.3	145.5	146.6	[r]148.1	[p]150.1
Nonfinancial corporations:													
Output per hour of all employees	100.8	102.7	100.8	99.8	101.1	101.7	102.8	102.7	102.8	102.2	102.3	[r]103.1	(1)
Compensation per hour	131.6	144.4	126.8	130.0	133.4	136.3	140.4	142.7	145.7	148.6	151.7	154.1	(1)
Real compensation per hour	96.8	96.2	97.0	96.4	97.1	96.3	96.5	96.5	95.8	95.9	97.1	97.5	(1)
Total unit costs	131.0	143.4	125.0	130.4	132.9	135.6	138.3	141.7	144.7	149.1	151.8	[r]153.8	(1)
Unit labor cost	130.5	140.6	125.8	130.2	131.9	134.1	136.5	138.9	141.7	145.4	148.3	[r]149.5	(1)
Unit nonlabor costs	132.5	151.4	122.7	131.0	135.7	140.7	143.4	149.6	153.1	158.6	161.8	[r]166.0	(1)
Unit profits	87.9	101.6	91.1	81.9	87.8	90.5	104.7	98.8	105.2	97.6	86.1	[r]82.3	(1)
Implicit price deflator	126.1	138.6	121.1	124.8	127.7	130.6	134.5	136.8	140.2	143.2	144.3	[r]145.6	(1)
Manufacturing:													
Output per hour of all persons	101.7	104.5	102.6	100.4	100.3	103.6	105.2	105.0	105.0	102.8	102.1	[r]102.3	[p]104.1
Compensation per hour	132.8	146.4	127.1	130.9	135.2	138.4	142.6	144.9	147.3	150.7	154.7	157.6	[p]160.1
Real compensation per hour	97.7	97.5	97.3	97.1	98.5	97.8	98.0	97.9	96.8	97.2	99.0	98.7	[p]99.5
Unit labor cost	130.6	140.0	123.9	130.3	134.9	133.6	135.5	132.0	140.3	146.6	151.5	[r]154.0	[p]153.8

[1] Not available. r= revised. p= preliminary.

29. Percent change from preceding quarter and year in productivity, hourly compensation, unit costs, and prices, seasonally adjusted at annual rate

[1977=100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	I 1981 to II 1981	II 1981 to III 1981	III 1981 to IV 1981	IV 1981 to I 1982	I 1982 to II 1982	II 1982 to III 1982	II 1980 to II 1981	III 1980 to III 1981	IV 1980 to IV 1981	I 1981 to I 1982	II 1981 to II 1982	III 1981 to III 1982
Business sector:												
Output per hour of all persons	0.0	1.1	−2.9	−1.0	^{r}1.4	^{p}4.0	2.5	2.2	0.9	−0.7	−0.4	^{p}0.3
Compensation per hour	7.5	9.0	7.4	7.3	6.9	^{p}6.2	9.7	9.4	8.9	7.8	7.8	^{p}6.9
Real compensation per hour	0.5	−2.8	−0.4	3.9	2.2	^{p}−1.3	−0.1	−1.3	−0.6	0.3	^{r}0.8	^{p}1.1
Unit labor costs	7.5	7.8	10.6	8.4	^{r}5.5	^{p}2.1	6.9	7.1	7.9	8.6	8.1	^{p}6.6
Unit nonlabor payments	4.9	12.5	2.9	−5.4	^{r}1.7	^{p}11.5	14.8	13.9	11.0	3.5	^{r}2.7	^{p}2.5
Implicit price deflator	6.6	9.3	8.0	3.8	^{r}4.3	^{p}5.0	9.4	9.2	8.8	6.9	^{r}6.3	^{p}5.2
Nonfarm business sector:												
Output per hour of all persons	−1.3	−0.3	−3.5	0.6	^{r}0.8	^{p}3.6	2.5	1.6	−0.1	−1.1	^{r}−0.8	^{p}0.3
Compensation per hour	7.1	9.0	7.3	7.7	^{r}6.1	^{p}6.6	9.6	9.4	8.8	7.8	7.5	^{p}6.9
Real compensation per hour	0.1	−2.6	−0.5	4.3	1.4	^{p}−0.9	0.0	−1.2	−0.6	0.3	0.6	^{p}1.1
Unit labor costs	8.6	9.3	11.2	7.1	^{r}5.2	^{p}2.9	7.1	7.7	8.9	9.0	^{r}8.2	^{p}6.6
Unit nonlabor payments	4.0	12.1	5.1	−4.6	^{r}1.3	^{p}11.3	13.8	13.6	11.2	4.0	^{r}3.3	^{p}3.1
Implicit price deflator	7.1	10.2	9.2	3.3	^{r}4.0	^{p}5.5	9.2	9.6	9.6	7.4	^{r}6.6	^{p}6.5
Nonfinancial corporations:												
Output per hour of all employees	−0.4	0.3	−2.3	0.5	^{r}2.9	(1)	2.9	1.7	0.6	−0.5	^{r}0.3	(1)
Compensation per hour	6.9	8.5	8.3	8.6	6.4	(1)	9.8	9.2	9.0	8.1	^{r}8.0	(1)
Real compensation per hour	−0.1	−3.0	0.5	5.2	1.7	(1)	0.1	−1.4	−0.5	0.6	^{r}1.9	(1)
Total unit costs	10.2	8.6	12.8	7.4	^{r}5.4	(1)	8.7	8.9	9.8	9.7	^{r}8.5	(1)
Unit labor costs	7.3	8.2	10.9	8.1	^{r}3.4	(1)	6.7	7.5	8.4	8.6	^{r}7.6	(1)
Unit nonlabor costs	18.5	9.8	17.8	5.7	^{r}0.7	(1)	14.2	12.9	13.4	12.8	^{r}10.9	(1)
Unit profits	−20.8	28.4	−25.9	−39.4	^{r}−16.7	(1)	20.7	19.7	7.9	−17.8	^{r}−16.7	(1)
Implicit price deflator	7.1	10.2	8.9	3.0	^{r}3.8	(1)	9.6	9.7	9.6	7.3	^{r}6.4	(1)
Manufacturing:												
Output per hour of all persons	−0.7	−0.1	−8.2	−2.4	^{r}0.8	^{p}7.1	4.5	4.7	−0.8	−2.9	^{r}−2.5	^{p}−0.8
Compensation per hour	6.6	6.8	9.6	11.1	7.8	^{p}6.5	10.7	8.9	8.9	8.5	8.8	^{p}8.7
Real compensation per hour	−0.4	−4.6	1.6	7.6	3.1	^{p}−1.1	0.9	−1.7	−0.8	1.0	1.8	^{p}2.8
Unit labor costs	7.3	6.8	19.4	13.9	^{r}6.9	^{p}−0.6	5.9	4.0	9.8	11.7	^{r}11.6	^{p}9.6

[1] Not available.

r= revised.

p= preliminary.

WAGE AND COMPENSATION DATA

DATA FOR THE EMPLOYMENT COST INDEX are reported to the Bureau of Labor Statistics by a sample of 2,000 private nonfarm establishments and 750 State and local government units selected to represent total employment in those sectors. On average, each reporting unit provides wage and compensation information on five well-specified occupations.

Data on negotiated wage and benefit changes are obtained from contracts on file at the Bureau, direct contact with the parties, and secondary sources.

Definitions

The **Employment Cost Index** (ECI) is a quarterly measure of the average change in the cost of employing labor. The rate of total compensation, which comprises wages, salaries, and employer costs for employee benefits, is collected for workers performing specified tasks. Employment in each occupation is held constant over time for all series produced in the ECI, except those by region, bargaining status, and area. As a consequence, only changes in compensation are measured. Industry and occupational employment data from the 1970 Census of Population are used in deriving constant weights for the ECI. While holding total industry and occupational employment fixed, in the estimation of indexes by region, bargaining status, and area, the employment in those measures is allowed to vary over time in accord with changes in the sample. The rate of change (in percent) is available for wages and salaries, as well as for total compensation. Data are collected for the pay period including the 12th day of the survey months of March, June, September, and December. The statistics are neither annualized nor adjusted for seasonal influence.

Wages and salaries consist of earnings before payroll deductions, excluding premium pay for overtime, work on weekends and holidays, and shift differentials. Production bonuses, incentive earnings, commissions, and cost-of-living adjustments are included; nonproduction bonuses are included with other supplemental pay items in the benefits category; and payments-in-kind, free room and board, and tips are excluded. *Benefits* include supplemental pay, insurance, retirement and savings plans, and hours-related and legally required benefits.

Data on negotiated wage changes apply to private nonfarm industry collective bargaining agreements covering 1,000 workers or more. Data on compensation changes apply only to those agreements covering 5,000 workers or more. *First-year* wage or compensation changes refer to average negotiated changes for workers covered by settlements reached in the period and implemented within the first 12 months after the effective date of the agreement. *Changes over the life of the agreement* refer to all adjustments specified in the contract, expressed as an average annual rate. These measures exclude wage changes that may occur under cost-of-living adjustment clauses, that are triggered by movements in the Consumer Price Index. *Wage-rate changes* are expressed as a percent of straight-time hourly earnings; *compensation changes* are expressed as a percent of total wages and benefits.

Effective wage adjustments reflect all negotiated changes implemented in the reference period, regardless of the settlement date. They include changes from settlements reached during the period, changes deferred from contracts negotiated in an earlier period, and cost-of-living adjustments. The data also reflect contracts providing for no wage adjustment in the period. Effective adjustments and each of their components are prorated over all workers in bargaining units with at least 1,000 workers.

Notes on the data

The Employment Cost Index data series began in the fourth quarter of 1975, with the quarterly percent change in wages and salaries in the private nonfarm sector. Data on employer costs for employee benefits were included in 1980, to produce a measure of the percent change in employers' cost for employees' total compensation. State and local government units were added to the ECI coverage in 1981, providing a measure of total compensation change in the civilian nonfarm economy.

Data for the broad white-collar, blue-collar, and service worker groups, and the manufacturing, nonmanufacturing, and service industry groups are presented in the ECI. Additional occupation and industry detail are provided for the wages and salaries component of total compensation in the private nonfarm sector. For State and local government units, additional industry detail is shown for both total compensation and its wages and salaries component.

Historical indexes (June 1981 = 100) of the quarterly rates of changes presented in the ECI are also available.

For a more detailed discussion of the ECI, see chapter 25, "The Employment Cost Index," of the BLS *Handbook of Methods* (Bulletin 1910), and the *Monthly Labor Review* articles: "Employment Cost Index: a measure of change in the 'price of labor,'" July 1975; "How benefits will be incorporated into the Employment Cost Index," January 1978; and "The Employment Cost Index: recent trends and expansion," May 1982.

Additional data for the ECI and other measures of wage and compensation changes appear in *Current Wage Developments*, a monthly periodical of the Bureau.

30. Employment Cost Index, total compensation, by occupation and industry group

[June 1981 = 100]

Series	1980		1981				1982			Percent change	
										3 months ended	12 months ended
	Sept.	Dec.	March	June	Sept.	Dec.	March	June	Sept.	September 1982	
Civilian nonfarm workers[1]	—	—	—	100.0	102.6	104.5	106.3	107.5	110.1	2.4	7.3
Workers, by occupational group											
White-collar workers	—	—	—	100.0	102.7	104.9	106.5	107.7	110.7	2.8	7.8
Blue-collar workers	—	—	—	100.0	102.3	104.1	105.7	107.1	109.2	2.0	6.7
Service workers	—	—	—	100.0	102.8	104.2	107.2	108.3	110.8	2.3	7.8
Workers, by industry division											
Manufacturing	—	—	—	100.0	102.1	104.0	106.0	107.2	109.3	2.0	7.1
Nonmanufacturing	—	—	—	100.0	102.8	104.8	106.4	107.7	110.5	2.6	7.5
Services	—	—	—	100.0	104.4	107.1	108.2	109.2	113.5	3.9	8.7
Public administration[2]	—	—	—	100.0	104.3	106.0	108.1	109.1	112.8	3.4	8.1
Private nonfarm workers	92.8	94.7	98.1	100.0	102.0	104.0	105.8	107.2	109.3	2.0	7.2
Workers, by occupational group											
White-collar workers	92.6	94.5	98.3	100.0	101.8	104.0	105.8	107.2	109.5	2.1	7.6
Blue-collar workers	93.0	94.9	97.8	100.0	102.2	104.0	105.6	107.0	109.0	1.9	6.7
Service workers	92.7	94.3	99.3	100.0	101.9	103.1	106.7	107.9	109.6	1.6	7.6
Workers, by industry division											
Manufacturing	92.6	94.7	98.0	100.0	102.1	104.0	106.0	107.2	109.3	2.0	7.1
Nonmanufacturing	92.9	94.7	98.2	100.0	102.0	103.9	105.7	107.1	109.3	2.1	7.2
State and local government workers	—	—	—	100.0	105.3	107.4	108.8	109.3	114.3	4.6	8.5
Workers, by occupational group											
White-collar workers	—	—	—	100.0	105.7	107.8	109.1	109.5	114.9	4.9	8.7
Blue-collar workers	—	—	—	100.0	104.2	105.9	108.2	108.9	112.7	3.5	8.2
Workers, by industry division											
Services	—	—	—	100.0	105.8	107.9	109.0	109.4	114.9	5.0	8.6
Schools	—	—	—	100.0	106.0	107.9	108.9	109.1	114.8	5.2	8.3
Elementary and secondary	—	—	—	100.0	106.3	108.3	109.3	109.5	115.6	5.6	8.7
Hospitals and other services[3]	—	—	—	100.0	105.0	107.8	109.5	110.3	115.3	4.5	9.8
Public administration[2]	—	—	—	100.0	104.3	106.0	108.1	109.1	112.8	3.4	8.1

[1] Excludes household and Federal workers.

[2] Consists of legislative, judicial, administrative, and regulatory activities.

[3] Includes, for example, library, social, and health services.

NOTE: Dashes indicate data not available.

31. Employment Cost Index, wages and salaries, by occupation and industry group

[June 1981 = 100]

Series	1980		1981				1982			Percent change	
										3 months ended	12 months ended
	Sept.	Dec.	March	June	Sept.	Dec.	March	June	Sept.	September 1982	
Civilian nonfarm workers[1]	—	—	—	100.0	102.5	104.4	106.3	107.3	109.7	2.2	7.0
Workers, by occupational group											
White-collar workers	—	—	—	100.0	102.6	104.7	106.7	107.6	110.4	2.6	7.6
Blue-collar workers	—	—	—	100.0	102.4	104.0	105.5	106.7	108.6	1.8	6.1
Service workers	—	—	—	100.0	102.5	103.6	106.8	107.9	110.1	2.0	7.4
Workers, by industry division											
Manufacturing	—	—	—	100.0	102.1	104.0	105.9	107.0	108.8	1.7	6.6
Nonmanufacturing	—	—	—	100.0	102.7	104.5	106.5	107.5	110.1	2.4	7.2
Services	—	—	—	100.0	104.4	106.6	108.6	109.5	113.2	3.4	8.4
Public administration[2]	—	—	—	100.0	103.8	105.5	107.5	108.4	111.9	3.2	7.8
Private nonfarm workers	93.5	95.4	98.0	100.0	102.0	103.8	105.9	107.1	109.0	1.8	6.9
Workers, by occupational group											
White-collar workers	93.3	95.2	98.1	100.0	101.8	103.9	106.2	107.3	109.4	2.0	7.5
Professional and technical workers	93.2	95.3	98.2	100.0	103.3	105.5	108.0	109.4	111.8	2.2	8.2
Managers and administrators	93.5	94.7	98.6	100.0	101.6	102.8	105.8	107.2	108.5	1.2	6.8
Salesworkers	92.2	94.8	96.2	100.0	98.0	101.9	102.2	101.8	104.5	2.7	6.6
Clerical workers	93.8	95.7	98.6	100.0	102.7	104.2	107.0	108.3	110.3	1.8	7.4
Blue-collar workers	93.8	95.7	97.7	100.0	102.3	103.9	105.4	106.6	108.5	1.8	6.1
Craft and kindred workers	94.0	96.1	97.8	100.0	102.9	104.3	106.2	107.6	109.6	1.9	6.5
Operatives, except transport	93.6	95.5	97.8	100.0	102.1	104.1	105.4	106.5	108.3	1.6	6.1
Transport equipment operatives	93.5	95.3	96.8	100.0	101.0	102.7	103.2	104.1	106.0	1.8	5.0
Nonfarm laborers	93.9	95.7	97.5	100.0	101.5	103.3	104.1	105.1	106.5	1.3	4.9
Service workers	93.4	94.8	99.2	100.0	101.8	102.7	106.7	107.9	109.3	1.3	7.4
Workers, by industry division											
Manufacturing	93.6	95.7	97.9	100.0	102.1	104.0	105.9	107.0	108.8	1.7	6.6
Durables	93.5	95.7	97.9	100.0	102.1	104.5	106.3	107.4	109.0	1.5	6.8
Nondurables	93.8	95.7	97.8	100.0	102.0	103.1	105.3	106.3	108.5	2.1	6.4
Nonmanufacturing	93.4	95.2	98.1	100.0	102.0	103.8	105.9	107.1	109.1	1.9	7.0
Construction	94.5	95.9	97.6	100.0	103.0	104.3	105.9	107.3	109.1	1.7	5.9
Transportation and public utilities	93.1	95.6	97.7	100.0	102.0	103.6	105.7	106.9	108.5	2.4	7.4
Wholesale and retail trade	93.6	95.1	98.2	100.0	101.3	102.3	103.9	105.8	106.5	.7	5.1
Wholesale trade	93.0	95.9	98.5	100.0	102.0	103.4	106.3	108.9	109.0	.1	6.9
Retail trade	93.8	94.6	98.1	100.0	101.0	101.9	103.0	104.5	105.5	1.0	4.5
Finance, insurance, and real estate	91.2	93.1	95.7	100.0	98.3	102.3	103.7	102.4	106.1	3.6	7.9
Services	94.2	95.7	99.6	100.0	103.6	105.8	108.8	110.0	112.5	2.3	8.6
State and local government workers	—	—	—	100.0	105.0	107.0	108.2	108.7	113.5	4.4	8.1
Workers, by occupational group											
White-collar workers	—	—	—	100.0	105.4	107.5	108.5	108.9	114.2	4.9	8.3
Blue-collar workers	—	—	—	100.0	103.9	105.5	107.5	107.9	111.5	3.3	7.3
Workers, by industry division	—	—									
Services			—	100.0	105.5	107.6	108.4	108.8	114.2	5.0	8.2
Schools	—	—	—	100.0	105.7	107.7	108.3	108.5	114.2	5.3	8.0
Elementary and secondary	—	—	—	100.0	106.0	107.9	108.7	108.8	114.9	5.6	8.4
Hospitals and other services[3]	—	—	—	100.0	104.6	107.3	108.8	109.5	114.3	4.4	9.3
Public administration[2]	—	—	—	100.0	103.8	105.5	107.5	108.4	111.9	3.2	7.8

[1] Excludes household and Federal workers.

[2] Consists of legislative, judicial, administrative, and regulatory activities.

[3] Includes, for example, library, social, and health services.

NOTE: Dashes indicate data not available.

32. Employment Cost Index, private nonfarm workers, by bargaining status, region, and area size

[June 1981 = 100]

Series	1980		1981				1982			Percent change	
										3 months ended	12 months ended
	Sept.	Dec.	March	June	Sept.	Dec.	March	June	Sept.	September 1982	
COMPENSATION											
Workers, by bargaining status[1]											
Union	92.4	94.7	97.6	100.0	102.5	104.8	106.5	108.4	110.6	2.0	7.9
Manufacturing	—	—	—	100.0	102.3	104.6	106.3	108.0	110.3	2.1	7.8
Nonmanufacturing	—	—	—	100.0	102.7	105.0	106.8	108.7	111.0	2.1	8.1
Nonunion	92.8	94.6	98.4	100.0	101.7	103.5	105.3	106.5	108.5	1.9	6.7
Manufacturing	—	—	—	100.0	101.8	103.5	105.7	106.6	108.4	1.7	6.5
Nonmanufacturing	—	—	—	100.0	101.7	103.5	105.2	106.4	108.6	2.1	6.8
Workers, by area size[1]											
Metropolitan areas	92.8	94.7	98.1	100.0	102.1	104.1	105.7	107.2	109.4	2.1	7.1
Other areas	91.9	94.2	98.1	100.0	101.8	103.2	106.2	107.0	108.6	1.5	6.7
WAGES AND SALARIES											
Workers, by bargaining status[1]											
Union	93.5	95.8	97.4	100.0	102.7	105.0	106.5	108.1	110.3	2.0	7.4
Manufacturing	93.8	96.1	97.7	100.0	102.6	104.7	105.9	107.3	109.5	2.1	6.7
Nonmanufacturing	93.1	95.5	97.1	100.0	102.8	105.2	107.0	108.8	111.1	2.1	8.1
Nonunion	93.4	95.1	98.2	100.0	101.6	103.2	105.6	106.5	108.3	1.7	6.6
Manufacturing	93.4	95.4	97.9	100.0	101.7	103.3	105.9	106.7	108.2	1.4	6.4
Nonmanufacturing	93.4	95.0	98.3	100.0	101.6	103.2	105.5	106.4	108.3	1.8	6.6
Workers, by region[1]											
Northeast	94.2	96.0	98.3	100.0	101.7	104.4	106.1	106.7	109.7	2.8	7.9
South	93.2	94.9	98.0	100.0	101.9	102.8	105.7	107.4	108.8	1.3	6.8
North Central	93.3	95.3	98.1	100.0	101.6	103.3	104.7	106.1	107.6	1.4	5.9
West	93.5	95.3	97.9	100.0	103.2	105.1	107.9	108.6	110.7	1.9	7.3
Workers, by area size[1]											
Metropolitan areas	93.5	95.4	97.9	100.0	102.1	104.0	105.9	107.1	109.1	1.9	6.9
Other areas	92.9	95.1	98.3	100.0	101.8	103.1	105.0	106.8	108.3	1.4	6.4

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[1] The indexes are calculated differently from those for the occupation and industry groups. For a detailed description of the index calculation, see BLS *Handbook of Methods*, Bulletin 1910.

33. Wage and compensation change, major collective bargaining settlements, 1977 to date

[In percent]

Measure	Annual average					Quarterly average								
						1980		1981				1982 p		
	1977	1978	1979	1980	1981	III	IV	I	II	III	IV	I r	II r	III
Total compensation changes covering 5,000 workers or more, all industries:														
First year of contract	9.6	8.3	9.0	10.4	10.2	11.4	8.5	7.7	11.6	10.5	11.0	1.9	2.6	6.5
Annual rate over life of contract	6.2	6.3	6.6	7.1	8.3	7.2	6.1	7.2	10.8	8.1	5.8	1.2	2.1	4.9
Wage rate changes covering at least 1,000 workers, all industries:														
First year of contract	7.8	7.6	7.4	9.5	9.8	10.5	8.3	7.1	11.8	10.8	9.0	3.0	3.4	5.8
Annual rate over life of contract	5.8	6.4	6.0	7.1	7.9	7.4	6.5	6.2	9.7	8.7	5.7	2.8	3.2	4.8
Manufacturing:														
First year of contract	8.4	8.3	6.9	7.4	7.2	8.4	7.8	6.4	8.2	9.0	6.6	2.5	1.7	5.5
Annual rate over life of contract	5.5	6.6	5.4	5.4	6.1	5.6	5.8	5.5	6.7	7.5	5.4	2.7	1.6	4.2
Nonmanufacturing (excluding construction):														
First year of contract	8.0	8.0	7.6	9.5	9.8	9.5	8.2	8.0	11.8	8.6	9.6	2.7	6.2	5.6
Annual rate over life of contract	5.9	6.5	6.2	6.6	7.3	5.9	6.8	7.3	9.1	7.2	5.6	2.1	5.5	4.8
Construction:														
First year of contract	6.3	6.5	6.6	13.6	13.5	15.4	14.3	11.4	12.9	16.4	11.4	9.1	6.2	7.5
Annual rate over life of contract	6.3	6.2	6.3	11.5	11.3	13.0	12.0	10.3	11.1	12.4	11.7	8.9	6.4	7.1

p = preliminary.

r = revised.

34. Effective wage adjustments in collective bargaining units covering 1,000 workers or more, 1977 to date

Measure	Year					Year and quarter								
	1977	1978	1979	1980	1981	1980		1981				1982p		
						III	IV	I	II	III	IV	I^r	II^r	III
Average percent adjustment (including no change):														
All industries	8.0	8.2	9.1	9.9	9.5	3.5	1.3	1.7	3.2	3.3	1.5	1.0	2.0	2.3
Manufacturing	8.4	8.6	9.6	10.2	9.4	2.9	1.7	2.3	2.4	3.1	1.9	.9	.9	1.6
Nonmanufacturing	7.6	7.9	8.8	9.7	9.5	4.0	1.1	1.2	3.8	3.4	1.1	1.0	2.7	2.8
From settlements reached in period	3.0	2.0	3.0	3.6	2.5	1.7	.5	.4	1.1	.5	.4	.2	.4	.5
Deferred from settlements reached in earlier period	3.2	3.7	3.0	3.5	3.8	1.2	.3	.5	1.4	1.5	.4	.5	1.4	1.2
From cost-of-living clauses	1.7	2.4	3.1	2.8	3.2	.7	.8	.7	.7	1.2	.6	.3	.2	.6
Total number of workers receiving wage change (in thousands)[1]	—	—	—	—	8,848	—	—	3,856	4,701	4,364	3,225	2,877	3,435	3,864
From settlements reached in period	—	—	—	—	2,270	—	—	579	906	540	604	203	483	586
Deferred from settlements reached in earlier period	—	—	—	—	6,267	—	—	888	2,055	3,023	882	1,006	1,627	2,378
From cost-of-living clauses	—	—	—	—	4,583	—	—	2,839	2,880	2,934	2,179	1,913	1,550	2,126
Number of workers receiving no adjustments (in thousands)	—	—	—	—	145	—	—	4,937	4,082	4,438	5,588	5,829	5,080	4,851

[1] The total number of workers who received adjustments does not equal the sum of workers that received each type of adjustment, because some workers received more than one type of adjustment during the period.

p=preliminary.
r= revised.

WORK STOPPAGE DATA

WORK STOPPAGES include all known strikes or lockouts involving 1,000 workers or more and lasting a full shift or longer. Data are based largely on newspaper accounts and cover all workers idle one shift or more in establishments directly involved in a stoppage. They do not measure the indirect or secondary effect on other establishments whose employees are idle owing to material or service shortages.

Estimates of days idle as a percent of estimated working time measures only the impact of larger strikes (1,000 workers or more). Formerly, these estimates measured the impact of strikes involving 6 workers or more; that is, the impact of virtually *all* strikes. Due to budget stringencies, collection of data on strikes involving 6 workers or more was discontinued with the December 1981 data.

35. Work stoppages involving 1,000 workers or more, 1947 to date

Month and year		Number of stoppages		Workers involved		Days idle	
		Beginning in month or year	In effect during month or year	Beginning in month or year (in thousands)	In effect during month (in thousands)	Number (in thousands)	Percent of estimated working time
1947		270		1,629		25,720	
1948		245		1,435		26,127	.22
1949		262		2,537		43,420	.38
1950		424		1,698		30,390	.26
1951		415		1,462		15,070	.12
1952		470		2,746		48,820	.38
1953		437		1,623		18,130	.14
1954		265		1,075		16,630	.13
1955		363		2,055		21,180	.16
1956		287		1,370		26,840	.20
1957		279		887		10,340	.07
1958		332		1,587		17,900	.13
1959		245		1,381		60,850	.43
1960		222		896		13,260	.09
1961		195		1,031		10,140	.07
1962		211		793		11,760	.08
1963		181		512		10,020	.07
1964		246		1,183		16,220	.11
1965		268		999		15,140	.10
1966		321		1,300		16,000	.10
1967		381		2,192		31,320	.18
1968		392		1,855		35,567	.20
1969		412		1,576		29,397	.16
1970		381		2,468		52,761	.29
1971		298		2,516		35,538	.19
1972		250		975		16,764	.09
1973		317		1,400		16,260	.08
1974		424		1,796		31,809	.16
1975		235		965		17,563	.09
1976		231		1,519		23,962	.12
1977		298		1,212		21,258	.10
1978		219		1,006		23,774	.11
1979		235		1,021		20,409	.09
1980		187		795		20,844	.09
1981		145		729		16,908	.07
1981:	January	6	12	12.0	29.6	257.9	.01
	February	7	10	10.7	20.9	118.5	.01
	March	16	20	201.6	207.8	881.8	.04
	April	17	27	48.0	223.5	4,085.2	.20
	May	18	27	85.1	258.0	4,454.0	.24
	June	30	43	200.1	415.1	2,818.3	.13
	July	23	38	80.1	125.4	1,575.5	.08
	August	9	17	36.2	86.8	1,017.9	.05
	September	5	10	28.3	65.2	899.8	.05
	October	7	11	13.4	48.3	733.9	.04
1982^p:	January	2	4	6.1	11.4	189.9	.01
	February	2	6	2.5	13.9	236.9	.01
	March	3	8	8.3	21.3	352.2	.02
	April	9	16	35.7	56.3	480.3	.02
	May	14	21	43.7	60.3	636.1	.03
	June	17	25	41.4	64.5	884.0	.04
	July	11	22	36.3	62.2	830.9	.04
	August	15	24	^{r}42.0	^{r}58.9	^{r}786.0	.04
	September	^{r}14	^{r}28	^{r}390.0	^{r}423.7	^{r}2,126.5	.11
	October	3	14	40.0	71.4	848.0	.05

p=preliminary.

r=revised.

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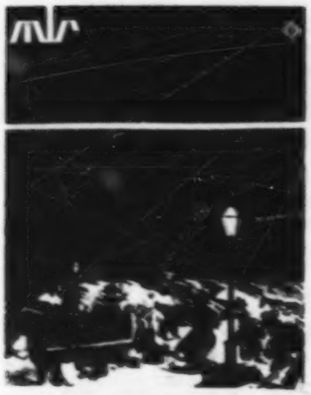

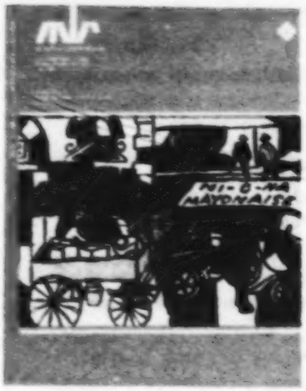
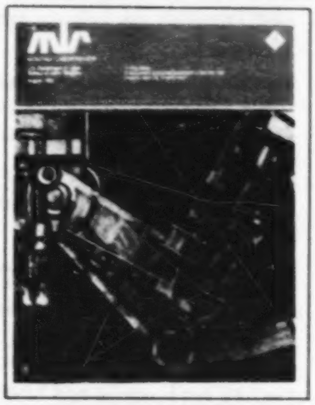

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